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V101:B. Sc. (Hospitality and Tourism Studies)
V102: B.Sc. (Hospitality Studies & Catering Services)

HTS 401: INTRODUCTION TO INDIAN COOKING

YASHWANTRAO CHAVAN MAHARASHTRA
OPEN UNIVERSITY

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V101: B. Sc. Hospitality and Tourism Studies
(2016 Pattern)

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CONTENTS

UNIT 1 INDIAN COOKING

Unit – 1 Indian Cooking: - Introduction, Philosophy of Indian Food, The great Indian Cuisine – Key features, Regional influences on Indian Food, Popular foods of India (At least one simple three course menu from each region of India , North, East, South, West and Central India its salient features and cooking).

1.00 BEFORE WE BEGIN

In this unit we will study Indian cooking. As you are going to be a professional in hospitality studies and will be seen as a brand ambassador for Indian cuisine, it will be one of the fundamental part of your study. We have studies various ingredients used in a kitchen during our study at the first semester under HTS 101 course. We will study the Indian cuisine in depth in this unit. India has been known for its signature spices which used to account for a great volume of the world trade during seventeenth to around nineteenth century. The trade of the British East India Company alone stood at around half the total world trade at one point of time. We will study the regional cuisines of the North, West, South, East and Central India and the various popular Food Items. The importance of the study of Indian Cuisine thus needs to be duly appreciated for being a professional Indian hospitality expert.

1.01 UNIT OBJECTIVES

After studying this unit you will be able to

- Describe the philosophy of Indian Food
- Explain the Key Features of Indian Cuisine
- Describe some popular foods of India
- Elaborate on at some popular foods from various states in India

1.02 PHILOSOPHY OF INDIAN FOOD

(Source: Article shared by Seevani, T., http://www.yourarticlelibrary.com/foods/philosophy-of-indian-food/86790 retrieved on 04-12-17)

Indian food is as varied as its culture and people. In every region, food changes its flavours and techniques of cooking. As Indian food is influenced by its religions, customs, and traditions, it is not easy to group it like the food of the Western world. There cannot be mother gravies like mother sauces and its derivatives. Each curry has it its own gravy.

It is a country where the climatic conditions are also so varied, that the availability of produce too determines the way the food is cooked. For example, in Rajasthan, which is an area mostly covered by deserts, vegetables do not grow and hence in the cuisine, one would see usage of dried berries and yoghurt-based gravies. Similarly in south India, where the land is apt for cultivation of rice, the vegetable dishes and curries have more liquid than compared to the vegetables in the north.

The strongest influence on Indian food is from ayurveda. Here we are not talking about kebabs and biryani, as this food was brought in by Mughal emperors who came into India from Persia and Iran. Ayurveda deals with areas concerning the healthy and long life of human beings. The origins of ayurveda probably date back to 1000 BC.

(Source: Wikipedia (n.d.), "Ayurveda")

Ayurveda (/ˌaɪ.ərˈveɪdə/) is a system of medicine with historical roots in the Indian subcontinent. Globalized and modernized practices derived from Ayurveda traditions are a type of complementary or alternative medicine. In countries beyond India, Ayurveda therapies and practices have been integrated in general wellness applications and in some cases in medical use.

The main classical Ayurveda texts begin with accounts of the transmission of medical knowledge from the Gods to sages, and then to human physicians. In Sushruta Samhita (Sushruta's Compendium), Sushruta wrote that Dhanvantari, Hindu god of Ayurveda, incarnated himself as a king of Varanasi and taught medicine to a group of physicians, including Sushruta. Ayurveda therapies have varied and evolved over more than two millennia. Therapies are typically based on complex herbal compounds, minerals and metal substances (perhaps under the influence of early Indian alchemy or rasa shastra). Ancient Ayurveda texts also taught surgical techniques, including rhinoplasty, kidney stone extractions, sutures, and the extraction of foreign objects.

Although laboratory experiments suggest it is possible that some substances used in Ayurveda might be developed into effective treatments, there is no evidence that any are effective as currently practiced. Ayurveda medicine is considered pseudoscientific. Other researchers consider it a protoscience, or trans-science system instead. In a 2008 study, close to 21% of Ayurveda U.S. and Indian-manufactured patent medicines sold through the Internet were found to contain toxic levels of heavy metals, specifically lead, mercury, and arsenic. The public health implications of such metallic contaminants in India are unknown.

Some scholars assert that Ayurveda originated in prehistoric times, and that some of the concepts of Ayurveda have existed from the time of the Indus Valley Civilization or even earlier. Ayurveda developed significantly during the Vedic period and later some of the non-Vedic systems such as Buddhism and Jainism also developed medical concepts and practices that appear in the classical Ayurveda texts. Humoral balance is emphasized, and suppressing natural urges is considered unhealthy and claimed to lead to illness. Ayurveda treatises describe three elemental substances, the humours (Sanskrit doṣas), wind (Sanskrit vāta), bile (pitta) and phlegm (kapha)), and state that equality (Skt. sāmyatva) of the doṣas results in health, while inequality (viṣamatva) results in disease. Ayurveda treatises divide medicine into eight canonical components. Ayurveda practitioners had developed various medicinal preparations and surgical procedures from at least the beginning of the common era about two thousand years back.

(Source: Article shared by Seevani, T., http://www.yourarticlelibrary.com/foods/philosophy-of-indian-food/86790 retrieved on 04-12-17)

Ayurveda does not only deal with natural medicines, it covers the whole aspect of life. It discusses the purpose of being born. It preaches that we live to eat and do not eat to live. Ayurveda talks about the aspects of mental as well as physical health and it suggests that the way to salvation is through healthy living, which includes eating good and living life on ethical code of conduct.

The very famous phrase 'you are what you eat' probably is the origin of the teachings of ayurveda. Life, in ayurveda, has been described as the combination of mind, body, and soul. A healthy body will

practice and preach healthy thoughts, which in turn will reform a soul and thus will help reach salvation.

Researches show that people, who are depressed, eat more and many diseases emerge from the fact that people keep the emotions bottled up inside them. This leads to coronary problems and hypertensions. Ayurveda talks about foods that regulate the health and even emotions of human beings. For example, the usage of the oil and ghee—oil is believed to heat the body whereas ghee is supposed to provide a cooling effect.

Another specialty of ghee is that it assimilates all the nutritional properties of the food that it is mixed in, without losing any of its own. The usage of oil in winters and ghee in summers is still widely followed in many Indian homes.

Ayurveda revolves around the concept that our body is made up of three elements—fire, air, and water, commonly referred in Sanskrit as vatta, pitta, and kappa. Ayurveda believes that rise of ailments and diseases are due to the imbalance in these elements. Even today, when doctors diagnose us with any ailment, we are advised to refrain from some kind of foods.

Ayurveda classifies food into the following six tastes:

Sweet

This type of taste gives strength to tissue elements and harmonizes the mind. Probably that is the reason why people always share sweets when they are celebrating. Ayurveda does not classify only sweet products into sweet taste; but also foods such as rice, ghee, and fruits form this category.

Salty

Salt stimulates digestion; it clears the obstructions in the nervous system of the body, thereby cleansing the body by the function of sweating. Excessive salt in the food tends to give rise to wrinkles and graying of hair.

Pungent

The pungent taste helps indigestion. Foods such as onions, garlic, pepper, etc. form this category. These types of food also help improve the metabolism in our body.

Bitter

These kinds of food help purify the blood and are easy to digest. Bitter gourd and some spices have this taste.

Astringent

These kinds of food help treat ulcers in the body and also help in healing wounds. Green vegetables, apples, potatoes, etc. are grouped into this category.

Sour

The sour taste aids in digestion and it is believed that it also helps the heart to function well.

Ayurveda believes that any deviation of these six tastes in food will bring about the imbalance in the elements of body and each element is responsible for certain diseases. This is where the concept of

thali evolved. It became imperative to serve foods to balance all the elements in our body. A healthy Indian meal would consist of rice, salad, lentils, vegetables, proteins in forms of paneer or meat, yoghurt, pickle, and sweet.

Ayurveda also classified food on the basis of its characteristics.

These are as follows:

Rasa

Food is categorized based on its tastes as listed above. Rasa is a Sanskrit word which means the taste.

Veerya

This is the food that provides potency to the body. Meat provides energy and vigour and hence, was given to warriors and kings. Brahmins and godly people were given food that did not provide heat to the body; thereby letting them meditate and stay in touch with God.

Prabhav

This is the food that has some special action on the body. This is known as tehseerin Urdu and it implies the hot and cold effects of food on body.

Two types of foods could be very similar in their rasa and veerya, but they still might differ in their prabhav on the body.

The human states of mind are also classified into three types. These states of mind of a person make them different to each other's response to stimuli. That is the reason why some people are so quiet and some so aggressive.

Ayurveda classifies them as the following:

Satyavik

Satya means pure and hence, a satyavik person will be a highly intellectual person, with a curious mind. He/she will always strive for more knowledge and will try to live life on fair means and his/her hard work.

Rajasik

This person will be the one who is basically a doer. He/she will use almost any means to succeed.

Tamasik

Tamasik on the other hand will have no desire to learn or expand his/her knowledge. He/she would also lack the intellectual capacity.

Ayurveda is the base that forms the philosophy of Indian cuisine. Ayurveda even talks about how the food tastes different when cooked with love and when cooked in angry mood. Probably that is why home cooked food made with respect and love is always the best and tasty. In many Indian homes, in spite of having cooks at home, some women prefer to cook food for the family with their own hands.

Meats and spicy food have a force of violence in it; hence, it is believed that people will be more aggressive if they live on these diets. Ayurveda teaches humans to follow the purity of life, to respect

food and the times it should be eaten. It teaches us to eat nutritious food and practice yoga and meditation to purify our mind, body, and soul.

We maintain some of the sanctity of the ayurvedic concepts of food till today. Indian foods has a very simple philosophy—'cook what is in the season, with love and respect and share the food with people and enjoy life to its fullest'.

Even at most of the hotels, there is a section in the menu called ghar ka khana, which means home style food. The moment we talk about homemade food; we think of food that is cooked with less oil, less spices, and is fresh and seasonal.

Indian food has been influenced by many factors—one of them is religion, another is the regional influence on the food. One would frequently hear about terms such as cuisines of royal gharanas, cuisines of Mewars, cuisines of Iyengars, or Kashmiri Pundit cuisine, and so on.

Fig 1.01: Vegetable biryani is both delicious and healthy — and fits within Ayurvedic philosophy

(Photo by Kimberly Bryant. https://www.waiter.com/blog/specialty-cuisines/mindful-office-meals-indian-food-ayurvedic-philosophy-bring-clarity-work)

Mindful Office Meals: How Indian Food and Ayurvedic Philosophy Bring Clarity at Work

(Posted by Kimberly B. on Thursday, October 2nd, 2014, https://www.waiter.com/blog/specialty-cuisines/mindful-office-meals-indian-food-ayurvedic-philosophy-bring-clarity-work)

Office meals are an opportunity to strengthen the connection between employees, and cultivate a supportive, community-based company culture. Within this is ample room for inspiration, fun, play, and wellness. One cuisine that enables us to touch upon these aspects of a positive, healthful work environment is Indian. Much of Indian food is originally based in Ayurvedic philosophy, an approach to life that promotes mindful eating. And there's no need to be an expert in mindfulness or interested in Indian culture to reap the benefits of such a philosophy. In fact, it's quite simple to pull together a delicious office meal with Indian food delivery that's based around the mindfulness inspired by Ayurvedic philosophy.

Fig 1.02: Smoothies made from fresh fruit and yogurt are a nutritious treat.
(Photo by Kimberly Bryant. Ibid)

Three dosha types

Nearly 6,000 years old, Ayurveda began in India with a focus on practices that helped monks in their quest to discover the "knowledge of life." The underlying goal in Ayurveda is to create and maintain balance in our lives, both physically and emotionally. One of the ways we can achieve this is through food. Ayurveda uses something called doshas to organize people into three categories – Vata, Pitta, and Kapha. These categories help us to tailor our diets to our physical bodies and personality types.

To bring everyone up to speed, here is a brief overview of the three types of dosha energies. People who are considered Vata are usually slim figured and delicate, highly creative and energetic, and prone to anxiety. Pitta people tend to be sturdy and strong in body, well-balanced overall, intelligent and contented. And Kapha types are rounder in shape, passionate with love, and can struggle with insecurity. But these are just basic, general guidelines. While the philosophies behind the three dosha types are quite in-depth, we're going to stick with the aspects related to food. Each dosha type has a diet best-suited to them: Vata types are fueled by cooked, easily digestible foods, while Pitta types benefit from lots of fruits and veggies, and Kapha types are nourished by light and spicy foods.

An Ayurveda-inspired office meal

For the Vata types in the office, try ordering some fresh fruit lassies, preferably with strawberries, blueberries, or raspberries. Lassies are a type of smoothie common in India, made with fresh yogurt, and typically eaten at breakfast – but are great any other time of day, as well! Dairy products are well-suited to Vatas, as are berries, beans, nuts, and rice, and warm foods. This makes an order of

vegetable biryani – a staple of Indian cuisine – a perfect dish. Made from rice, veggies, dried fruit, turmeric, spices, and nuts, biryani is a tasty way for Vata employees to re-fuel.

Vegetable biryani also works for Kapha types, who do well with spices such as cumin, and should try to avoid overly heavy meals. As for drinks, an order of ginger and lemon tea will perk up even the sleepiest Kapha type in the office — this re-energizing drink is recommended as a healthy pick-me-up for anyone on staff who craves a healthy alternative to coffee.

Both Pitta and Kapha benefit from dishes with plenty of dark greens, such as kale or spinach. A hearty palak paneer with a side of brown rice is a delicious choice – this warm, spinach-based curry with chunks of cheese goes well with either rice or an Indian flatbread, like naan. Palak paneer meets the requirements of all three dosha types, while being a colorful complement to an order of vegetable biryani. To please the carnivores on staff, simply add chicken biryani to the mix. It's the same dish as the vegetable version, but with chicken added.

Mindful eating from different cultures

One of the best parts about Ayurveda is that it gets employees thinking about food beyond what it tastes like. Food has the potential to bond us socially, as well as heal our physical and emotional ailments. Combining Ayurvedic wisdom with our Indian food delivery orders enables us to create mindful meals at work that bring clarity and connection to our staff members, our company, and our food.

A healthy staff is a productive staff, and an office that cultivates a company culture based in mindfulness will be that much further ahead of the competition. Ordering Ayurveda-inspired meals for the office is just one of the many ways that we can nourish our bodies, minds, and spirits at work, while mixing it up with multi-cultural cuisine. What delicious dishes will your staff be tucking into this week? Waiter.com is ready and waiting to bring you healthy, great tasting food to sate hungry mouths and re-ignite office energy.

CHECK YOUR PROGRESS

Which are the three doshas as per Ayurveda and what are its implications for food preparation?
What is the philosophy of Ayurveda for non-vegetarian food?
Explain the mindful eating from different cultures.
Elaborate the Satvik, Rajas and tamasik properties of food.
What are the six tastes and what are their properties as per Ayurveda?

1.03 KEY FEATURES OF INDIAN CUISINE

(Source: https://en.wikipedia.org/wiki/Indian_cuisine)

Indian cuisine comprises a wide variety of regional and traditional cuisines native to the Indian subcontinent. Given the range of diversity in soil type, climate, culture, ethnic groups, and occupations, these cuisines vary substantially from each other and use locally available spices, herbs, vegetables, and fruits. Indian food is also heavily influenced by religious, in particular Hindu, and cultural choices and traditions. Also, Middle Eastern and Central Asian influences have occurred on

North Indian cuisine from the years of Mughal rule. Indian cuisine is still evolving, as a result of the nation's cultural interactions with other societies.

Historical incidents such as foreign invasions, trade relations, and colonialism have played a role in introducing certain foods to the country. For instance, potato, a staple of the diet in some regions of India, was brought to India by the Portuguese, who also introduced chillies and breadfruit. Indian cuisine has shaped the history of international relations; the spice trade between India and Europe was the primary catalyst for Europe's Age of Discovery. Spices were bought from India and traded around Europe and Asia. Indian cuisine has influenced other cuisines across the world, especially those from Europe, the Middle East, North Africa, sub-Saharan Africa, Southeast Asia, the British Isles, Fiji, and the Caribbean.

(Source: https://www.indianfoodsguide.com/cuisine-of-india/regional-cuisine-of-india/indian-cuisine.html)

Indian cuisine is distinguished by its sophisticated use of spices and herbs and the influence of the longstanding and widespread practice of vegetarianism in Indian society.

Food is an integral part of India's culture, with cuisines differing according to community, region, and state. Indian cuisine is characterized by a great variety of foods, spices, and cooking techniques. Furthermore, each religion, region, and caste has left its own influence on Indian food.

Many recipes first emerged when India was predominantly inhabited by Vedic Hindus. Later, Christians, British, Buddhists, Portuguese, most importantly Muslims from Turkish, Arabs, Mughals, and Persians settlers and others had their influence. Vegetarianism came to prominence during the rule of Ashoka, one of the greatest of Indian rulers who was a promoter of Buddhism. In India, food, culture, religion, and regional festivals are all closely related. Indian meat and fish cuisine is mostly influenced by the Muslim population.

History

(Source: Wikipedia)

Indian cuisine reflects an 8,000-year history of various groups and cultures interacting with the subcontinent, leading to diversity of flavours and regional cuisines found in modern-day India. Later, trade with British and Portuguese influence added to the already diverse Indian cuisine.

Antiquity

Early diet in India mainly consisted of legumes, vegetables, fruits, grains, dairy products, and honey. Staple foods eaten today include a variety of lentils (dal), whole-wheat flour (aṭṭa), rice, and pearl millet (bājra), which has been cultivated in the Indian subcontinent since 6200 BCE. Over time, segments of the population embraced vegetarianism during Śramaṇa movement while an equitable climate permitted a variety of fruits, vegetables, and grains to be grown throughout the year. A food classification system that categorised any item as saatvic, raajsic, or taamsic developed in Yoga tradition. The Bhagavad Gita proscribes certain dietary practices (chapter 17, verses 8–10). Consumption of beef is taboo, due to cows being considered sacred in Hinduism. Beef is generally not eaten by Hindus in India except for Kerala and the north east.

Middle Ages to the 16th centuries

During the Middle Ages, several Indian dynasties were predominant, including the Gupta dynasty. Travelling to India during this time introduced new cooking methods and products to the region, including tea. India was later invaded by tribes from Central Asian cultures, which led to the

emergence of Mughlai cuisine, a mix of Indian and Central Asian cuisine. Hallmarks include seasonings such as saffron.

Elements

A typical assortment of spices used in Indian cuisine. The staples of Indian cuisine are rice, atta (whole

Fig 1.03: Spices at a grocery shop in India (Source: Wikipedia)

wheat flour), and at least five dozen varieties of pulses, the most important of which are chana (bengal gram), toor (pigeon pea or red gram), urad (black gram) and mung (green gram). Chana is used in different forms, may be whole or processed in a mill that removes the skin, eg dhuli moong or dhuli urad, and is sometimes mixed with rice and khichri (a food that is excellent for digestion and similar to the chick pea, but smaller and more flavorful). Pulses are used almost exclusively in the form of dal, except chana, which is often cooked whole for breakfast and is processed into flour (besan). Most Indian curries are fried in vegetable oil. In North India, groundnut oil is traditionally been most popular for frying, while in Eastern India, Mustard oil is more commonly used. In South India, coconut oil is common. In recent decades, sunflower oil and soybean oil have gained popularity all over India. Hydrogenated vegetable oil, known as Vanaspati ghee is also a popular cooking medium.

The most important spices in Indian cuisine are chilli pepper, black mustard seed (rai), cumin (jeera), turmeric, fenugreek, ginger, coriander and asafoetida (hing). Another very important spice is garam masala which is usually a powder of five or more dried spices, commonly comprised of cardamom, cinnamon and clove. Some leaves are commonly used like bay leaf, coriander leaf and mint leaf. The common use of curry leaves is typical of South Indian cuisine. In sweet dishes, cardamom, cinnamon, nutmeg, saffron and rose petal essence are used.

Ingredients

(Source: Wikipedia)

Staple foods of Indian cuisine include pearl millet (bājra), rice, whole-wheat flour (aṭṭa), and a variety of lentils, such as masoor (most often red lentils), toor (pigeon peas), urad (black gram), and moong (mung beans). Lentils may be used whole, dehusked—for example, dhuli moong or dhuli urad—or

split. Split lentils, or dal, are used extensively. Some pulses, such as channa or cholae (chickpeas), rajma (kidney beans), and lobiya (black-eyed peas) are very common, especially in the northern regions. Channa and moong are also processed into flour (besan).

Many Indian dishes are cooked in vegetable oil, but peanut oil is popular in northern and western India, mustard oil in eastern India, and coconut oil along the western coast, especially in Kerala. Gingelly (sesame) oil is common in the south since it imparts a fragrant, nutty aroma. In recent decades, sunflower, safflower, cottonseed, and soybean oils have become popular across India. Hydrogenated vegetable oil, known as Vanaspati ghee, is another popular cooking medium. Butter-based ghee, or deshi ghee, is used frequently, though less than in the past. Many types of meat are used for Indian cooking, but chicken and mutton tend to be the most commonly consumed meats. Fish and beef consumption are prevalent in some parts of India, but they are not widely consumed except for coastal areas, as well as the north east.

Fig 1.04: Lentils are a staple ingredient in Indian cuisine. (source: Wikipedia)

The most important and frequently used spices and flavourings in Indian cuisine are whole or powdered chilli pepper (mirch, introduced by the Portuguese from Mexico in the 16th century), black mustard seed (sarso), cardamom (elaichi), cumin (jeera), turmeric (haldi), asafoetida (hing), ginger (adrak), coriander (dhania), and garlic (lasoon). One popular spice mix is garam masala, a powder that typically includes five or more dried spices, especially cardamom, cinnamon (dalchini), and clove (laung). Each culinary region has a distinctive garam masala blend—individual chefs may also have their own. Goda masala is a comparable, though sweet, spice mix popular in Maharashtra. Some leaves commonly used for flavouring include bay leaves (tejpat), coriander leaves, fenugreek leaves, and mint leaves. The use of curry leaves and roots for flavouring is typical of Gujarati and South Indian cuisine. Sweet dishes are often seasoned with cardamom, saffron, nutmeg, and rose petal essences.

Eating Habits

(Wikipedia, Indian Cuisine)

Indians consider a healthy breakfast important. They generally prefer to drink tea or coffee with breakfast, though food preferences vary regionally. North Indian people prefer roti, parathas, and a vegetable dish accompanied by achar (a pickle) and some curd. Various types of packaged pickles are available in the market. One of the oldest pickle-making companies in India is Harnarains, which had

started in the 1860s in Old Delhi. People of Gujarat prefer dhokla and milk, while south Indians prefer idli and dosa, generally accompanied by sambhar or sagu and various chutneys.

Fig 1.05: Paan is often eaten after meal

(Source: Wikipedia, Indian Cuisine)

Traditional lunch in India usually consists of a main dish of rice in the south and the east, and whole wheat rotis in the north. It typically includes two or three kinds of vegetables, and sometimes items such as kulcha, naan, or parathas. Paan (stuffed, spiced and folded betel leaves) which aids digestion is often eaten after lunch and dinner in many parts of India.

Indian families often gather for "evening breakfast," similar to tea time to talk and have tea and snacks. Dinner is considered the main meal of the day.

Etiquettes

Traditionally, meals in India were eaten while seated either on the floor or on very low stools or cushions. Food is most often eaten with the right hand rather than cutlery. The left hand is used to serve oneself when the courses are not served by the host. Often roti is used to scoop curry without allowing it to touch the hand. In the wheat-producing north, a piece of roti is gripped with the thumb and middle finger and ripped off while holding the roti down with the index finger. A somewhat different method is used in the south for the dosai, the adai, and the uththappam, where the middle finger is pressed down to hold the crepe down and the forefinger and thumb used to grip and separate a small part. Traditional serving styles vary regionally throughout India.

Contact with other cultures has affected Indian dining etiquette. For example, the Anglo-Indian middle class commonly uses spoons and forks, as is traditional in Western culture.

In South India, cleaned banana leaves, which can be disposed of after meals, are used for serving food. When hot food is served on banana leaves, the leaves add distinctive aromas and taste to the food. Leaf plates are less common today, except on special occasions.

CHECK YOUR PROGRESS

Elaborate on the historical development of Indian food during antiquity.
Discuss the progress made by Indian Food during medieval period.
Explain the key elements in Indian foods.
Describe the various ingredients used in Indian food.
Elaborate on eating habits of Indians.
Explain various etiquettes followed by Indians while eating.

1.04 REGIONAL INFLUENCE ON INDIAN FOOD

Cuisine differs across India's diverse regions as a result of variation in local culture, geographical location (proximity to sea, desert, or mountains), and economics. It also varies seasonally, depending on which fruits and vegetables are ripe.

(Source: https://www.indianfoodsguide.com/cuisine-of-india/regional-cuisine-of-india/indian-cuisine.html)

North Indian

North Indian cuisine is distinguished by the higher proportion-wise use of dairy products; milk, paneer (cottage cheese), ghee (clarified butter), and yoghurt are all common ingredients, compared to that of southern India, where milk products, though consumed in large quantities, are usually used unaltered. North Indian gravies are typically dairy-based and employ thickening agents such as cashew or poppy seed paste. Milk-based sweets are also very popular fare, being a particular specialty in Bengal and Orissa. Other common ingredients include chillies, saffron, and nuts.

North Indian cooking features the use of the tandoor, a large and cylindrical coal-fired oven, for baking breads such as naan and khakhra; main courses like tandoori chicken also cook in it. Fish and seafood are very popular in the coastal states of Orissa and West Bengal.

Another important feature on North Indian cuisine are flat breads. These come in many different forms such as naan, paratha, roti, puri, bhatoora, and kulcha.

The samosa is a typical North Indian snack. These days it is common to get it in other parts of India as well. The most common (and authentic) samosa is filled with boiled, fried, and mashed potato, although it is possible to find other fillings.

North Indian cuisine has some typical details that are interesting. There are popular things like Buknu, Gujhiya, chaat, daal ki kachauri, jalebi, imarti, several types of pickles (known as achar), murabba, sharbat, pana, aam papad, and Poha-Jalebi.

There are several popular sweets (mithai) like mallai ki gillori, khurchan (from Mathura), petha (from Agra), rewdi (from Lucknow), gajak (from Meerut), milk cake (from Alwar), falooda, khaja (from Aligarh), Ras Malai, Gulab Jamun, Laddu, Barfi, Halwa, Gul Qand, and Balusahi.

The countries known as Pakistan and Bangladesh were a part of North and East India prior to the partition of India. As a result, the cuisines in these countries are very similar to northern and eastern Indian cuisine.

South Indian

Lunch from Karnataka served on a plantain leaf.South Indian cuisine is distinguished by a greater emphasis on rice as the staple grain, the liberal use of coconut and curry leaves particularly coconut oil, and the ubiquity of sambar and rasam (also called saaru) at meals.

South Indian cooking is even more vegetarian-friendly than north Indian cooking. The practice of naivedya, or ritual offerings, to Krishna at the Krishna Mutt temple in Udipi, Karnataka, has led to the Udipi style of vegetarian cooking. The variety of dishes which must be offered to Krishna forced the cooks of the temple to innovate. Traditional cooking in Udupi Ashtamatha is characterized by the use of local seasonal ingredients. Garam masala is generally avoided in South Indian cuisine.

The dosa, idli, vada, bonda, and bajji are typical South Indian snacks.

Western

Chicken Tikka MasalaBritain has a particularly strong tradition of Indian cuisine that originates from the British Raj. At this time there were a few Indian restaurants in the richer parts of London that catered to British officers returning from their duties in India.

In the 20th century there was a second phase in the development of Anglo-Indian cuisine, as families from countries such as Bangladesh migrated to London to look for work. Some of the earliest such restaurants were opened in Brick Lane in the East End of London, a place that is still famous for this type of cuisine.

In the 1960s, a number of inauthentic "Indian" foods were developed, including the widely popular "chicken tikka masala". This tendency has now been reversed, with subcontinental restaurants being more willing to serve authentic Indian, Bangladeshi and Pakistani food, and to show their regional variations. In the late twentieth century Birmingham was the centre of growth of Balti houses, serving a newly developed style of cooking in a large, wok-like, pan, with a name sometimes attributed to the territory of Baltistan, (however, the Hindi word for bucket is also Balti). Indian food is now integral to the British diet: indeed it has been argued that Indian food can be regarded as part of the core of the British cuisine.

After the Immigration Act of 1965, South Asian immigration to the United States increased, and with it the prevalence of Indian cuisine, especially in San Francisco, Los Angeles, Chicago, the New York City neighborhoods of Murray Hill, Jackson Heights and East 6th Street, and in Edison, NJ. In many Indian restaurants in the U.S., all-you-can-eat buffets with several standard dishes have become the norm.

Indian restaurants are common in the larger cities of Canada, particularly in Toronto and Vancouver where large numbers of Indian nationals have settled since 1970. A number of the more adventurous restaurants have transformed their offerings into so-called Indian "fusion" menus, combining fresh local ingredients with traditional Indian cooking techniques. Indian restaurants can also be found in many European and Australian cities, particularly Paris, London, and Istanbul.

Due to the large Indian community in South Africa, the cuisine of South Africa includes several Indian-origin dishes; some have evolved to become unique to South Africa, such as the bunny chow. Many others are modified with local spices.

Beverages

Tea (Hindi: chai) is a staple beverage throughout India; the finest varieties are grown in Darjeeling and Assam. It is generally prepared as masala chai, a boiled mixture of milk and spices. The less popular coffee is largely confined to South India. One of the finest varieties of Coffea arabica is grown around Mysore, Karnataka, and is marketed under the trade name "Mysore Nuggets". Other beverages include nimbu pani (lemonade), lassi, and coconut milk. India also has many indigenous alcoholic beverages, including palm wine, fenny, and Indian beer.

CHECK YOUR PROGRESS

What are the major dishes in North Indian Cuisine?
Describe the key features of South Indian cooking.
Explain the various ingredients used in West Indian cooking.
Discuss the various specialties for the East Indian cuisine.

1.05 POPULAR FOODS OF NORTH INDIA

(Source: Wikipedia, Indian Cuisine)

Chandigarh (N)

Chandigarh, the capital of Punjab and Haryana is a city of 20th century origin with a cosmopolitan food culture mainly involving North Indian cuisine.

People enjoy home-made recipes such as parantha, especially at breakfast, and other Punjabi foods like roti which is made from wheat, corn, or other glutenous flour with cooked vegetables or beans. Sarson da saag and dal makhani are well-known dishes among others. Popular snacks include gol gappa (known as panipuri in other places). It consists of a round, hollow puri, fried crisp and filled with a mixture of flavoured water, boiled and cubed potatoes, bengal gram beans, etc.

Haryana (N)

Cattle being common in Haryana, dairy products are a common component of its cuisine. Specific dishes include kadhi, pakora, besan masala roti, bajra aloo roti, churma, kheer, bathua raita, methi gajar, singri ki sabzi, and tamatar chutney.

Lassi, sharbat, and nimbu pani are three popular nonalcoholic beverages in Haryana. Liquor stores are common there, which cater to a large number of truck drivers.

Himachal Pradesh (N)

The daily diet of Himachal people is similar to that of the rest of North India, including lentils, broth, rice, vegetables, and bread, although nonvegetarian cuisine is preferred. Some of the specialities of Himachal include sidu, patande, chukh, rajmah, and til chutney.

Jammu and Kashmir (N)

Fig 1.06: Rogan josh is a popular Kashmiri dish.

The cuisine of Jammu and Kashmir is from three regions of the state: Jammu, Kashmir, and Ladakh. Kashmiri cuisine has evolved over hundreds of years. Its first major influence was the food of the Kashmiri Hindus and Buddhists. The cuisine was later influenced by the cultures which arrived with the invasion of Kashmir by Timur from the area of modern Uzbekistan. Subsequent influences have included the cuisines of Central Asia and the North Indian plains. The most notable ingredient in Kashmiri cuisine is mutton, of which over 30 varieties are known. Wazwan is a multicourse meal in the Kashmiri tradition, the preparation of which is considered an art.

Kashmiri Pandit food is elaborate, and an important part of the Pandits' ethnic identity. Kashmiri Pandit cuisine usually uses yogurt, oil, and spices such as turmeric, red chilli, cumin, ginger, and fennel, though they do not use onion and garlic. Also, birayanis are quite popular here. They are the speciality of Kashmir.

Punjab (N)

The cuisine of Punjab is known for its diverse range of dishes. The state, being an agriculture center, is abundant with whole grains, vegetables, and, fruits. Home-cooked and restaurant Punjabi cuisine can vary significantly. Restaurant-style Punjabi cooking puts emphasis on creamy textured foods by using ghee, butter and cream to accustom various kinds of guest taste preferences; while, home-cooked equivalents center around whole wheat, rice, and other ingredients flavored with various kinds of masalas. Common dishes cooked at home are roti with daal and dahi with a side chutney and salad that includes raw onion, tomato, cucumber, etc. The meals are also abundant of local and seasonal vegetables usually sautéed with spices such as cumin, dried coriander, red chili powder, turmeric, black cloves, etc. Masala Chai is a favorite drink and is consumed in everyday life and at special occasions. Many regional differences exist in the Punjabi cuisine based on traditional variations in cooking similar dishes, food combinations, preference of spice combination, etc. Is it apparent that "the food is simple, robust, and, closely linked to the land. Certain dishes exclusive to Punjab, such as makki di roti and sarson da saag., daal makhni, etc. are a favorite of many. The masala in a Punjabi dish traditionally consists of onion, garlic, ginger, cumin, garam masala, salt, turmeric, tomatoes sauteed in mustard oil. Tandoori food is a Punjabi specialty. Common meat dishes in this region are Bhakra curry (Goat) and fish dishes Dairy products are commonly consumed and usually accompany main meals in the form of dahi, milk, and milk derived products such as lassi, paneer, etc. Punjab consists of a high number of people following the Sikh religion who traditionally follow a vegetarian diet (which includes plant derived foods, milk, and milk by-products. See diet in Sikhism) in accordance to their beliefs.

Fig 1.07: Tandoori chicken is a popular grilled dish.

No description of Punjabi cuisine is complete without the myriad of famous desserts, such as kheer, gajrela, sooji (cream of wheat) halwa, rasmalai, gulab jamun and jalebi. Most desserts are ghee or dairy based, use nuts such as almonds, walnuts, pistachios, cashews, and, raisins.

Many of the most popular elements of Anglo-Indian cuisine, such as tandoori foods, naan, pakoras and vegetable dishes with paneer, are derived from Punjabi styles. Punjabi food is well liked in the world for its flavors, spices, and, versatile use of produce; and hence it is one of the most popular cuisine's from the sub continent. And last but not least is the Chhole Bhature and Chhole Kulche which are famous all over the north India.

Sikkim (N)

In Sikkim, various ethnic groups such as the Nepalese, Bhutias, and Lepchas have their own distinct cuisines. Nepalese cuisine is very popular in this area. Rice is the staple food of the area, and meat and dairy products are also widely consumed. For centuries, traditional fermented foods and beverages have constituted about 20 percent of the local diet. Depending on altitudinal variation, finger millet, wheat, buckwheat, barley, vegetables, potatoes, and soybeans are grown. Dhindo, Daal bhat, Gundruk, Momo, gya thuk, ningro, phagshapa, and sel roti are some of the local dishes. Alcoholic drinks are consumed by both men and women. Beef is eaten by the Bhutias.

Uttar Pradesh (N)

Traditionally, Uttar Pradeshi cuisine consists of Awadhi and Mughlai cuisine, though a vast majority of the state is vegetarian, preferring dal, roti, sabzi, and rice. Pooris and kachoris are eaten on special

occasions. Chaat, samosa, and pakora, among the most popular snacks in India, originate from Uttar Pradesh. Well known dishes include kebabs, dum biryani, and various mutton recipes. Sheer Qorma, Ghevar, Gulab jamun, Kheer, and Ras malai are some of the popular desserts in this region.

Fig 1.08: Uttar Pradeshi thali (platter) with naan, daal, raita, gul paneer, and salad

Awadhi cuisine (Hindi: अवधी खाना) is from the city of Lucknow, which is the capital of the state of Uttar Pradesh in Central-South Asia and Northern India, and the cooking patterns of the city are similar to those of Central Asia, the Middle East, and other parts of Northern India. The cuisine consists of both vegetarian and non-vegetarian dishes. Awadh has been greatly influenced by Mughal cooking techniques, and the cuisine of Lucknow bears similarities to those of Central Asia, Kashmir, Punjab and Hyderabad. The city is also known for its Nawabi foods. The bawarchis and rakabdars of Awadh gave birth to the dum style of cooking or the art of cooking over a slow fire, which has become synonymous with Lucknow today. Their spread consisted of elaborate dishes like kebabs, kormas, biryani, kaliya, nahari-kulchas, zarda, sheermal, roomali rotis, and warqi parathas. The richness of Awadh cuisine lies not only in the variety of cuisine but also in the ingredients used like mutton, paneer, and rich spices, including cardamom and saffron.

Mughlai cuisine is a style of cooking developed in the Indian subcontinent by the imperial kitchens of the Mughal Empire. It represents the cooking styles used in North India (especially Uttar Pradesh). The cuisine is strongly influenced by the Central Asian cuisine, the region where the Chagatai-Turkic Mughal rulers originally hailed from, and it has in turn strongly influenced the regional cuisines of Kashmir and the Punjab region. The tastes of Mughlai cuisine vary from extremely mild to spicy, and is often associated with a distinctive aroma and the taste of ground and whole spices. A Mughlai course is an elaborate buffet of main course dishes with a variety of accompaniments.

Uttarakhand (N)

The food from Uttrakhand is known to be healthy and wholesome to suit the high-energy necessities of the cold, mountainous region. It is a high protein diet that makes heavy use of pulses and vegetables. Traditionally it is cooked over wood or charcoal fire mostly in iron utensils. While also making use of condiments such as jeera, haldi and rai common in other Indian cuisines, Uttarakhand cuisine uses some exotic condiments like jambu, timmer, ghandhraini and bhangira. Similarly, although the people in Uttarakhand also prepare the dishes common in other parts of northern India, several preparations are unique to Uttarakhand tradition such as rus, chudkani, dubuk, chadanji, jholi, kapa, etc. Among dressed salads and sauces, kheere ka raita, nimbu mooli ka raita, daarim ki khatai and aam ka fajitha necessarily deserve a mention. The cuisine mainly consists of food from two different sub regions—Garhwal and Kumaon—though their basic ingredients are the same. Both the

Kumaoni and Garhwali styles make liberal use of ghee, lentils or pulses, vegetables and bhaat (rice). They also use Badi (sun-dried Urad Dal balls) and Mungodi (sun-dried Moong Dal balls) as

Fig 1.09: Saag, a popular Kumauni dish from Uttarakhand, is made from any of the various green vegetables like spinach and fenugreek.

substitutes for vegetables at times. During festivals and other celebrations, the people of Uttarakhand prepare special refreshments which include both salty preparations such as bada and sweet preparations such as pua and singal. Uttarakhand also has several sweets (mithai) such as singodi, bal-mithai, malai laddu, etc. native to its tradition.

CHECK YOUR PROGRESS

Describe the important delicacies of Chandigarh.
Explain the various dishes of Haryana.
Discuss the cuisine of Himachal Pradesh.
Elaborate on the culinary traditions of Jammu and Kashmir.
Explain the variety of delicacies of Punjab.
Discuss the traditional foods of Sikkim.
Elaborate on the culinary practices of Uttar Pradesh.
Describe the variety of delicacies of Uttarakhand.

1.06 POPULAR FOODS OF EAST INDIA

Arunachal Pradesh (E)

The staple food of Arunachal Pradesh is rice, along with fish, meat, and leaf vegetables. Many varieties of rice are used. Lettuce is the most common vegetable, usually prepared by boiling with ginger, coriander, and green chillies. Boiled rice cakes wrapped in leaves are a popular snack. Thukpa is a kind of noodle soup common among the Monpa tribe of the region. Native tribes of Arunachal are meat eaters and use fish, eggs, beef, chicken, pork, and mutton to make their dishes. Apong or rice beer made from fermented rice or millet is a popular beverage in Arunachal Pradesh and is consumed as a refreshing drink.

Assam (E)

Fig 1.10: Assamese Thali

Assamese cuisine is a mixture of different indigenous styles, with considerable regional variation and some external influences. Although it is known for its limited use of spices, Assamese cuisine has strong flavours from its use of endemic herbs, fruits, and vegetables served fresh, dried, or fermented. Rice is the staple food item and a huge variety of endemic rice varieties, including several varieties of sticky rice are a part of the cuisine in Assam. Fish, generally freshwater varieties, are widely eaten. Other nonvegetarian items include chicken, duck, squab, snails, silkworms, insects, goat, pork, venison, turtle, monitor lizard, etc. The region's cuisine involves simple cooking processes, mostly barbecuing, steaming, or boiling. Bhuna, the gentle frying of spices before the addition of the main ingredients, generally common in Indian cooking, is absent in the cuisine of Assam. A traditional meal in Assam begins with a khar, a class of dishes named after the main ingredient and ends with a tenga, a sour dish. Homebrewed rice beer or rice wine is served before a meal. The food is usually served in bell metal utensils. Paan, the practice of chewing betel nut, generally concludes a meal.

Bihar (E)

Bihari cuisine is wholesome and simple. Litti chokha, a baked salted wheat-flour cake filled with sattu (baked chickpea flour) and some special spices, is well known among the middle-class families served with baigan bharta, made of roasted eggplant and tomatoes. Among meat dishes, meat saalan is a popular dish made of mutton or goat curry with cubed potatoes in garam masala. Dalpuri is another popular dish in Bihar. It is salted wheat-flour bread, filled with boiled, crushed, and fried gram pulses. Malpua is a popular sweet dish of Bihar, prepared by a mixture of maida, milk, bananas, cashew nuts, peanuts, raisins, sugar, water, and green cardamom. Another notable sweet dish of Bihar is balushahi, which is prepared by a specially treated combination of maida and sugar along with ghee, and the other worldwide famous sweet, khaja, also very popular, is made from flour, vegetable fat, and sugar, which is mainly used in weddings and other occasions. Silav near Nalanda is famous for its production. During the festival of Chhath, thekua, a sweet dish made of ghee, jaggery, and whole-

meal flour, flavoured with aniseed, is made.

Fig 1.11: Palak paneer, a dish made from spinach and paneer (cottage cheese)

Manipur (E)

Manipuri cuisine is represented by the cuisine of the Meitei people who form the majority population in the central plain. Meitei food are simple, tasty, organic and healthy. Rice with local seasonal vegetables and fish form the main diet. Most of the dishes are cooked like vegetable stew, flavored with either fermented fish called ngari, or dried and smoked fish. The most popular manipuri dish is the iromba; it's a preparation of boiled and mashed vegetables, often including potatoes or beans, mixed with chilli and roasted fermented fish. Another popular dish is the savory cake called Paknam, made of a base of lentil flour stuffed with various ingredients such as banana inflorescence, mushrooms, fish, vegetables etc., and baked covered in turmeric leaves. Along with spicy dishes, a mild side dish of steamed or boiled sweet vegetables are often served in the daily meals. The manipuri salad dish called singju, made of finely julienned cabbage, green papaya, and other vegetables, and garnished with local herbs, toasted sesame powder and lentil flour is extremely popular locally, and often found sold in small street side vendors. Singju is often served with bora which are fritters of various kinds, and also kanghou, or oil fried spicy veggies. Cooked and fermented soybean is a popular condiment in all manipuri kitchens. The staple diet of Manipur consists of rice, fish, large varieties of leafy vegetables (of both aquatic and terrestrial). Manipuris typically raise vegetables in a kitchen garden and rear fishes in small ponds around their house. Since the vegetables are either grown at home or obtained from local market, the cuisines are very seasonal, each season having its own special vegetables and preparations. The taste is very different from mainland Indian cuisines because of the use of various aromatic herbs and roots that are peculiar to the region. They are however very similar to the cuisines of Southeast/East/Central Asia, Siberia, Micronesia and Polynesia.

Meghalaya (E)

Meghalayan cuisine is unique and different from other Northeastern Indian states. Spiced meat is common, from goats, pigs, fowl, ducks, chickens, and cows. In the Khasi and Jaintia Hills districts, common foods include jadoh, ki kpu, tung-rymbai, and pickled bamboo shoots. Other common foods in Meghalaya include minil songa (steamed sticky rice), sakkin gata, and momo dumplings. Like other tribes in the northeast, the Garos ferment rice beer, which they consume in religious rites and secular celebrations.

Mizoram (E)

The cuisine of Mizoram differs from that of most of India, though it shares characteristics to other regions of Northeast India and North India. Rice is the staple food of Mizoram, while Mizos love to add non-vegetarian ingredients in every dish. Fish, chicken, pork and beef are popular meats among Mizos. Dishes are served on fresh banana leaves. Most of the dishes are cooked in mustard oil. Meals tend to be less spicy than in most of India. Mizos love eating boiled vegetables along with rice. A popular dish is bai, made from boiling vegetables (spinach, eggplant, beans, and other leafy vegetables) with bekang fermented soya beans or Sa-um, a fermented pork and served with rice. Sawhchiar is another common dish, made of rice and cooked with pork or chicken.

Nagaland (E)

Fig 1.12: Dried fish, prawns, ghost chili, and preserved colocasia leaves are common ingredients in Naga cuisine

The cuisine of Nagaland reflects that of the Naga people. It is known for exotic pork meats cooked with simple and flavourful ingredients, like the extremely hot Bhut jolokia pepper, fermented bamboo shoots and akhuni or fermented soya beans. Another unique and strong ingredient used by the Naga people, is the fermented fish known as ngari. Fresh herbs and other local greens also feature prominently in the Naga cuisine. The Naga use oil sparingly, preferring to ferment, dry, and smoke their meats and fish. Traditional homes in Nagaland have external kitchens that serve as smokehouses.

A typical meal consists of rice, meat, a chutney, a couple of stewed or steamed vegetable dishes – flavored with ngari or akhuni. Desserts usually consist of fresh fruits.

Odisha (E)

Fig 1.13: Oriya mutton curry (mansha tarkari).

The cuisine of Odisha relies heavily on local ingredients. Flavours are usually subtle and delicately spiced, unlike the spicy curries typically associated with Indian cuisine. Fish and other seafood, such as crab and shrimp, are very popular, and chicken and mutton are also consumed. Panch phutana, a mix of cumin, mustard, fennel, fenugreek and kalonji (nigella), is widely used for flavouring vegetables and dals, while garam masala and turmeric are commonly used for meat-based curries. Pakhala, a dish made of rice, water, and yogurt, that is fermented overnight, is very popular in summer in rural areas. Oriyas are very fond of sweets, so dessert follows most meals.

Few popular Oriya cuisines, Anna, Kanika, Dalma, Khata (Tamato & Oou), Dali (Different types of lentils, i.e. Harada (Red Gram), known as Arhar in Hindi), Muga (Moong), Kolatha (Horsegram), etc. And many more varieties both in Veg. (Niramisha) & Non-Veg. (Aamisha). Saga (spinach and other green leaves) and Alu-bharta(mashed potato) along with Pakhala are popular dishes(lunch) in rural Odisha.

Odisha is well known for its milk based sweets. Among the many Rasagula which originated in Odisha, Chhena poda, Chhena gaja, Chhena jhili, and Rasabali are very famous.

Tripura (E)

The Tripuri people are the original inhabitants of the state of Tripura in northeast India. Today, they comprise the communities of Tipra, Reang, Jamatia, Noatia, and Uchoi, among others. The Tripuri are non-vegetarian, although they have a minority of Vaishnavite vegetarians. The major ingredients of Tripuri cuisine include vegetables, herbs, pork, chicken, mutton, fishes, turtle, shrimps, crabs,

freshwater mussels, periwinkles, edible freshwater snails and frogs.

Fig 1.14: A bowl of thukpa

West Bengal (E)

Fig 1.15: Bengali authentic full meal

During the 19th century, many Odia-speaking cooks were employed in Bengal, which led to the transfer of several food items between the two regions. Bengali cuisine is the only traditionally developed multi-course tradition from the Indian subcontinent that is analogous in structure to the modern service à la russe style of French cuisine, with food served course-wise rather than all at once. Bengali cuisine differs according to regional tastes, such as the emphasis on the use of chilli pepper in the Chittagong district of Bangladesh However, across all its varieties, there is predominant use of mustard oil along with large amounts of spices. The cuisine is known for subtle flavours with an emphasis on fish, meat, vegetables, lentils, and rice. Bread is not a common dish in Bengali cuisine, but a deep fried version called luchi is popular. Fresh sweetwater fish is one of its most distinctive features; Bengalis prepare fish in many ways, such as steaming, braising, or stewing in vegetables and sauces based on coconut milk or mustard. East Bengali food, which has a high presence in West Bengal and Bangladesh, is much spicier than the West Bengali cuisine, and tends to use high amounts of chilli, and is one of the spiciest cuisines in India and the World. Shondesh and Rasgulla are popular sweet dishes made of sweetened, finely ground fresh cheese. The rasgulla originated in Odisha. and later became popular in erstwhile West Bengal. The government of west Bengal has recently acquired the GI status of rasgulla after citing proof in court.

The cuisine is also found in the state of Tripura and the Barak Valley of Assam.

CHECK YOUR PROGRESS

Describe the important delicacies of Arunachal Pradesh.
Explain the various dishes of Assam.
Discuss the cuisine of Bihar.
Elaborate on the culinary traditions of Manipur.
Elaborate on the culinary traditions of Meghalaya.
Explain the variety of delicacies of Mizoram.
Discuss the traditional foods of Nagaland.
Elaborate on the culinary practices of Odisha.
Describe the variety of delicacies of Tripura.
Elaborate on the culinary traditions of West Bengal.

1.07 POPULAR FOODS OF SOUTH INDIA

Andaman and Nicobar Islands

Seafood plays a major role in the cuisine of the Andaman and Nicobar Islands. Staples of the diet of the Indigenous Andamanese traditionally included roots, honey, fruits, meat, and fish, which were obtained by hunting and gathering. Some insects were also eaten as delicacies. Immigration from mainland of India, however, has resulted in variations in the cuisine.

Andhra Pradesh

The cuisine of Andhra Pradesh belongs to the two Telugu-speaking regions of Rayalaseema and Coastal Andhra and is part of Telugu cuisine. The food of Andhra Pradesh is known for its heavy use of spices, and similar to South Indian cuisine, the use of tamarind. Seafood is common in the coastal region of the state. Rice is the staple food (as is with all South Indian states) eaten with lentil preparations such as pappu (lentils) and pulusu (stew) and spicy vegetables or curries. In Andhra, leafy greens or vegetables such as bottle-gourd and eggplant are usually added to dal. Pickles are an essential part of the local cuisine; popular among those are mango-based pickles such as avakaya and maagaya, gongura (a pickle made from red sorrel leaves)., usirikaya (gooseberry or amla), nimmakaya (lime), and tomato pickle. Yogurt is a common addition to meals, as a way of tempering spiciness.

Breakfast items include dosa, pesarattu (mung bean dosa), vada, and idli.

Fig 1.16: A vegetarian Andhra meal served on important occasions

Dadra and Nagar Haveli (S)

The local cuisine resembles the cuisine of Gujarat. Ubadiyu is a local delicacy made of vegetables and beans with herbs. The common foods include rice, roti, vegetables, river fish, and crab. People also enjoy buttermilk and chutney made of different fruits and herbs.

Karnataka (S)

A number of dishes, such as idly, rava idly, Mysore masala dosa, etc. were invented here and have become popular beyond the state of Karnataka. Equally, varieties in the cuisine of Karnataka have similarities with its three neighbouring South Indian states, as well as the states of Maharashtra and Goa to its north. It is very common for the food to be served on a banana leaf, especially during festivals and functions.

Karnataka cuisine can be very broadly divided into: 1) Mysore/Bangalore cuisine, 2) North Karnataka cuisine, 3) Udupi cuisine, 4) Kodagu/Coorg cuisine, and 5) Karavali/coastal cuisine. The cuisine covers a wide spectrum of food from pure vegetarian and vegan to meats like pork, and from savouries to sweets. Typical dishes include bisi bele bath, jolada rotti, badanekai yennegai, Holige, Kadubu, chapati, idli vada, ragi rotti, akki rotti, saaru, huli, kootu, vangibath, khara bath, kesari bhath,

sajjige, neer dosa, mysoore pak, haal bai, chiroti, benne dose, ragi mudde, and uppittu.

Fig 1.17: Staple vegetarian meal of Karnataka jolada rotti, palya, and anna-saaru

The Kodagu district is known for spicy pork curries, while coastal Karnataka specialises in seafood. Although the ingredients differ regionally, a typical Kannadiga oota (Kannadiga meal) is served on a banana leaf. The coastal districts of Dakshina Kannada and Udupi have slightly varying cuisines, which make extensive use of coconut in curries and frequently include seafood.

Fig 1.18: Bisi bele bath, a delicacy in Karnataka made of rice, lentils, spices, and vegetables

Kerala (S)

Traditional food of Kerala Hindus is vegetarian, with regional exceptions such as the food of the Malabar area. It includes Kerala sadhya, which is an elaborate banquet prepared for festivals and ceremonies. Contemporary Kerala food also includes nonvegetarian dishes. A full-course sadya, which consists of rice with about 20 different accompaniments and desserts is the ceremonial meal, eaten usually on celebrations such as marriages, Onam, Vishu, etc. and is served on a plantain leaf.

Fig 1.19: A full-course Sadya is the ceremonial meal of Kerala eaten usually on celebrations (like Onam, Vishu, etc.) and is served on a plantain leaf.

Fish and seafood play a major role in Kerala cuisine, as Kerala is a coastal state. An everyday Kerala meal in most households consists of rice with fish curry made of sardines, mackerel, seer fish, king

Fig 1.20: Spicy fish from Kerala

fish, pomfret, prawns, shrimp, sole, anchovy, parrotfish, etc. (mussels, oysters, crabs, squid, scallops etc. are not rare), vegetable curry and stir-fried vegetables with or without coconut traditionally known as thoran or mizhukkupiratti. As Kerala has large inland water bodies, freshwater fish are abundant, and constitute regular meals.

It is common in Kerala to have a breakfast with nonvegetarian dishes, in contrast to other states in India. Chicken/mutton stews, lamb/chicken/beef/pork/egg curry, fish curry with tapioca for breakfast are common. A wide range of breakfast with non-vegetarian is common in Malabar and in Central Kerala.

Fig 1.21: Fish moilee Kerala style (KeralaFish Molly)

Kerala cuisine reflects its rich trading heritage. Over time, various cuisines have blended with indigenous dishes, while foreign ones have been adapted to local tastes. Significant Arab, Syrian, Portuguese, Dutch, Jewish, and Middle Eastern influences exist in this region's cuisine, through ancient trade routes via the Arabian Sea and through Arab traders who settled here, contributed to the evolution of kozhikodan halwa along with other dishes like Thalassery biryani.

Coconuts grow in abundance in Kerala, so grated coconut and coconut milk are commonly used for thickening and flavouring. Kerala's long coastline and numerous rivers have led to a strong fishing industry in the region, making seafood a common part of the meal. Rice is grown in abundance, along with tapioca. It is the main starch ingredient used in Kerala's food.

Having been a major production area of spices for thousands of years, the region makes frequent use of black pepper, cardamom, clove, ginger, and cinnamon. Most of Kerala's Hindus, except its Brahmin community, eat fish, chicken, beef, pork, eggs, and mutton. The Brahmin is famed for its vegan cuisine, especially varieties of sambar and rasam. A thick vegetable stew popular in South and Central India called avial is believed to have originated in southern Kerala. Avial is a widely eaten vegetarian dish in the state and plays a major role in sadya.

In most Kerala households, a typical meal consists of rice, fish, and vegetables. Kerala also has a variety of breakfast dishes like idli, dosa, appam, idiyappam, puttu, and pathiri. The Muslim community of Kerala blend Arabian, North Indian, and indigenous Malabari cuisines, using chicken, eggs, beef, and mutton.Thalassery biryani is the only biryani variant, which is of Kerala origin having originated in Talassery, in Malabar region. The dish is significantly different from other biryani variants.

The Pathanamthitta region is known for raalan and fish curries. Appam along with wine and curries of cured beef and pork are popular among Syrian Christians in Central Kerala.

Popular desserts are payasam and halwa. The Hindu community's payasams, especially those made at temples, like the Ambalappuzha temple, are famous for their rich taste. Halva is one of the most commonly found or easily recognised sweets in bakeries throughout Kerala, and Kozhikode is famous for its unique and exotic haluva, which is popularly known as Kozhikodan haluva. Europeans used to

call the dish "sweetmeat" due to its texture, and a street in Kozhikode where became named Sweet Meat Street during colonial rule. Kozhikodan haluva is mostly made from maida (highly refined wheat), and comes in various flavours, such as banana, ghee or coconut. However, karutha haluva (black haluva) made from rice is also very popular. Many Muslim families in the region are famed for their traditional karutha haluva.

Lakshadweep (S)

The cuisine of Lakshadweep prominently features seafood and coconut. Local food consists of spicy nonvegetarian and vegetarian dishes. The culinary influence of Kerala is quite evident in the cuisines of Lakshadweep, since the island lies in close proximity to Kerala. Coconut and sea fish serve as the foundations of most of the meals. The people of Lakshadweep drink large amounts of coconut water, which is the most abundant aerated drink on the island. Coconut milk is the base for most of the curries. All the sweet or savory dishes have a touch of famous Malabar spices. Local people also prefer to have dosa, idlis, and various rice dishes.

Puducherry (S)

The union territory of Puducherry was a French colony for around 200 years, making French cuisine a strong influence on the area. Tamil cuisine is eaten by the territory's Tamil majority. The influence of the neighbouring areas, such as Andhra Pradesh and Kerala, is also visible on the territory's cuisine. Some favourite dishes include coconut curry, tandoori potato, soya dosa, podanlangkai, curried vegetables, stuffed cabbage, and baked beans.

Tamil Nadu (S)

Tamil Nadu is noted for its deep belief that serving food to others is a service to humanity, as is common in many regions of India. The region has a rich cuisine involving both traditional non-vegetarian and vegetarian dishes. Tamil food is characterised by its use of rice, legumes, and lentils, along with distinct aromas and flavours achieved by the blending of spices such as curry leaves, tamarind, coriander, ginger, garlic, chili pepper, cinnamon, clove, cardamom, cumin, nutmeg, coconut and rose water. The traditional way of eating a meal involves being seated on the floor, having the food served on a plantain leaf, and using the right hand to eat. After the meal the plantain leaf is discarded but becomes food for free-ranging cattle and goats. A meal (called Saapadu) consists of rice with other typical Tamil dishes on a plantain leaf. A typical Tamilian would eat in plantain leaf as it gives different flavour and taste to the food. But it can also be served on a stainless steel tray – plate with a selection of different dishes in small bowls. Tamil food is characterized by tiffins, which is a light food taken for breakfast or dinner, and meals which are usually taken during lunch. The word

Fig 1.22: Vegetarian meals in Tamil Nadu traditionally served on a plantain leaf

Fig 1.23: Dosa served with sambar and chutney

"curry" is derived from the Tamil kari, meaning something similar to "sauce". The southern regions such as Tirunelveli, Madurai, Paramakudi, Karaikudi, and Chettinad are noted for their spicy non-vegetarian dishes. Dosa, idli, pongal and Biryani are some of the popular dishes and are eaten with chutney and sambar. Fish and other seafoods are also very popular, because the state is located on the coast. Chicken and goat meat is the predominantly consumed meats in Tamil Nadu. Many Tamilians are vegetarian, however, and the typical meal is heavily dependent on rice, vegetables and lentil preparations such as rasam and sambar. Tamil food tends to be spicy compared to other parts of India so there is a tradition of finishing the meal with Yogurt is considered a soothing end to the meal.

Telangana (S)

Fig 1.24: Hyderabadi Biryani from the city of Hyderabad

The cuisine of Telangana consists of the Telugu cuisine, of Telangana's Telugu people as well as Hyderabadi cuisine (also known as Nizami cuisine), of Telangana's Hyderabadi Muslim community. Hyderabadi food is based heavily on non-vegetarian ingredients while, Telugu food is a mix of both vegetarian and non-vegetarian ingredients. Telugu food is rich in spices and chillies are abundantly used. The food also generally tends to be more on the tangy side with tamarind and lime juice both used liberally as souring agents. Rice is the staple food of Telugu people. Starch is consumed with a variety of curries and lentil soups or broths. Vegetarian and non-vegetarian foods are both popular. Hyderabadi cuisine includes popular delicacies such as Biryani, Haleem, Baghara baingan and Kheema, while Hyderabadi day to day dishes see some commonalities with Telanganite Telugu food, with its use of tamarind, rice, and lentils, along with meat. Yogurt is a common addition to meals, as a way of tempering spiciness.

CHECK YOUR PROGRESS

Describe the important delicacies of Andhra Pradesh.
Explain the various dishes of Andaman and Nicobar Islands.
Discuss the cuisine of Dadra Nagar Haveli.
Elaborate on the culinary traditions of Karnatak.
Elaborate on the culinary traditions of Keral.
Explain the variety of delicacies of Lakshadweep.
Discuss the traditional foods of Pondicherry.
Elaborate on the culinary practices of Tamil nadu.
Describe the variety of delicacies of Telangana.

1.08 POPULAR FOODS OF WEST INDIA

Daman and Diu (W)

Daman and Diu is a union territory of India which, like Goa, was a former colonial possession of Portugal. Consequently, both native Gujarati food and traditional Portuguese food are common. Being a coastal region, the communities are mainly dependent on seafood. Normally, rotli and tea are taken for breakfast, rotla and saak for lunch, and chokha along with saak and curry are taken for dinner. Some of the dishes prepared on festive occasions include puri, lapsee, potaya, dudh-plag, and dhakanu. While alcohol is prohibited in the neighbouring state of Gujarat, drinking is common in Daman and Diu. Better known as the “pub” of Gujarat. All popular brands of alcohol are readily available.

Goa (W)

Fig 1.25: Pork vindaloo (pictured) is a popular curry dish in Goa and around the world.

The area has a tropical climate, which means the spices and flavours are intense. Use of kokum is a distinct feature of the region's cuisine. Goan cuisine is mostly seafood and meat-based; the staple foods are rice and fish. Kingfish (vison or visvan) is the most common delicacy, and others include pomfret, shark, tuna, and mackerel; these are often served with coconut milk. Shellfish, including crabs, prawns, tiger prawns, lobster, squid, and mussels, are commonly eaten. The cuisine of Goa is influenced by its Hindu origins, 400 years of Portuguese colonialism, and modern techniques. Bread, introduced by the Portuguese, is very popular, and is an important part of goan breakfast. Frequent tourism in the area gives Goan food an international aspect. Vegetarianism is equally popular.

Gujarat (W)

Fig 1.26: Khaman is a popular Gujarati snack.

Fig 1.27: Vegetable Handva is a savory Gujarati dinner dish.

Gujarati cuisine is primarily vegetarian. The typical Gujarati thali consists of roti (rotlii in Gujarati), daal or kadhi, rice, sabzi/shaak, papad and chaas (buttermilk). The sabzi is a dish of different combinations of vegetables and spices which may be stir fried, spicy or sweet. Gujarati cuisine can

vary widely in flavour and heat based on personal and regional tastes. North Gujarat, Kathiawad, Kachchh, and South Gujarat are the four major regions of Gujarati cuisine. Many Gujarati dishes are simultaneously sweet, salty (like vegetable Handvo), and spicy. In mango season, keri no ras (fresh mango pulp) is often an integral part of the meal. Spices also vary seasonally.For example,garam masala is used very less in summer.Few of Gujarati Snacks like Sev Khamani, Khakhra, Dal Vada, Methi na Bhajiya, Khaman, Bhakharwadi etc. Regular fasting, with diets limited to milk, dried fruit, and nuts, is a common practice.

Maharashtra (W)

Fig 1.28: Pav bhaji, a popular fast food originating in Maharashtra

Maharashtrian cuisine is an extensive balance of many different tastes. It includes a range of dishes from mild to very spicy tastes. Bajri, wheat, rice, jowar, vegetables, lentils, and fruit form important components of the Maharashtrian diet. Popular dishes include puran poli, ukdiche modak, batata wada, sabudana khichdi, masala bhat, pav bhaji, and wada pav. Poha or Misal Pav flattened rice is also usually eaten at breakfast. Kanda poha and aloo poha are some of the dishes cooked for breakfast and snacking in evenings. Popular spicy meat dishes include those that originated in the Kolhapur region. These are the Kolhapuri Sukka mutton, pandhra rassa, and tabmda rassa. Shrikhand, a sweet dish made from strained yogurt, is a main dessert of Maharashtrian cuisine. The cuisine of Maharashtra can be divided into two major sections—the coastal and the interior. The Konkan, on the coast of the Arabian Sea, has its own type of cuisine, a homogeneous combination of Malvani, Goud Saraswat Brahmin, and Goan cuisines. In the interior of Maharashtra, the Vidarbha and Marathwada areas have their own distinct cuisines. The cuisine of Vidarbha uses groundnuts, poppy seeds, jaggery, wheat, jowar, and bajra extensively. A typical meal consists of rice, roti, poli, or bhakar, along with

varan and aamtee—lentils and spiced vegetables. Cooking is common with different types of oil. Savji food from Vidarbha is well known all over Maharashtra. Savji dishes are very spicy and oily. Savji mutton curries are very famous.

Fig 1.29: Poha, a popular Maharashtrian breakfast dish

Like other coastal states, an enormous variety of vegetables, fish, and coconuts exists, where they are common ingredients. Peanuts and cashews are often served with vegetables. Grated coconuts are used to flavour many types of dishes, but coconut oil is not widely used; peanut oil is preferred. Kokum, most commonly served chilled, in an appetiser-digestive called sol kadhi, is prevalent. During summer, Maharashtrians consume panha, a drink made from raw mango.

Malwani (W)

Malwani cuisine is a specialty of the tropical area which spans from the shore of Deogad Malwan to the southern Maharashtrian border with Goa. The unique taste and flavor of Malwani cuisine comes from Malwani masala and use of coconut and kokam. The staple foods are rice and fish. Various kinds of red and green fish, prawns, crab, and shellfish curries (also called mashacha sar in the Malwani language) are well known, along with kombadi (chicken) wade and mutton prepared Malwani style. Mohari mutton is also one of the distinct delicacies of Malwani cuisine.

A large variety of fish is available in the region, which include surmai, karali, bangada, bombil(Bombay duck), paplet (pompret), halwa, tarali, suandale, kolambi (prawns), tisari (shell fish), kalwa (stone fish) and kurli (crab).

All these fish are available in dried form, including prawns, which are known as sode. Local curries and chatanis are also prepared with dried fish.

Different types of rice breads and pancakes add to the variety of Malwani cuisine and include tandlachi bhakari, ghawane, amboli, patole, appe, tandalachi and shavai (rice noodles). These rice breads can be eaten specially flavored with coconut milk, fish curries, and chicken or mutton curries.

Sole kadi made from kokam and coconut milk is a signature appetizer drink . For vegetarians, Malwani delicacies include alloochi bhaji, alloochi gathaya, kalaya watanyacha, and sambara(black gram stew).

The sweets and desserts include ukadiche modak, Malawani khaje, khadakahde kundiche ladu, shegdanyache ladu, tandalchi kheer, and tandalachi shavai ani ras (specially flavored with coconut milk).

Rajasthan (W)

Fig 1.30: Rajasthani thali

Fig 1.31: Kadhi, a spicy North Indian dish

Cooking in Rajasthan, an arid region, has been strongly shaped by the availability of ingredients. Because water is at a premium, food is generally cooked in milk or ghee, making it quite rich. Gram flour is a mainstay of Marwari food mainly due to the scarcity of vegetables in the area.

Historically, food that could last for several days and be eaten without heating was preferred. Major dishes of a Rajasthani meal may include daal-baati, tarfini, raabdi, Ghevar, bail-gatte, panchkoota, chaavadi, laapsi, kadhi and boondi. Typical snacks include bikaneri bhujia, mirchi bada, Pyaaj Kachori, and Dal Kachori.

Daal-baati is the most popular dish prepared in the state. It is usually supplemented with choorma, a mixture of finely ground baked rotis, sugar and ghee.

Rajasthan is also influenced by the Rajputs who were predominantly non vegetarians. Their diet consisted of game meat and gave birth to dishes like laal maas, safed maas, khad khargosh and jungli maas.

Sindh (W)

Sindhi cuisine refers to the native cuisine of the Sindhi people from the Sindh region, now in Pakistan. While Sindh is not geographically a part of modern India, its culinary traditions persist, due to the sizeable number of Hindu Sindhis who migrated to India following the independence of Pakistan in 1947, especially in Sindhi enclaves such as Ulhasnagar and Gandhidam. A typical meal in most Sindhi households consists of wheat-based flatbread (phulka) and rice accompanied by two dishes, one with gravy and one dry. Lotus stem (known as kamal kakri) is also used in Sindhi dishes. Cooking vegetables by deep frying is a common practice that is followed. Some common Sindhi dishes are Sindhi Kadhi, Sai Bhaji, Koki and Besan Bhaji. Some common ingredients used are mango powder, tamarind, kokum flowers, and dried pomegranate seeds.

CHECK YOUR PROGRESS

Describe the important delicacies of Daman.
Explain the various dishes of Goa.
Discuss the cuisine of Gujarat.
Elaborate on the culinary traditions of Maharashtra.
Elaborate on the culinary traditions of Rajasthan.
Explain the variety of delicacies of Sindh.

1.09 POPULAR FOODS OF CENTRAL INDIA

Chhattisgarh (C)

Fig 1.32: Roti with Baigan(Brinjal) subji and curd

Chhattisgarh cuisine is unique in nature and not found in the rest of India, although the staple food is rice, like in much of the country. Many Chhattisgarhi people drink liquor brewed from the mahuwa flower palm wine (tadi in rural areas). The tribal people of the Bastar region of Chhattisgarh eat ancestral dishes such as mushrooms, bamboo pickle, bamboo vegetables, etc.

Delhi (C)

Fig 1.33: Rajma-chawal, curried red kidney beans with steamed rice

Delhi was once the capital of the Mughal empire, and it became the birthplace of Mughlai cuisine. Delhi is noted for its street food. The Paranthewali Gali in Chandani Chowk is just one of the culinary landmarks for stuffed flatbread (paranthas). Delhi has people from different parts of India, thus the city has different types of food traditions; its cuisine is influenced by the various cultures. Punjabi cuisine is common, due to the dominance of Punjabi communities. Delhi cuisine is actually an amalgam of different Indian cuisines modified in unique ways. This is apparent in the different types of street food available. Kababs, kachauri, chaat, Indian sweets, Indian ice cream (commonly called kulfi), and even western food items like sandwiches and patties, are prepared in a style unique to Delhi and are quite popular.

Jharkhand (C)

Traditional Jharkhand dishes are not available at restaurants, as they have not been commercialised. Prepared exclusively in tribal regions, this cuisine uses oil and spices infrequently, except for pickle production and special occasions. Baiganee chop, a snack made of brinjal slices or eggplant, is popular in Jharkhand. Thekua is a sweet dish made of sugar, wheat, flour, and chopped coconuts. Hadia, which is made of paddy rice, is a refreshing drink. A wide variety of recipes is prepared with different types of rice in Jharkhand, including dhuska, pittha, and different kinds of rotis prepared with rice.

Madhya Pradesh (C)

Fig 1.34: Daal bafla, a popular dish in Madhya Pradesh, Rajasthan, and Gujarat

The cuisine in Madhya Pradesh varies regionally. Wheat and meat are common in the north and west of the state, while the wetter south and east are dominated by rice and fish. Milk is a common ingredient in Gwalior and Indore. The street food of Indore is renowned, with shops that have been active for generations. Bhopal is known for meat and fish dishes such as rogan josh, korma, qeema, biryani, pilaf, and kebabs. On a street named Chatori Gali in old Bhopal, one can find traditional Muslim nonvegetarian fare such as paya soup, bun kabab, and nalli-nihari as some of the specialties.

Dal bafla is a common meal in the region and can be easily found in Indore and other nearby regions, consisting of a steamed and grilled wheat cake dunked in rich ghee, which is eaten with daal and ladoos. The culinary specialty of the Malwa and Indore regions of central Madhya Pradesh is poha (flattened rice); usually eaten at breakfast with jalebi. Beverages in the region include lassi, beer, rum and sugarcane juice. A local liquor is distilled from the flowers of the mahua tree. Date palm toddy is also popular. In tribal regions, a popular drink is the sap of the sulfi tree, which may be alcoholic if it has fermented.

CHECK YOUR PROGRESS

Describe the important delicacies of Madhya Pradesh.
Explain the various dishes of Chhattisgarh.
Discuss the cuisine of Delhi.
Elaborate on the culinary traditions of Jharkhand.

1.10 SUMMARY

The strongest influence on Indian food is from ayurveda. Here we are not talking about kebabs and biryani, as this food was brought in by Mughal emperors who came into India from Persia and Iran. Ayurveda deals with areas concerning the healthy and long life of human beings. The origins of ayurveda probably date back to 1000 BC.

Ayurveda (/ˌaɪ.ərˈveɪdə/) is a system of medicine with historical roots in the Indian subcontinent. Globalized and modernized practices derived from Ayurveda traditions are a type of complementary or alternative medicine. In countries beyond India, Ayurveda therapies and practices have been integrated in general wellness applications and in some cases in medical use.

The main classical Ayurveda texts begin with accounts of the transmission of medical knowledge from the Gods to sages, and then to human physicians. In Sushruta Samhita (Sushruta's Compendium), Sushruta wrote that Dhanvantari, Hindu god of Ayurveda, incarnated himself as a king of Varanasi and taught medicine to a group of physicians, including Sushruta. Ayurveda therapies have varied and evolved over more than two millennia. Therapies are typically based on complex herbal compounds, minerals and metal substances (perhaps under the influence of early Indian alchemy or rasa shastra). Ancient Ayurveda texts also taught surgical techniques, including rhinoplasty, kidney stone extractions, sutures, and the extraction of foreign objects.

Although laboratory experiments suggest it is possible that some substances used in Ayurveda might be developed into effective treatments, there is no evidence that any are effective as currently practiced. Ayurveda medicine is considered pseudoscientific. Other researchers consider it a protoscience, or trans-science system instead. In a 2008 study, close to 21% of Ayurveda U.S. and Indian-manufactured patent medicines sold through the Internet were found to contain toxic levels of heavy metals, specifically lead, mercury, and arsenic. The public health implications of such metallic contaminants in India are unknown.

Some scholars assert that Ayurveda originated in prehistoric times, and that some of the concepts of Ayurveda have existed from the time of the Indus Valley Civilization or even earlier. Ayurveda developed significantly during the Vedic period and later some of the non-Vedic systems such as Buddhism and Jainism also developed medical concepts and practices that appear in the classical Ayurveda texts. Humoral balance is emphasized, and suppressing natural urges is considered unhealthy and claimed to lead to illness. Ayurveda treatises describe three elemental substances, the humours (Sanskrit doṣas), wind (Sanskrit vāta), bile (pitta) and phlegm (kapha)), and state that equality (Skt. sāmyatva) of the doṣas results in health, while inequality (viṣamatva) results in disease. Ayurveda treatises divide medicine into eight canonical components. Ayurveda practitioners had developed various medicinal preparations and surgical procedures from at least the beginning of the common era about two thousand years back.

Indian cuisine reflects an 8,000-year history of various groups and cultures interacting with the subcontinent, leading to diversity of flavours and regional cuisines found in modern-day India. Later, trade with British and Portuguese influence added to the already diverse Indian cuisine.

Early diet in India mainly consisted of legumes, vegetables, fruits, grains, dairy products, and honey. Staple foods eaten today include a variety of lentils (dal), whole-wheat flour (aṭṭa), rice, and pearl millet (bājra), which has been cultivated in the Indian subcontinent since 6200 BCE. Over time, segments of the population embraced vegetarianism during Śramaṇa movement while an equitable climate permitted a variety of fruits, vegetables, and grains to be grown throughout the year. A food classification system that categorised any item as saatvic, raajsic, or taamsic developed in Yoga

tradition. The Bhagavad Gita proscribes certain dietary practices (chapter 17, verses 8–10). Consumption of beef is taboo, due to cows being considered sacred in Hinduism. Beef is generally not eaten by Hindus in India except for Kerala and the north east.

During the Middle Ages, several Indian dynasties were predominant, including the Gupta dynasty. Travelling to India during this time introduced new cooking methods and products to the region, including tea. India was later invaded by tribes from Central Asian cultures, which led to the emergence of Mughlai cuisine, a mix of Indian and Central Asian cuisine. Hallmarks include seasonings such as saffron.

Traditionally, meals in India were eaten while seated either on the floor or on very low stools or cushions. Food is most often eaten with the right hand rather than cutlery. The left hand is used to serve oneself when the courses are not served by the host. Often roti is used to scoop curry without allowing it to touch the hand. In the wheat-producing north, a piece of roti is gripped with the thumb and middle finger and ripped off while holding the roti down with the index finger. A somewhat different method is used in the south for the dosai, the adai, and the uththappam, where the middle finger is pressed down to hold the crepe down and the forefinger and thumb used to grip and separate a small part. Traditional serving styles vary regionally throughout India.

North Indian cuisine is distinguished by the higher proportion-wise use of dairy products; milk, paneer (cottage cheese), ghee (clarified butter), and yoghurt are all common ingredients, compared to that of southern India, where milk products, though consumed in large quantities, are usually used unaltered. North Indian gravies are typically dairy-based and employ thickening agents such as cashew or poppy seed paste. Milk-based sweets are also very popular fare, being a particular specialty in Bengal and Orissa. Other common ingredients include chillies, saffron, and nuts.

Lunch from Karnataka served on a plantain leaf.South Indian cuisine is distinguished by a greater emphasis on rice as the staple grain, the liberal use of coconut and curry leaves particularly coconut oil, and the ubiquity of sambar and rasam (also called saaru) at meals.

Chicken Tikka MasalaBritain has a particularly strong tradition of Indian cuisine that originates from the British Raj. At this time there were a few Indian restaurants in the richer parts of London that catered to British officers returning from their duties in India.

In the 20th century there was a second phase in the development of Anglo-Indian cuisine, as families from countries such as Bangladesh migrated to London to look for work. Some of the earliest such restaurants were opened in Brick Lane in the East End of London, a place that is still famous for this type of cuisine.

1.11 END QUESTIONS

The following questions should help you prepare for the End Examinations. These questions are for 5 marks each and should take you 11 minutes under examination conditions.

1. Which are the three doshas as per Ayurveda and what are its implications for food preparation?
2. What is the philosophy of Ayurveda for non-vegetarian food?
3. Explain the mindful eating from different cultures.
4. Elaborate the Satvik, Rajas and tamasik properties of food.
5. Elaborate on the historical development of Indian food during antiquity.

6. Discuss the progress made by Indian Food during medieval period.
7. Explain the key elements in Indian foods.
8. Describe the various ingredients used in Indian food.
9. Elaborate on eating habits of Indians.
10. Explain various etiquettes followed by Indians while eating.
11. What are the major dishes in North Indian Cuisine?
12. Describe the key features of South Indian cooking.
13. Explain the various ingredients used in West Indian cooking.
14. Discuss the various specialties for the East Indian cuisine.
15. Describe the important delicacies of Chandigarh.
16. Explain the various dishes of Haryana.
17. Discuss the cuisine of Himachal Pradesh.
18. Elaborate on the culinary traditions of Jammu and Kashmir.
19. Explain the variety of delicacies of Punjab.
20. Discuss the traditional foods of Sikkim.
21. Elaborate on the culinary practices of Uttar Pradesh.
22. Describe the variety of delicacies of Uttarakhand.
23. Describe the important delicacies of Arunachal Pradesh.
24. Explain the various dishes of Assam.
25. Discuss the cuisine of Bihar.
26. Elaborate on the culinary traditions of Manipur.
27. Elaborate on the culinary traditions of Meghalaya.
28. Explain the variety of delicacies of Mizoram.
29. Discuss the traditional foods of Nagaland.
30. Elaborate on the culinary practices of Odisha.
31. Describe the variety of delicacies of Tripura.
32. Elaborate on the culinary traditions of West Bengal.
33. Describe the important delicacies of Andhra Pradesh.
34. Explain the various dishes of Andaman and Nicobar Islands.
35. Discuss the cuisine of Dadra Nagar Haveli.
36. Elaborate on the culinary traditions of Karnatak.
37. Elaborate on the culinary traditions of Keral.
38. Explain the variety of delicacies of Lakshadweep.
39. Discuss the traditional foods of Pondicherry.
40. Elaborate on the culinary practices of Tamil nadu.
41. Describe the variety of delicacies of Telangana.
42. Describe the important delicacies of Daman.
43. Explain the various dishes of Goa.
44. Discuss the cuisine of Gujarat.
45. Elaborate on the culinary traditions of Maharashtra.
46. Elaborate on the culinary traditions of Rajasthan.
47. Explain the variety of delicacies of Sindh.
48. Describe the important delicacies of Madhya Pradesh.
49. Explain the various dishes of Chhattisgarh.
50. Discuss the cuisine of Delhi.
51. Elaborate on the culinary traditions of Jharkhand.

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UNIT 2 CONDIMENTS, HERBS AND SPICES USED IN INDIAN CUISINE

Unit – 2 Condiments, Herbs and Spices Used in India Cuisine: Introduction, Condiments, Herbs and Spices used in Indian Cuisine (Allspice, Ajwain, Aniseed, Asafoetida, Bay leaf, Cardamom, Cinnamon, Cloves, Coriander seeds, Cumin, Chilli, Fenugreek, Mace, Nutmeg, Mustard, Pepper, Poppy Seeds, Saffron, Tamarind, Turmeric, Celery, Curry Leaf, Marjoram, Pomegranate Seeds, Stone Flowers, Basil, Betel Root, Black Salt, Red Chilli, Rock Salt) Various ways of using spices, their storage and usage tips.

2.00 BEFORE WE BEGIN

In this unit we will study various condiments, herbs and spices used in our Indian cuisine. We had studied various ingredients, including herbs and spices, used in a kitchen in our studies of HTS101 course. We will now study the various condiments, herbs and spices used in Indian Cuisine (which may include Allspice, Ajowan, Aniseed, Asafoetida, Bay leaf, Cardamom, Cinnamon, Cloves, Coriander seeds, Cumin, Chilli, Fenugreek, Mace, Nutmeg, Mustard, Pepper, Poppy Seeds, Saffron, Tamarind, Turmeric, Celery, Curry Leaf, Marjoram, Pomegranate Seeds, Stone Flowers, Basil, Betel Root, Black Salt, Red Chilli, Rock Salt). Various ways of using spices, their storage and usage tips will also be studied by us in this unit.

As you are going to be a professional in hospitality studies, use of such condiments, herbs and spices is one of the fundamental parts of your study. Such studies may also be useful in your future course under the hospitality program which you have undertaken.

2.01 UNIT OBJECTIVES

After studying this unit you will be able to

- Describe the various condiments used in Indian cuisine
- Explain the culinary uses of various spices like Allspice, Ajowan, Aniseed, Asafoetida, Bay leaf, Cardamom, Cinnamon, Cloves, Coriander seeds, Cumin, Chilli, Fenugreek, Mace, Nutmeg, Mustard, Pepper, Poppy Seeds, Saffron, Tamarind, Turmeric, Celery, Curry Leaf, Marjoram, Pomegranate Seeds, Stone Flowers, Basil, Betel Root, Black Salt, Red Chilli, Rock Salt
- Explain considerations of storage for the various herbs, spices and condiments.

2.02 INTRODUCTION

Condiments

(Source: Wikipedia, "Condiment")

A condiment is a spice, sauce, or preparation that is added to food to impart a particular flavor, to enhance its flavor, or in some cultures, to complement the dish. The term originally described pickled or preserved foods, but has shifted meaning over time.

Many condiments are available packaged in single-serving packets, like mustard or ketchup, particularly when supplied with take-out or fast-food meals. They are usually applied by the diner, but

are sometimes added prior to serving; for example, in a sandwich made with ketchup, mustard or mayonnaise. Some condiments are used during cooking to add flavor or texture to the food; barbecue sauce, compound butter, teriyaki sauce, soy sauce, and marmite are examples.

The term condiment comes from the Latin condimentum, meaning "spice, seasoning, sauce" and from the Latin condere, meaning "preserve, pickle, season".

Condiments in Indian Cuisine

Let us see some of the condiments used in Indian cuisine.

Dried powders

- Ajwain
- Asafetida
- Black salt
- Cardamom powder
- Red chili powder
- Coriander powder
- Curry leaves
- Garam masala
- Ginger, ginger powder
- Himalayan salt
- Jira (Indian cumin seeds)
- Raai
- Turmeric

Fig 2.01: Garam Masala

Chutneys

- Chammanthi podi
- Coriander chutney
- Coconut chutney
- Garlic chutney (made from fresh garlic, coconut and groundnut)
- Hang curd hari mirch pudina chutney (typical north Indian)
- Lime chutney (made from whole, unripe limes)

- Mango chutney (keri) chutney (made from unripe, green mangoes)
- Mint chutney
- Onion chutney
- Saunth chutney (made from dried ginger and tamarind paste)
- Tamarind chutney (Imli chutney)
- Tomato chutney

Fig 2.02: Three Indian chutney

Fig 2.03: A garlic chutney in South India prepared using red chili pepper

Sauces

- Raita

CHECK YOUR PROGRESS

Describe the concept of condiments.
List at least 10 condiments used in Indian cuisine.
List at least 10 dried powders used in Indian cuisine.

2.03 VARIOUS SPICES, HERBS AND CONDIMENTS

2.03.01 Allspice

Fig 2.04: Blooming twig, flower & fruit detail of Pimenta dioica, a midcanopy tree

(Source: Wikipedia)

Allspice, also called pimenta,[a] Jamaica pimenta, myrtle pepper is the dried unripe fruit (berries, used as a spice) of Pimenta dioica, a midcanopy tree native to the Greater Antilles, southern Mexico, and Central America, now cultivated in many warm parts of the world. The name "allspice" was coined as early as 1621 by the English, who thought it combined the flavour of cinnamon, nutmeg, and cloves.

Several unrelated fragrant shrubs are called "Carolina allspice" (Calycanthus floridus), "Japanese allspice" (Chimonanthus praecox), or "wild allspice" (Lindera benzoin). "Allspice" is also sometimes used to refer to the herb costmary (Tanacetum balsamita).

(Adopted from: Thungam Philip,E. Modern Cookery, Vol I, 6th Edition, 2010, Orient Blackswan, New Delhi)

The berries are picked when green and unripe and dried in the sun. Then they turn black. These are used for manufacture of sauces and pickles sold commercially. The berries have the flavor of cloves, cinnamon and nutmeg.

2.03.02 Ajwain

Fig 2.05: *Ajwain Fruits (Commonly mistaken as seeds)*

(Source: Wikipedia)

The small fruits are pale brown schizocarps and have an oval shape, resembling caraway and cumin. It has a bitter and pungent taste, with a flavor similar to anise and oregano. They smell almost exactly like thyme because it also contains thymol, but is more aromatic and less subtle in taste, as well as slightly bitter and pungent. Even a small number of fruits tends to dominate the flavor of a dish.

Culinary uses

The fruits are rarely eaten raw; they are commonly dry-roasted or fried in ghee (clarified butter). This allows the spice to develop a more subtle and complex aroma. In Indian cuisine, it is often part of a vaghaar (Gujarati: વઘાર), a mixture of spices fried in oil or butter, which is used to flavor lentil dishes. In Afghanistan, the fruits are sprinkled over bread and biscuits.

2.03.03 Aniseed (Marathi: बडीशेप)

(Adopted from: Thungam Philip,E. Modern Cookery, Vol I, 6th Edition, 2010, Orient Blackswan, New Delhi)

The aniseed is grown in India, Pakistan, China, Mexico, Peru, Argentina, Spain, Syria, Lebanon, Hong Kong and Egypt. It is small and oval in shape with greenish brown color. It is used both in Indian and western cooking. It has a licorice flavor. It is used for making licorice confections, in baking, in cordial anisette and other similar liquors. Due to its well known digestive properties it is used after meal.

(Source: Wikipedia)

Fig 2.06: Anise plant (After Koehler's Medicinal-Plants *1887)*

(Source: Wikipedia)

Anise (/ˈænɪs/; Pimpinella anisum), also called aniseed, is a flowering plant in the family Apiaceae native to the eastern Mediterranean region and Southwest Asia. Its flavor has similarities with some other spices, such as star anise, fennel, and liquorice.

Culinary Uses

Anise is sweet and very aromatic, distinguished by its characteristic flavor. The seeds, whole or ground, are used for preparation of teas and tisanes (alone or in combination with other aromatic herbs), as well as in a wide variety of regional and ethnic confectioneries, including black jelly beans, British aniseed balls, Australian humbugs, New Zealand aniseed wheels, Italian pizzelle, German Pfeffernüsse and Springerle, Austrian Anisbögen, Dutch muisjes, New Mexican bizcochitos, and Peruvian picarones. It is a key ingredient in Mexican atole de anís and champurrado, which is similar to hot chocolate, and it is taken as a digestive after meals in India.

The Ancient Romans often served spiced cakes with aniseed called mustaceoe at the end of feasts as a digestive. This tradition of serving cake at the end of festivities is the basis for the tradition of serving cake at weddings.

Liquor

Anise alcohols of the Mediterranean region

Anise is used to flavor Colombian aguardiente; French absinthe, anisette, and pastis; Greek ouzo; Bulgarian mastika; German Jägermeister; Italian sambuca; Spanish anísado and Herbs de Majorca; Mexican Xtabentún; Turkish and Armenian rakı; and Lebanese, Libyan, Syrian, Jordanian, Israeli and Palestinian arak. These liquors are clear, but on addition of water become cloudy, a phenomenon

known as the ouzo effect. It is believed to be one of the secret ingredients in the French liqueur Chartreuse. It is also used in some root beers, such as Virgil's in the United States.

Herbal medicine

The main use of anise in traditional European herbal medicine was for its carminative effect (reducing flatulence), as noted by John Gerard in his Great Herball, an early encyclopedia of herbal medicine.

Anise has also been thought a treatment for menstrual cramps and colic.

In the 1860s, American Civil War nurse Maureen Hellstrom used anise seeds as an early form of antiseptic. This method was later found to have caused high levels of toxicity in the blood and was discontinued shortly thereafter.

According to Pliny the Elder, anise was used as a cure for sleeplessness, chewed with alexanders and a little honey in the morning to freshen the breath, and, when mixed with wine, as a remedy for asp bites (N.H. 20.72).

In 19th-century medicine, anise was prepared as aqua anisi ("Water of Anise") in doses of an ounce or more and as spiritus anisi ("Spirit of Anise") in doses of 5–20 minims.

Other uses

Builders of steam locomotives in Britain incorporated capsules of aniseed oil into white metal plain bearings, so the distinctive smell would give warning in case of overheating.

Anise can be made into a liquid scent and is used for both drag hunting and fishing. It is put on fishing lures to attract fish.

2.03.04 Asafoetida (Marathi: हिंग)

(Source: Wikipedia)

Asafoetida /æsəˈfɛtɪdə/ is the dried latex (gum oleoresin) exuded from the rhizome or tap root of several species of Ferula, a perennial herb that grows 1 to 1.5 m (3.3 to 4.9 ft) tall. The species is native to the deserts of Iran and mountains of Afghanistan and is mainly cultivated in nearby India. As its name suggests, asafoetida has a fetid smell, but in cooked dishes, it delivers a smooth flavour reminiscent of leeks.

It is also known as devil's dung, asant, food of the gods, jowani badian, stinking gum, hing, hengu, ingu, kayam, and ting. The plant is thought to be in the same genus as the now extinct silphium.

Uses in Cooking

This spice is used as a digestive aid, in food as a condiment, and in pickling. It plays a critical flavoring role in Indian vegetarian cuisine by acting as an umami enhancer. Used along with turmeric, it is a standard component of lentil curries such as dal, sambar as well as in numerous vegetable dishes, especially those based on potato and cauliflower. Kashmiri cuisine also uses it in lamb/mutton dishes such as Rogan Josh It is sometimes used to harmonize sweet, sour, salty, and spicy components in food. The spice is added to the food at the time of tempering. Sometimes dried and ground asafoetida (in very small quantities) can be mixed with salt and eaten with raw salad.

In its pure form, it is sold in the form of chunks of resin, small quantities of which are scraped off for use. The odor of the pure resin is so strong that the pungent smell will contaminate other spices stored nearby if it is not stored in an airtight container. Many commercial preparations of asafoetida use the resin ground up and mixed with a larger volume of other neutral ingredients, such as gum arabic, wheat flour, rice flour and turmeric. The mixture is sold in sealed plastic containers with a hole that allows direct dusting of the powder. Asafetida odour and flavour become much milder and much less pungent upon heating in oil or ghee. Sometimes, it is fried along with sautéed onion and garlic.

Asafoetida is considered a digestive in that it reduces flatulence. It is, however, one of the five pungent spices generally avoided by Buddhist vegetarians.

2.03.05 Bay leaf

(Source: Wikipedia)

Bay leaf (plural bay leaves) refers to the aromatic leaves of several plants used in cooking. These include:

- Bay laurel (Laurus nobilis, Lauraceae). Fresh or dried bay leaves are used in cooking for their distinctive flavor and fragrance. The leaves should be removed from the cooked food before eating (see Safety section below). The leaves are often used to flavor soups, stews, braises and pâtés in Mediterranean cuisine and beans in Brazilian cuisine. The fresh leaves are very mild and do not develop their full flavor until several weeks after picking and drying.
- California bay leaf – the leaf of the California bay tree (Umbellularia californica, Lauraceae), also known as California laurel, Oregon myrtle, and pepperwood, is similar to the Mediterranean bay laurel, but has a stronger flavor.
- Indian bay leaf or malabathrum (Cinnamomum tamala, Lauraceae) is somewhat similar in appearance to the leaves of bay laurel, but is culinarily quite different, having a fragrance and taste similar to cinnamon (cassia) bark, but milder.
- Indonesian bay leaf or Indonesian laurel (salam leaf, Syzygium polyanthum, Myrtaceae) is not commonly found outside Indonesia; this herb is applied to meat and, less often vegetables.
- West Indian bay leaf, the leaf of the West Indian bay tree (Pimenta racemosa, Myrtaceae), used culinarily and to produce the cologne called bay rum.
- Mexican bay leaf (Litsea glaucescens, Lauraceae).

CHECK YOUR PROGRESS

Describe the nature of Allspice including its native habitat, uses in cooking.
Discuss the culinary uses of ajwain.
Explain the various uses of anise seeds in cooking, liquor and herbal medicine.
Elaborate the versatility of asafetida in Indian and western cuisine.
Describe various types of bay leaf.

2.03.06 Cardamom

Fig. 3.03: *Green Cardamom*

(Adopted from: Thungam Philip,E. Modern Cookery, Vol I, 6th Edition, 2010, Orient Blackswan, New Delhi)

Fruit of reed-like plant, native of Malabar Coast, cultivated in Jamaica also is known as cardamom. The fruit is a small pod and the seeds in it have strong sweet flavor. Pods have size about half cm to two cm in length. The best cardamoms are the small sized ones. Rich curries like khorma are prepared with cardamom. The powder cardamom finds uses in pudding, cake, halwas, etc. The cardamom is also used in biryani, pulav for popular flavors. The tincture of cardamom is used in stomach medicine.

(Source: Wikipedia)

Black cardamom, also known as hill cardamom, Bengal cardamom, greater cardamom, Indian cardamom, Nepal cardamom, winged cardamom, or brown cardamom, comes from either of two species in the family Zingiberaceae. Its seed pods have a strong camphor-like flavor, with a smoky character derived from the method of drying.

The pods are used as a spice, in a similar manner to the green Indian cardamom pods, but with a different flavor. Unlike green cardamom, this spice is rarely used in sweet dishes. Its smoky flavor and aroma derive from traditional methods of drying over open flames.

Culinary uses

Black cardamom is often erroneously described as an inferior substitute for green cardamom by those unfamiliar with the spice; actually, it is just not as well suited for the sweet/hot dishes which typically include cardamom, and that are more commonly prepared outside the plant's native range. Black cardamom, by contrast, is better for hearty meat stews and similar dishes. Although the flavor differs from the smaller green cardamom, black cardamom is sometimes used by large-scale commercial bakers because of its low cost.

In China, the pods are used for jin-jin braised meat dishes, particularly in the cuisine of the central-western province of Sichuan. The pods are also often used in Vietnam, where they are called thảo quả and used as an ingredient in the broth for the noodle soup called phở.

The largest producer of the black cardamom is Nepal, followed by India and Bhutan. In traditional Chinese medicine, black cardamom is used for stomach disorders and malaria.

2.03.07 Cinnamon

(Adopted from: Thungam Philip,E. Modern Cookery, Vol I, 6th Edition, 2010, Orient Blackswan, New Delhi)

Cinnamon is taken from the bark of an evergreen tree which belongs to the Laurel family. It is mainly cultivated in Srilanka and East Indies. The outer bark is stripped of the three-year old branches and then the inner bark is loosened and dried. The best cinnamon is the one which is not too dark in color and is paper-thin. It has a fragrant and its taste is pleasant and

aromatic. Used in both Indian and western cooking in cakes, buns, ketchups, pickles, pulavs along with cardamom, etc. It is used in garam masalas for curries.

(Source: Wikipedia)

Cinnamomum tamala, Indian bay leaf, also known as tejpat, tejapatta, Malabar leaf, Indian bark, Indian cassia, or malabathrum, is a tree within the Lauraceae family which is native to India, Bangladesh, Nepal, Bhutan, and China. It can grow up to 20 m (66 ft) tall. It has aromatic leaves which are used for culinary and medicinal purposes. It is thought to have been one of the major sources of the medicinal plant leaves known in classic and medieval times as malabathrum (or malobathrum).

Culinary Uses

Fig 2.07: *Young leaves*

The bark is also sometimes used for cooking, although it is regarded as inferior to true cinnamon or cassia. Methanolic extract of C. tamala leaves fed at 10 mg/kg to alloxan-induced diabetic rats for 15 days resulted in significant reduction in blood glucose level, blood glycosylated haemoglobin, LPO, serum AST, and ALT, and significant increase in the antioxidant enzymes such as CAT, GSH, and SOD. C. tamala could be used as an adjunct therapy in diabetes.

Fig 2.08: *Dried Indian bay leaves*

2.03.08 Cloves

(Adopted from: Thungam Philip,E. Modern Cookery, Vol I, 6th Edition, 2010, Orient Blackswan, New Delhi)

A very old and important spice, it was known around the time of early Egyptians. The word clove comes from Latin "clavus" or French "clou", which mean *nail*. (The cloves are in the shape of nails.) The clove trees of the order myrtle gow to hight of nine meters. The unopened flower buds are carefully harvested. Upon browning they tend to lose weight to around half.

Cloves are used in western and Indian cuisines, including savory and sweet, like, pulavs, cooked ham, sauces like béchamel sauce, bread sauce, meat dishes, fruit salad, baked apples. The clove oil is used by dentists to soothe tooth aces and as antiseptic. It is grown in island of Zanzibar, Pemba and east indies and west India and other tropical regions.

(Source: Wikipedia)

Cloves are the aromatic flower buds of a tree in the family Myrtaceae, Syzygium aromaticum. They are native to the Maluku Islands in Indonesia, and are commonly used as a spice. Cloves are commercially harvested primarily in Bangladesh, Indonesia, India, Madagascar, Zanzibar, Pakistan, Sri Lanka, and Tanzania. Cloves are available throughout the year.

Fig 2.09*: Dried cloves*

Uses

Cloves are used in the cuisine of Asian, African, and the Near and Middle East countries, lending flavor to meats, curries, and marinades, as well as fruit such as apples, pears or rhubarb. Cloves may be used to give aromatic and flavor qualities to hot beverages, often combined with other ingredients such as lemon and sugar. They are a common element in spice blends such as pumpkin pie spice and speculoos spices.

In Mexican cuisine, cloves are best known as clavos de olor, and often accompany cumin and cinnamon.

A major component of clove taste is imparted by the chemical eugenol, and the quantity of the spice required is typically small. It pairs well with cinnamon, allspice, vanilla, red wine and basil, as well as onion, citrus peel, star anise, or peppercorns.

2.03.09 Coriander seeds

(Adopted from: Thungam Philip,E. Modern Cookery, Vol I, 6th Edition, 2010, Orient Blackswan, New Delhi)

The fruit of plant corrianderum sativum of the parsley family, they are used extensively in Indian savory dishes. They also form important ingredient of curry powder. Also used in preparation of frankfurters (sauceges) and in confectioning and distilleries. The leaves are used for flavoring curries, salads, chutneys and also used as garnish.

Fig 2.10: Coriander seeds are actually fruits of coriander plant

It is commonly found both as whole dried seeds and in ground form. Roasting or heating the seeds in a dry pan heightens the flavour, aroma, and pungency. Ground coriander seed loses flavour quickly in storage and is best ground fresh. Coriander seed is a spice in garam masala and Indian curries which often employ the ground fruits in generous amounts together with cumin, acting as a thickener in a mixture called dhana jeera.

(Source: Wikipedia)

Roasted coriander seeds, called dhana dal, are eaten as a snack. They are the main ingredient of the two south Indian dishes: sambhar and rasam.

Outside of Asia, coriander seed is used widely in the process for pickling vegetables. In Germany and South Africa (see boerewors), the seeds are used while making sausages. In Russia and Central Europe, coriander seed is an occasional ingredient in rye bread (e.g. Borodinsky bread), as an alternative to caraway.

The Zuni people of North America have adapted it into their cuisine, mixing the powdered seeds ground with chile and using it as a condiment with meat, and eating leaves as a salad.

Coriander seeds are used in brewing certain styles of beer, particularly some Belgian wheat beers. The coriander seeds are used with orange peel to add a citrus character.

2.03.10 Cumin

Fig 2.11: *cumin seeds*

(Source: Wikipedia)

Uses

Cumin seed is used as a spice for its distinctive flavour and aroma. It is globally popular and an essential flavouring in many cuisines, particularly South Asian (where it is called jeera, Northern African, and Latin American cuisines. Cumin can be found in some cheeses, such as Leyden cheese, and in some traditional breads from France. It is commonly used in traditional Brazilian cuisine. Cumin can be an ingredient in chili powder (often Tex-Mex or Mexican-style), and is found in achiote blends, adobos, sofrito, garam masala, curry powder, and bahaarat. In Myanmar, cumin is used as a spice. In South Asian cooking, it is often combined with coriander seeds in a powdered mixture called dhana jeera.

Cumin can be used ground or as whole seeds. It helps to add an earthy and warming feeling to food, making it a staple in certain stews and soups, as well as spiced gravies such as chili. It is also used as an ingredient in some pickles and pastries.

CHECK YOUR PROGRESS

Describe the nature of cardamom including its native habitat, uses in cooking.
Discuss the culinary uses of cinnamon.
Explain the various uses of clove in cooking, liquor and herbal medicine.
Elaborate the versatility of coriander seed in Indian and western cuisine.
Describe the uses of cumin in cooking.

2.03.11 Chilli

(Source: Wikipedia)

The chili pepper (also chile pepper or chilli pepper, from Nahuatl chīlli is the fruit of plants from the genus Capsicum. In Australia, Britain, India, Ireland, New Zealand, Pakistan, South Africa and in other Asian countries, it is usually known simply as chilli.

Fig 2.12: *Madame_Jeanette_and_other_chillie*

The substances that give chili peppers their intensity when ingested or applied topically are capsaicin and several related chemicals, collectively called capsaicinoids.

Worldwide, some 3.8 million hectares (about 9.4 million acres) of land produce 33 million tons of chili peppers (2010 data). India is the world's biggest producer, consumer and exporter of chili peppers. Guntur in the South Indian state of Andhra Pradesh produces 30% of all the chilies produced in India. Andhra Pradesh as a whole contributes 75% of India's chili exports.

Culinary uses

Fig 2.13: *Green Chilies*

- Thai curry pastes contain large amounts of chilies
- Chili pepper pods, which are berries, are used fresh or dried. Chilies are dried to preserve them for long periods of time, which may also be done by pickling.
- Dried chilies are often ground into powders, although many Mexican dishes including variations on chiles rellenos use the entire chili. Dried whole chilies may be reconstituted before grinding to a paste. The chipotle is the smoked, dried, ripe jalapeño.
- Many fresh chilies such as poblano have a tough outer skin that does not break down on cooking. Chilies are sometimes used whole or in large slices, by roasting, or other means of

blistering or charring the skin, so as not to entirely cook the flesh beneath. When cooled, the skins will usually slip off easily.

- The leaves of every species of Capsicum are edible. Though almost all other Solanaceous crops have toxins in their leaves, chili peppers do not. The leaves, which are mildly bitter and nowhere near as hot as the fruit, are cooked as greens in Filipino cuisine, where they are called dahon ng sili (literally "chili leaves"). They are used in the chicken soup tinola. In Korean cuisine, the leaves may be used in kimchi. In Japanese cuisine, the leaves are cooked as greens, and also cooked in tsukudani style for preservation.
- Chili is by far the most important fruit in Bhutan. Local markets are never without chilies in different colors and sizes, in fresh and dried form. Bhutanese call this crop ema (in Dzongkha) or solo (in Sharchop). Chili is a staple fruit in Bhutan; the ema datsi recipe is entirely made of chili mixed with local cheese. Chili is also an important ingredient in almost all curries and food recipes in the country.
- In India, most households always keep a stack of fresh hot green chilies at hand, and use them to flavor most curries and dry dishes. It is typically lightly fried with oil in the initial stages of preparation of the dish. Some states in India, such as Rajasthan, make entire dishes only by using spices and chilies.
- Chilies are present in many cuisines. Some notable dishes other than the ones mentioned elsewhere in this article include:
- Curry dishes usually contain fresh or dried chillies.
- Fresh or dried chilies are often used to make hot sauce, a liquid condiment—usually bottled when commercially available—that adds spice to other dishes. Hot sauces are found in many cuisines including harissa from North Africa, chili oil from China (known as rāyu in Japan), and sriracha from Thailand.

2.03.12 Fenugreek

(Adopted from: Thungam Philip,E. Modern Cookery, Vol I, 6th Edition, 2010, Orient Blackswan, New Delhi)

These are the dried, ripe fruits of a plant which is grown in India and many European countries. Its tender stalks and fresh leaves are used as vegetables. They have stimulating effects on digestive system and hence used as medicine to cattle and horses. The seeds of fenugreek are used in making curry powder and fried whole for seasoning pickles and vegetables. You may grind fenugreek with water to get a slimy paste which you can use to give smoothness to a batter.

Fig 2.14: Fenugreek leaves

2.03.13 Mace

Mace comes from the fruit of nutmeg.

***Fig 2.15**: Mace (red) within nutmeg fruit*

(Source: Wikipedia)

Nutmeg and mace have similar sensory qualities, with nutmeg having a slightly sweeter and mace a more delicate flavour. Mace is often preferred in light dishes for the bright orange, saffron-like hue it imparts. Nutmeg is used for flavouring many dishes, usually in ground or grated form, and is best grated fresh in a nutmeg grater.

In Indian cuisine, nutmeg is used in many sweet, as well as savoury, dishes (predominantly in Mughlai cuisine). In Kerala Malabar region, it is considered medicinal and the flesh made into juice, pickles and chutney, while the grated nutmeg is used in meat preparations and also sparingly added to desserts for the flavour. It is also added in small quantities as a medicine for infants. It may also be used in small quantities in garam masala. Ground nutmeg is also smoked in India.

In traditional European cuisine, nutmeg and mace are used especially in potato dishes and in processed meat products; they are also used in soups, sauces, and baked goods. It is also commonly used in rice pudding. In Dutch cuisine, nutmeg is added to vegetables such as Brussels sprouts, cauliflower, and string beans. Nutmeg is a traditional ingredient in mulled cider, mulled wine, and eggnog. In Scotland, mace and nutmeg are usually both ingredients in haggis.

In Italian cuisine, nutmeg is almost uniquely used as part of the stuffing for many regional meat-filled dumplings like tortellini, as well as for the traditional meatloaf.

Japanese varieties of curry powder include nutmeg as an ingredient.

In the US, nutmeg is known as the main pumpkin pie spice and often shows up in simple recipes for other winter squashes such as baked acorn squash.

2.03.14 Nutmeg

(Adopted from: Thungam Philip,E. Modern Cookery, Vol I, 6th Edition, 2010, Orient Blackswan, New Delhi)

Nutmeg and mace are the only known examples of two spices from same fruit. Nutmeg is grown in British West Indies at Grenada and in Dutch west indies. The tree starts bearing fruits in at age of 8 years and keeps on yielding fruits for fifty years or more. In the wild state the tree may grow upto 70 feet (22 m). Nutmeg fruit looks like apricot in size and shape. The

'nutmeg' is a seed and is protected by a thin shell. The shell has a coating of orangy flesh. When the coating is dried into mace. The aroma of mace and nutmeg is similar. However their culinary uses are different. Nutmeg is used in Indian and western dishes in sweet meat, pudding, flavoring eggs and some curries. Mace is used for flavoring sauces, stock and sweet dishes like halwas, betel nut mixtures. Nutmeg is used grated fine, while mace is crushed coarsely. When purchasing nutmeg we should choose those which are round compact and of oily appearance and are heavy for their size.

Fig 2.16: Nutmeg seeds showing "veins"

2.03.15 Mustard

(Adopted from: Thungam Philip,E. Modern Cookery, Vol I, 6th Edition, 2010, Orient Blackswan, New Delhi)

Known since antiquity it is grown in most of the world. Mustard is used both in Indian and in western cuisines. It is used as powder in the west as a table condiment and for flavoring sauces. The pungency is enhanced when mustard is moistened with water (prepared mustard). In Indian cuisine, it is used for temparing dishes and in making pickles. It is used in masalas powder like vindaloo.

(Source: Wikipedia)

Black Mustard

The plant is believed to be native to the southern region of Europe and possibly South Asia where it has been cultivated for thousands of years.

The spice is generally made from ground seeds of the plant, with the seed coats removed. The small (1 mm) seeds are hard and vary in color from dark brown to black. They are flavorful, although they have almost no aroma. The seeds are commonly used in Indian cuisine, for example in curry, where it is known as rai. The seeds are usually thrown into hot oil or ghee, after which they pop, releasing a characteristic nutty flavor. The seeds have a significant amount of fatty oil. This oil is used often as cooking oil in India.

In Ethiopia, where it is cultivated as a vegetable in Gondar, Harar and Shewa, the shoots and leaves are consumed cooked and the seeds used as a spice. Its Amharic name is senafitch.

Ground seeds of the plant mixed with honey are widely used in Eastern Europe as cough suppressant. In Eastern Canada, the use of mouche de moutarde to treat respiratory infections was popular before the advent of modern medicine. It consisted in mixing ground mustard seeds with flour and water, and creating a cataplasm with the paste. This cataplasm was put on the chest or the back and left until the person felt a stinging sensation.

The plant itself can grow from two to eight feet tall, with racemes of small yellow flowers. These flowers are usually up to 1/3" across, with four petals each. The leaves are covered in small hairs; they can wilt on hot days, but recover at night.

Since the 1950s, black mustard has become less popular as compared to India mustard because some cultivars of India mustard have seeds that can be mechanically harvested in a more efficient manner.

Indian Mustard

Brassica juncea, commonly brown mustard, Chinese mustard, Indian mustard, leaf mustard, Oriental mustard and vegetable mustard, is a species of mustard plant. One subvariety is southern giant curled mustard, which resembles a headless cabbage such as kale, but with a distinct horseradish or mustard flavor. It is also known as green mustard cabbage.

Use in Food

Fig 2.17: Fresh mustard greens

The leaves, seeds, and stems of this mustard variety are edible. The plant appears in some form in African, Nepali, Pakistani, Bangladeshi, Italian, Indian, Chinese, Japanese, Korean, and African-American (soul food) cuisines. Cultivars of B. juncea are grown for their greens, and for the production of oilseed. The mustard condiment made from the seeds of the B. juncea is called brown mustard and is considered to be spicier than yellow mustard.

Because it may contain erucic acid, a potential toxin, mustard oil is restricted from import as a vegetable oil into the United States. Essential oil of mustard, however, is accepted as GRAS (Generally Recognized as Safe). But in Russia, this is the main species grown for the production of mustard oil. It is widely used in canning, baking and margarine production in Russia, and the majority of Russian table mustard is also made from B. juncea.

The leaves are used in African cooking, and all plant parts are used in Nepali cuisine, particularly in the mountain regions of Nepal, as well as in the Punjab cuisine of India and Pakistan, where a dish called sarson da saag (mustard greens) is prepared. B. juncea subsp. tatsai, which has a particularly thick stem, is used to make the Nepali pickle called achar, and the Chinese pickle zha cai.

The Gorkhas of Darjeeling, Sikkim and Nepal prepare pork with mustard greens (also called rayo in Nepali). It is usually eaten with relish and steamed rice, but can also be eaten with roti (griddle breads). In Nepal it is also a common practice to cook these greens with meat of all sorts specially goat meat; which is normally prepared in a pressure cooker with minimal use of spices to focus on the flavour of the greens and dry chillies. Brassica juncea (especially the seeds) is more pungent than greens from the closely related Brassica oleracea (kale, broccoli, and collard greens), and is frequently mixed with these milder greens in a dish of "mixed greens".

Chinese and Japanese cuisines also make use of mustard greens. In Japanese cuisine, it is known as takana and often pickled for use as filling in onigiri or as a condiment. Many varieties of B. juncea cultivars are used, including zha cai, mizuna, takana (var. integrifolia), juk gai choy, and xuelihong. Asian mustard greens are most often stir-fried or pickled. A Southeast Asian dish called asam gai choy or kiam chai boey is often made with leftovers from a large meal. It involves stewing mustard greens with tamarind, dried chillies and leftover meat on the bone. Brassica juncea is also known as gai choi, siu gai choi, xaio jie cai, baby mustard, Chinese leaf mustard or mostaza.

CHECK YOUR PROGRESS

Describe the nature of chilli including its native habitat, uses in cooking.
Discuss the culinary uses of fenugreek.
Explain the various uses of mace in cooking.
Elaborate the versatility of mustard in Indian and western cuisine.
Describe the uses of nutmeg in cooking.

2.03.16 Pepper

(Adopted from: Thungam Philip,E. Modern Cookery, Vol I, 6th Edition, 2010, Orient Blackswan, New Delhi)

This is derived from the seeds or berries of the plant called Piper Nigrum. It grows in Malabar and other parts of india. Black pepper is made from dried whole berries. The while

peper is made from same berries from which husk is dried and removed. It is one of most popular of the spices and is used in most of the savory dishes, to improve the flavor and to add to its piquancy (i.e., the spiciness). It is also used as table condiment.
It comes in four types:

Mignonette pepper
(ordinary white peper, coarsely crushed)

Fig 2.18: Roughly cracked black peppercorns, also known as mignonette or poivre mignonette

(Source: Wikipedia)

Long pepper (spice similar to ordinary pepper, but less pungent),

Cayenne
(dried fruit of capsicum plant grown in the Cayenne Island. Red color resembles the red chillies, though it is not as pungent. Used in western cookery where pungency is required, like Devilled prawns.)

Fig 2.19: Six variants of peppercorns (two types of white and two types of black based on region).

(Source: Wikipedia)

In American or British English, a cayenne pepper is a type of chilli pepper, but not all chilli peppers are cayenne peppers. Cayenne powder, however, may be a blend of different types of peppers. In the United States, cayenne powder is distinguished from 'chili powder' as it is

made from peppers only, whereas chili powder is generally a spice mixture. In Indian English 'red chilli powder' is made from pure peppers, and refers to what an American might call cayenne, thus recipes for Indian-style foods for people in the UK and USA, such as British curries, often use cayenne as a substitute, although the name cayenne is virtually unknown in Asia.

Cayenne is a popular spice primarily in North American (for example spicy nachos or deviled ham) and British cuisines (for example devilled eggs, devilled kidneys or sometimes Welsh rarebit). It is employed variously in its fresh form, or dried and powdered. The powder is used in the USA and Britain on seafood (oysters, mussels, clams, crayfish, crab, fish), all types of egg dishes (devilled eggs, omelettes, soufflés), meat (bacon, chicken, lamb, beef, pork, ham, kidneys) and in stews, casseroles, and cheese dishes. It is a key ingredient in a variety of hot sauces, especially cheese, barbecue and shellfish sauces. It is also used in British-style curries, British gravy and is an ingredient in some types of Worcestershire sauce. In the UK and the USA, the word 'devilled' or 'deviled', respectively (i.e. devilled eggs, devilled kidneys, devilled herrings, deviled crab, deviled ham) generally means 'coated with some cayenne powder' (though any hot powder will do, and in antique recipes mustard and black pepper was generally used). It is particularly used in Louisiana-style sauces, which are primarily composed of either cayenne or tabasco peppers, vinegar, and salt. In the USA cayenne pepper is often spread on sandwiches or similar items to add a spicy flavor.
Krona pepper (bright red pepper from Hungarian paprika, much milder than Cayenne peer and makes a palatable seaconing for western savory dishes)

(Source: Wikipedia)

Black Pepper

Black pepper (Piper nigrum) is a flowering vine in the family Piperaceae, cultivated for its fruit, which is usually dried and used as a spice and seasoning. When dried, the fruit is known as a peppercorn. When fresh and fully mature, it is approximately 5 millimetres (0.20 in) in diameter, dark red, and, like all drupes, contains a single seed. Peppercorns, and the ground pepper derived from them, may be described simply as pepper, or more precisely as black pepper (cooked and dried unripe fruit), green pepper (dried unripe fruit) and white pepper (ripe fruit seeds). Black pepper is native to south India and is extensively cultivated there and elsewhere in tropical regions. Currently, Vietnam is the world's largest producer and exporter of pepper, producing 34% of the world's Piper nigrum crop as of 2013.

Dried ground pepper has been used since antiquity for both its flavor and as a traditional medicine. Black pepper is the world's most traded spice. It is one of the most common spices added to cuisines around the world. The spiciness of black pepper is due to the chemical piperine, not to be confused with the capsaicin characteristic of chili peppers. Black pepper is ubiquitous in the modern world as a seasoning and is often paired with salt.

Black pepper is produced from the still-green, unripe drupes of the pepper plant. The drupes are cooked briefly in hot water, both to clean them and to prepare them for drying. The heat ruptures cell walls in the pepper, speeding the work of browning enzymes during drying. The

Fig 2.20: Pepper plant with immature peppercorns

Fig 2.21: Black and White Pepper corns

drupes dry in the sun or by machine for several days, during which the pepper around the seed shrinks and darkens into a thin, wrinkled black layer. Once dry, the spice is called black peppercorn. On some estates, the berries are separated from the stem by hand and then sun-dried without the boiling process.

Once the peppercorns are dried, pepper spirit and oil can be extracted from the berries by crushing them. Pepper spirit is used in many medicinal and beauty products. Pepper oil is also used as an ayurvedic massage oil and in certain beauty and herbal treatments.

2.03.17 Poppy Seeds (खस खस)

(Source: Wikipedia)

Fig 2.22: Bulk poppy seeds, black.

Poppy seed is an oilseed obtained from the poppy (Papaver somniferum). The tiny kidney-shaped seeds have been harvested from dried seed pods by various civilizations for thousands of years. It is still widely used in many countries, especially in Central Europe, where it is legally grown and sold in shops. The seeds are used, whole or ground, as an ingredient in many foods - especially in pastry and bread, and they are pressed to yield poppyseed oil.

Culnary Use

Poppy seeds are used around the world in various cuisines.

In India, Iran and Turkey poppy seeds are known as 'khas-khas' or 'haṣhaṣ' and are considered highly nutritious, mostly added in dough while baking bread, and recommended for pregnant women and new mothers.

European cuisine

The seeds of the opium poppy (Papaver somniferum) are widely consumed in many parts of Central and Eastern Europe. The sugared, milled mature seeds are eaten with pasta, or they are boiled with milk and used as filling or topping on various kinds of sweet pastry. Milling of mature seeds is carried out either industrially or at home, where it is generally done with a manual poppy seed mill.

Poppy seeds are widely used in Austrian, Croatian, Czech, German, Hungarian, Lithuanian, Polish, Romanian, Russian, Slovak, Turkish and Ukrainian cuisines.

The states of former Yugoslavia (notably Macedonia and Serbia, but also Croatia and Bosnia) have a long tradition of preparing poppy seed pastry (strudel, baklava, pajgle) and dishes (pasta with poppy seeds).

Fig 2.23: German Mohnstollen

In Poland, Lithuania and Eastern Slovakia, a traditional dessert is prepared for the Kūčios (Christmas Eve) dinner from poppy seeds. They are ground and mixed with water or milk; round yeast biscuits (kūčiukai in Lithuanian; opekance or bobalky in Slovak) are soaked in the resulting poppy seed 'milk' (poppy milk) and served cold.

In Central Europe, poppy strudel is very popular, especially during Christmas. In Germany, Poland and countries belonging to the former Austro-Hungarian Empire, poppy seed pastries called Mohnkuchen are often eaten around Christmas time.

Indian cuisine

Fig 2.24: Bati Posto from West Bengal

In Indian cuisine white poppy seeds are added for thickness, texture and also give added flavor to the recipe. Commonly used in the preparation of korma, ground poppy seeds, along with coconut and other spices, are combined as a paste, to be added at the last stage of cooking. It is quite hard to grind

them when raw, so they are normally toasted/broiled and water added when grinding to get the right consistency.

Poppy seeds are widely used in Maharashtrian cuisine, Gujarati cuisine, Andhra cuisine, Bihari cuisine, Bengali cuisine, Oriya cuisine, and Malabar cuisine (Northern Kerala).

In Maharashtra, poppy seeds (called खस खस in Marathi) are used to garnish anarsa (अनारसा), a special sweet prepared during the festival of Diwali. It is also added in boiling milk sometimes.

In Gujarat, poppy seeds are mostly used in sweets. The most common use is to garnish on a traditional Indian sweet – Ladoo.

In Bengal (West Bengal and Bangladesh), white poppy seeds are called posto (পোস্তো). They are very popular and are used as the main ingredient in a variety of dishes. One of the most popular[peacock term] dishes is aloo posto (potato and poppy seeds) which consists of a large amount of ground poppy seeds cooked together with potatoes and made into a smooth, rich product, which is sometimes eaten with rice. There are many variants to this basic dish, replacing or complementing the potatoes with such ingredients as onions (pnyaj posto), Ridged Luffa (jhinge posto), chicken (murgi posto), and possibly the most popular prawns (chingri posto). The cooked poppy seeds are sometimes served without any accompanying ingredients at all. The consistency of the dish may vary depending on local or household traditions. There are many other posto dishes. Chadachadi is a dish from Bengali cuisine and includes long strips of vegetables, sometimes with the stalks of leafy greens added, all lightly seasoned with spices like mustard or poppy seeds and flavored with a phoron. One dish involves grilling patties made from posto, sometimes frying them (posto-r bora). Another dish involves simply mixing uncooked ground poppy seeds (kancha posto) with mustard oil, chopped green chili peppers, fresh onions and rice.

In Karnataka cuisine, Gasagase Payasa (Kannada: ಗಸಗಸೆ ಪಾಯಸ) is very popular in southern part of the South Indian state of Karnataka. It is a liquid dessert made out of white poppy seeds, jaggery, coconut and milk. Andhra cuisine also uses white poppy seeds, called Gasaalu (గసాలు) in Telugu, in various recipes.

The seeds themselves do not contain significant amounts of opiates. But a poppy tea consumed in some areas and often referred to as doda has been controversial for containing ground opium poppy plant, especially the seed head, and contains significant levels of opiates. Popular in some South Asian communities, doda is created by grinding dried poppy husks or poppy seeds into a fine powder and then ingesting the mix with hot water or tea. In Canada, doda is made from poppy plants brought in from Afghanistan and Arizona under the guise of legal purposes such as floral arrangements, but is sold illegally from some meat markets.

2.03.18 Saffron

(Source: Wikipedia)

Saffron (pronounced /ˈsæfrən/ or /ˈsæfrɒn/) is a spice derived from the flower of Crocus sativus, commonly known as the "saffron crocus". The vivid crimson stigmas and styles, called threads, are collected and dried to be used mainly as a seasoning and colouring agent in food. Saffron, long among the world's most costly spices by weight, was probably first cultivated in or near Greece.

Fig 2.25: *Saffron crocus,* Crocus sativus*, with its vivid crimson stigmas and styles*

C. sativus is probably a form of C. cartwrightianus, that emerged by human cultivators selectively breeding plants for unusually long stigmas in late Bronze Age Crete. It slowly propagated throughout much of Eurasia and was later brought to parts of North Africa, North America, and Oceania.

Saffron's taste and iodoform or hay-like fragrance result from the chemicals picrocrocin and safranal. It also contains a carotenoid pigment, crocin, which imparts a rich golden-yellow hue to dishes and textiles. Its recorded history is attested in a 7th-century BC Assyrian botanical treatise compiled under Ashurbanipal, and it has been traded and used for over four millennia. Iran now accounts for approximately 90% of the world production of saffron.

Culinary use

Saffron features in European, North African, and Asian cuisines. Its aroma is described by taste experts as resembling that of honey, with woody, hay-like, and earthy notes; according to another such assessment, it tastes of hay, but only with bitter hints. Because it imparts a luminous yellow-orange hue, it is used worldwide in everything from cheeses, confectioneries, and liquors to baked goods, curries, meat dishes, and soups. In past eras, many dishes called for prohibitively copious amounts—hardly for taste, but to parade their wealth.

Because of its high cost saffron was often replaced by or diluted with safflower (Carthamus tinctorius) or turmeric (Curcuma longa) in cuisine. Both mimic saffron's colour well, but have distinctive flavours. Saffron is used in the confectionery and liquor industries; this is its most common use in Italy. Chartreuse, izarra, and strega are types of alcoholic beverages that rely on saffron to provide a flourish of colour and flavour. The savvy often crumble and pre-soak saffron threads for several minutes prior to adding them to their dishes. They may toss threads into water or sherry and leave them to soak for approximately ten minutes. This process extracts the threads' colour and flavour into the liquid phase; powdered saffron does not require this step. The soaking solution is then added to the hot cooking dish, allowing even colour and flavour distribution, which is critical in preparing baked goods or thick sauces.

Fig 2.26: *Saffron rice made with bouillon cubes and saffron.*

Threads are a popular condiment for rice in Spain and Iran, India and Pakistan, and other countries. Two examples of such saffron rice is the zarzuela fish-seafood stew and paella valenciana, a piquant rice-meat preparation. It is essential in making the French bouillabaisse, which is a spicy fish stew from Marseilles, and the Italian risotto alla milanese. The saffron bun has Swedish and Cornish variants and in Swedish is known as lussekatt (literally "Lucy cat", after Saint Lucy) or lussebulle. The latter is a rich yeast dough bun that is enhanced with saffron, along with cinnamon or nutmeg and currants. They are typically eaten during Advent, and especially on Saint Lucy's Day. In England, the saffron "revel buns" were traditionally baked for anniversary feasts (revels) or for church dedications. In the West of Cornwall, large saffron "tea treat buns" signify Methodist Sunday School outings and activities.

Moroccans use saffron in their tajine-prepared dishes, including kefta (meatballs with tomato), mqualli (a citron-chicken dish), and mrouzia (succulent lamb dressed with plums and almonds). Saffron is key in the chermoula herb mixture that flavours many Moroccan dishes. Uzbeks use it in a special rice-based offering known as "wedding plov" (cf. pilaf). Saffron is also essential in chelow kabab, the Iranian national dish. The use of saffron in south Indian cuisine is perhaps best characterised by the eponymous Kesari bhath - a semolina based dessert from Karnataka. South Asian cuisines also use saffron in biryanis, which are spicy rice-vegetable dishes. (An example is the Pakki variety of Hyderabadi biryani.) Saffron spices subcontinental beef and chicken entrees and goes into many sweets, particularly in Muslim and Rajasthani fare. Modern technology has added another delicacy to the list: saffron ice cream. Regional milk-based sweets feature it, among them gulab jamun, kulfi, double ka meetha, and "saffron lassi"; the last is a sweet yogurt-based Jodhpuri drink that is culturally symbolic.

Within India, companies producing ice-cream, Haldiram's, Vadilal and Bikaji, use saffron in large quantities.

2.03.19 Tamarind

(Source: Wikipedia)

Tamarind (Tamarindus indica) is a leguminous tree in the family Fabaceae indigenous to tropical Africa. The genus Tamarindus is a monotypic taxon, having only a single species.

The tamarind tree produces pod-like fruit, which contain an edible pulp that is used in cuisines around the world. Other uses of the pulp include traditional medicine and metal polish. The wood can be used for woodworking, and tamarind seed oil can be extracted from the seeds. Because of the tamarind's many uses, cultivation has spread around the world in tropical and subtropical zones.

Fig 2.27: Tamarindus *leaves and fruit pod*

Culinary Use

The fruit pulp is edible. The hard green pulp of a young fruit is considered by many to be too sour, but is often used as a component of savory dishes, as a pickling agent or as a means of making certain poisonous yams in Ghana safe for human consumption.

The ripened fruit is considered the more palatable, as it becomes sweeter and less sour (acidic) as it matures. It is used in desserts, as a jam, blended into juices, or sweetened drinks, sorbets, ice creams and other snacks. In Western cuisine, it is found in Worcestershire Sauce. In most parts of India, tamarind extract is used to flavor foods, in curries and traditional dishes, and tamarind sweet chutney is popular in India and Pakistan as a dressing for many snacks. Tamarind pulp is a key ingredient in flavoring curries and rice in south Indian cuisine, as well as in the Chigali lollipop. Across the Middle East, from the Levant to Iran, tamarind is used in savory dishes, notably meat-based stews, and often combined with dried fruits to achieve a sweet-sour tang.

Tamarind seed oil

Tamarind seed oil is the oil made from the kernel of tamarind seeds. Isolation of the kernel without the thin but tough shell (or testa) is difficult. Tamarind kernel powder is used as sizing material for textile and jute processing, and in the manufacture of industrial gums and adhesives. It is de-oiled to stabilize its colour and odor on storage.

2.03.20 Turmeric

(Adopted from: Thungam Philip,E. Modern Cookery, Vol I, 6th Edition, 2010, Orient Blackswan, New Delhi)

The aromatic root of rhizome root of a plant grown in India and in West Indies, it is sold in the root form and as powder. The hard resinous flesh of the dried root varies from dark orang to deep reddish brown. In the powder form it has a signature yellow color. It belongs to ginger family though its flavor is different. Used in curry powder to impart its color and aroma and also for its preserver properties. Games and meets that are dried are soaked in a liberal quantity of turmeric and salt. Indian medicine makes frequent use of turmeric. For example, plasters of turmeric are used on bruises as dry dressing on open wounds, paste of turmeric and neem leaves are used to heal the marks of small pox. Turmeric is also used as a inexpensive substitute for saffron as a coloring agent.

(Source: Wikipedia)

Turmeric (Curcuma longa) (/ˈtɜːrmərɪk/) is a rhizomatous herbaceous perennial plant of the ginger family, Zingiberaceae. It is native to the Indian Subcontinent and Southeast Asia, and requires temperatures between 20 and 30 °C (68–86 °F) and a considerable amount of annual rainfall to thrive. Plants are gathered annually for their rhizomes and propagated from some of those rhizomes in the following season.

Fig 2.28: Turmeric flower

When not used fresh, the rhizomes are boiled in water for about 30–45 minutes and then dried in hot ovens, after which they are ground into a deep-orange-yellow powder commonly used as a coloring and flavoring agent in many Asian cuisines, especially for curries, as well as for dyeing. Turmeric powder has a warm, bitter, pepper-like flavor and earthy, mustard-like aroma.

Fig 2.29: Turmeric powder

Although long used in Ayurvedic medicine to treat various diseases, there is little high-quality clinical evidence for use of turmeric or its main constituent, curcumin, as a therapy.

Culinary Use

Turmeric is one of the key ingredients in many Asian dishes, imparting a mustard-like, earthy aroma and pungent, slightly bitter flavor to foods.

Turmeric is used mostly in savory dishes, but also is used in some sweet dishes, such as the cake sfouf. In India, turmeric plant leaf is used to prepare special sweet dishes, Patoleo, by layering rice flour and coconut-jaggery mixture on the leaf, then closing and steaming it in a special utensil (chondrõ). Most turmeric is used in the form of rhizome powder. In some regions (especially in Maharashtra, Goa, Konkan, and Kanara), turmeric leaves are used to wrap and cook food. Turmeric leaves are mainly used in this way in areas where turmeric is grown locally, since the leaves used are freshly picked. Turmeric leaves impart a distinctive flavor.

In recipes outside South Asia, turmeric sometimes is used as an agent to impart a golden yellow color. It is used in many products such as canned beverages, baked products, dairy products, ice cream, yogurt, yellow cakes, orange juice, biscuits, popcorn color, cereals, sauces, and gelatin. It is a significant ingredient in most commercial curry powders.

Although typically used in its dried, powdered form, turmeric also is used fresh, like ginger. It has numerous uses in East Asian recipes, such as pickle that contains large chunks of soft turmeric, made from fresh turmeric.

Turmeric is used widely as a spice in South Asian and Middle Eastern cooking. Many Persian dishes use turmeric as a starter ingredient. Various Iranian khoresh dishes are started using onions caramelized in oil and turmeric, followed by other ingredients. The Moroccan spice mix ras el hanout typically includes turmeric.

In India and Nepal, turmeric is widely grown and extensively used in many vegetable and meat dishes for its color, especially to thicken and darken gravies and sauces.

In South Africa, turmeric is used to give boiled white rice a golden color, known as geelrys (yellow rice) traditionally served with bobotie.

In Vietnamese cuisine, turmeric powder is used to color and enhance the flavors of certain dishes, such as bánh xèo, bánh khọt, and mi quang. The powder is used in many other Vietnamese stir-fried and soup dishes.

The staple Cambodian curry paste kroeung, used in many dishes including Amok, typically contains fresh turmeric.

In Indonesia, turmeric leaves are used for Minang or Padang curry base of Sumatra, such as rendang, sate padang, and many other varieties.

In Thailand, fresh turmeric rhizomes are used widely in many dishes, in particular in the southern Thai cuisine, such as the yellow curry and turmeric soup.

In medieval Europe, turmeric became known as Indian saffron because it was used widely as an alternative to the far more expensive saffron spice.

CHECK YOUR PROGRESS

Describe the nature of pepper including its native habitat, types and uses in cooking.
Discuss the culinary uses of poppy seeds.
Explain the various uses of tamarind in cooking and other areas.
Elaborate the versatility of saffron in Indian and western cuisine.
Describe the uses of termeric in cooking and herbal medicine.

2.03.21 Celery

(Source: Wikipedia)

Celery (Apium graveolens) is a marshland plant in the family Apiaceae that has been cultivated as a vegetable since antiquity. Celery has a long fibrous stalk tapering into leaves. Depending on location and cultivar, either its stalks, leaves, or hypocotyl are eaten and used in cooking. Celery seed is also used as a spice and its extracts have been used in herbal medicine.

Uses

Celery is eaten around the world as a vegetable. In North America the crisp petiole (leaf stalk) is used. In Europe the hypocotyl is used as a root vegetable. The leaves are strongly flavored and are used less often, either as a flavoring in soups and stews or as a dried herb. Celery, onions, and bell peppers are the "holy trinity" of Louisiana Creole and Cajun cuisine. Celery, onions, and carrots make up the French mirepoix, often used as a base for sauces and soups. Celery is a staple in many soups, such as chicken noodle soup.

Fig 2.30: Celery seed (Apium graveolens) essential oil

Leaves

Celery leaves are frequently used in cooking to add a mild spicy flavor to foods, similar to, but milder than black pepper. Celery Leaves are suitable dried as a sprinkled on seasoning for use with baked, fried or roasted fish, meats and as part of a blend of fresh seasonings suitable for use in soups and stews.

Seeds

In temperate countries, celery is also grown for its seeds. Actually very small fruit, these "seeds" yield a valuable essential oil that is used in the perfume industry. The oil contains the chemical compound apiole. Celery seeds can be used as flavoring or spice, either as whole seeds or ground.

Celery salt

The seeds can be ground and mixed with salt, to produce celery salt. Celery salt can be made from an extract of the roots or using dried leaves. Celery salt is used as a seasoning, in cocktails (notably to enhance the flavor of Bloody Mary cocktails), on the Chicago-style hot dog, and in Old Bay Seasoning.

Fig 2.31: Celery seeds

Nutrition

Celery is used in weight-loss diets, where it provides low-calorie dietary fibre bulk. Celery is often incorrectly thought to be a "negative-calorie food," the digestion of which burns more calories than the body can obtain. In fact, eating celery provides positive net calories, with digestion consuming only a small proportion of the calories taken in.

Allergies

Celery is among a small group of foods (headed by peanuts) that appear to provoke the most severe allergic reactions; for people with celery allergy, exposure can cause potentially fatal anaphylactic shock. The allergen does not appear to be destroyed at cooking temperatures. Celery root—commonly eaten as celeriac, or put into drinks—is known to contain more allergen than the stalk. Seeds contain the highest levels of allergen content. Exercise-induced anaphylaxis may be exacerbated. An allergic reaction also may be triggered by eating foods that have been processed with machines that have previously processed celery, making avoiding such foods difficult. In contrast with peanut allergy being most prevalent in the US, celery allergy is most prevalent in Central Europe. In the European Union, foods that contain or may contain celery, even in trace amounts, must be clearly marked as such.

2.03.22 Curry Leaf

Uses

The leaves are highly valued as seasoning in southern and west-coast Indian cooking, and Sri Lankan cooking especially in curries, usually fried along with the chopped onion in the first stage of the preparation. They are also used to make thoran, vada, rasam and kadhi. In their fresh form, they have a short shelf life and do not keep well in the refrigerator. They are also available dried, though the aroma is largely inferior. Leaves can also be harvested from home-raised plants as it is also fairly

Fig 2.32: *Curry Tree*

(Source: Wikipedia)

easily grown in warmer areas of the world, or in containers where the climate is not supportive outdoors.

The leaves of Murraya koenigii are also used as an herb in Ayurvedic medicine.

Although most commonly used in curries, leaves from the curry tree can be used in many other dishes to add flavour. In Cambodia, Khmer toast the leaves in an open flame or roast it until crispy and then crush it into a soured soup dish called maju krueng.

Because of its aromatic characteristic properties, the plant has uses in soap making, body lotions, potpourri, scent, air fresheners, body fragrance, perfume, bath and massage oils, aromatherapy, towel scenting, spas and health clinics, incense, facial steams or hair treatments.

In the absence of tulsi leaves, curry leaves are used for rituals, such as pujas.

2.03.23 Marjoram

(Source: Wikipedia)

Marjoram /ˈmɑːrdʒərəm/ (Origanum majorana, syn. Majorana hortensis Moench, Majorana majorana (L.) H. Karst) is a somewhat cold-sensitive perennial herb or undershrub with sweet pine and citrus flavors. In some Middle Eastern countries, marjoram is synonymous with oregano, and there the names sweet marjoram and knotted marjoram are used to distinguish it from other plants of the genus Origanum. It is also called pot marjoram, although this name is also used for other cultivated species of *Origanum*.

Fig 2.33: Origanum majorana, *Lamiaceae, Marjoram, inflorescences. Botanical Garden KIT, Karlsruhe, Germany.*

Use in cooking

Marjoram is used for seasoning soups, stews, dressings, and sauces. As per http://www.indianmirror.com/ayurveda/marjoram.html , Leaves give strong flavor for soups, sausages, potato salad, etc. Rubbing with fresh leaves improves all strong meats. It is an extract for relaxing bath and also a hair straitener. Its extract also is used for aromatic tea. (

2.03.24 Pomegranate Seeds

(Source: Wikipedia)

The pomegranate (Punica granatum) is a fruit-bearing deciduous shrub or small tree in the family Lythraceae that grows between 5 and 8 m (16 and 26 ft) tall.

The fruit is typically in season in the Northern Hemisphere from September to February, and in the Southern Hemisphere from March to May. As intact arils or juice, pomegranates are used in baking, cooking, juice blends, meal garnishes, smoothies, and alcoholic beverages, such as cocktails and wine. The pomegranate originated in the region extending from modern-day Iran through Afghanistan and Pakistan to northern India, and has been cultivated since ancient times throughout the Mediterranean region. It was introduced into Spanish America in the late 16th century and into California by Spanish settlers in 1769. Today, it is widely cultivated throughout the Middle East and Caucasus

Fig 2.34: Pomegranate seeds and fruit

region, north and tropical Africa, South Asia, Central Asia, the drier parts of southeast Asia, and parts of the Mediterranean Basin. It is also cultivated in parts of Arizona and California. In the 20th and 21st centuries, it became more common in the commercial markets of Europe and the Western Hemisphere.

Culinary use

After the pomegranate is opened by scoring it with a knife and breaking it open, the seeds are separated from the peel and internal white pulp membranes. Separating the seeds is easier in a bowl of water because the seeds sink and the inedible pulp floats. Freezing the entire fruit also makes it easier to separate. Another effective way of quickly harvesting the seeds is to cut the pomegranate in half, score each half of the exterior rind four to six times, hold the pomegranate half over a bowl, and smack the rind with a large spoon. The seeds should eject from the pomegranate directly into the bowl, leaving only a dozen or more deeply embedded seeds to remove. The entire seed is consumed raw, though the watery, tasty sarcotesta is the desired part. The taste differs depending on the variety or cultivar of pomegranate and its ripeness.

Pomegranate juice can be sweet or sour, but most fruits are moderate in taste, with sour notes from the acidic ellagitannins contained in the juice. Pomegranate juice has long been a popular drink in Europe, the Middle East and is now widely distributed in the United States and Canada. Grenadine syrup long ago consisted of thickened and sweetened pomegranate juice, now is usually a sales name for a syrup based on various berries, citric acid, and food coloring, mainly used in cocktail mixing. In Europe,

Bols still manufactures grenadine syrup with pomegranate. Before tomatoes, a New World fruit, arrived in the Middle East, pomegranate juice, molasses, and vinegar were widely used in many Iranian foods, and are still found in traditional recipes such as fesenjān, a thick sauce made from pomegranate juice and ground walnuts, usually spooned over duck or other poultry and rice, and in ash-e anar (pomegranate soup).

Fig 2.35: A bowl of ash-e anar, a Persian/Iranian soup made with pomegranate juice

Pomegranate seeds are used as a spice known as anar dana (from Persian: anar + dana, pomegranate + seed), most notably in Indian and Pakistani cuisine. Dried whole seeds can often be obtained in ethnic South Asian markets. These seeds are separated from the flesh, dried for 10–15 days, and used as an acidic agent for chutney and curry preparation. Ground anardana is also used, which results in a deeper flavoring in dishes and prevents the seeds from getting stuck in teeth. Seeds of the wild pomegranate variety known as daru from the Himalayas are regarded as high quality sources for this spice.

Dried pomegranate seeds, found in some natural specialty food markets, still contain some residual water, maintaining a natural sweet and tart flavor. Dried seeds can be used in several culinary applications, such as trail mix, granola bars, or as a topping for salad, yogurt, or ice cream.

In the Caucasus, pomegranate is used mainly for juice. In Azerbaijan, a sauce from pomegranate juice narsharab, (from Persian: (a)nar + sharab, lit. "pomegranate wine") is usually served with fish or tika kabab. In Turkey, pomegranate sauce (Turkish: nar ekşisi) is used as a salad dressing, to marinate meat, or simply to drink straight. Pomegranate seeds are also used in salads and sometimes as garnish for desserts such as güllaç. Pomegranate syrup or molasses is used in muhammara, a roasted red pepper, walnut, and garlic spread popular in Syria and Turkey.

In Greece, pomegranate (error: {{lang-xx}}: text has italic markup (help)) is used in many recipes, including kollivozoumi, a creamy broth made from boiled wheat, pomegranates, and raisins, legume

salad with wheat and pomegranate, traditional Middle Eastern lamb kebabs with pomegranate glaze, pomegranate eggplant relish, and avocado-pomegranate dip. Pomegranate is also made into a liqueur, and as a popular fruit confectionery used as ice cream topping, mixed with yogurt, or spread as jam on toast. In Cyprus and Greece, and among the Greek Orthodox Diaspora, ρόδι (Greek for pomegranate) is used to make koliva, a mixture of wheat, pomegranate seeds, sugar, almonds, and other seeds served at memorial services.

In Mexico, they are commonly used to adorn the traditional dish chiles en nogada, representing the red of the Mexican flag in the dish which evokes the green (poblano pepper), white (nogada sauce) and red (pomegranate seeds) tricolor.

2.03.25 Stone Flowers

(Source: Wikipedia)

Parmotrema perlatum, commonly known as black stone flower or kalpasi, is a species of lichen used as spice in India. The species occurs throughout the temperate Northern and Southern Hemispheres. Typically used in meat dishes like nahari(Paaya), Bombay biryani, Goan meat stews, it is also used in vegetarian dishes. It is one of the ingredients in East Indian Bottle Masala, used for cooking Meats, fish and vegetables.

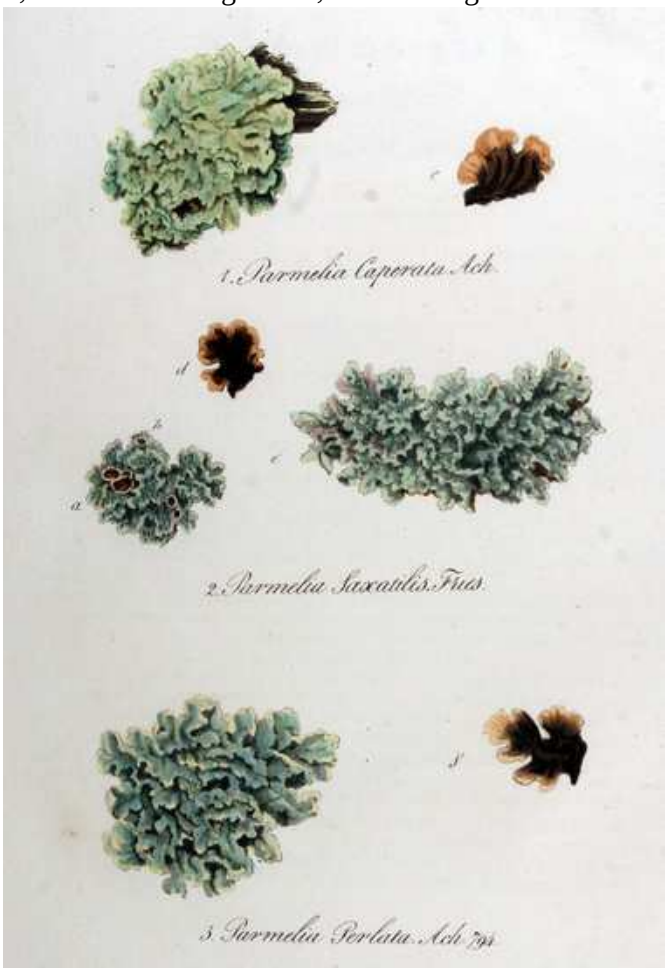

Fig 2.36: 1. Flavoparmelia caperata (Linnaeus) Hale 1986, syn. Parmelia caperata (Linnaeus) Acharius 1803 2. Parmelia saxatilis (Linnaeus) Acharius 1803 3. Parmelia perlata (Hudson) Acharius 1803

Some of the other names for it include shaileyam in Sanskrit, kalpasi in Tamil, Dagar da Phool in Punjabi, dagad phool in Marathi, Raathi Pootha in Telugu "Kallu hoovu" in Kannada and patthar ke phool in Hindi, "Bojhwar" in northern India.

CHECK YOUR PROGRESS

Describe the nature of celery including its native habitat, uses in cooking.
Discuss the culinary uses of marjoram.
Explain the various uses of stone flower in cooking.
Elaborate the versatility of curry leaves in Indian and western cuisine.
Describe the uses of pomegranate in cooking.

2.03.26 Basil

(Source: Wikipedia)

Basil is possibly native to India, and has been cultivated there for more than 5,000 years. It was thoroughly familiar to the Greek authors Theophrastus and Dioscorides. It is a hardy annual plant, best known as a culinary herb prominently featured in Italian cuisine, and also plays a major role in Southeast Asian cuisines of Indonesia, Thailand, Malaysia, Vietnam, Cambodia, Laos, and Taiwan. Depending on the species and cultivar, the leaves may taste somewhat like anise, with a strong, pungent, often sweet smell.

Fig 2.37: *Basil plant*

There are many varieties of Ocimum basilicum, as well as several related species or species hybrids also called basil. The type used in Italian food is typically called sweet basil (or Genovese basil), as opposed to Thai basil (O. basilicum var. thyrsiflora), lemon basil (O. X citriodorum), and holy basil (Ocimum tenuiflorum), which are used in Asia. While most common varieties of basil are treated as annuals, some are perennial in warm, tropical climates, including holy basil and a cultivar known as "African blue".

To date, there are no scientifically established health benefits of consuming basil leaves or oil.

Culinary use

Basil is most commonly used fresh in cooked recipes. In general, it is added at the last moment, as cooking quickly destroys the flavor. The fresh herb can be kept for a short time in plastic bags in the refrigerator, or for a longer period in the freezer, after being blanched quickly in boiling water. The dried herb also loses most of its flavor, and what little flavor remain tastes very different, with a weak coumarin flavor, like hay.

In Taiwan, people add fresh basil leaves to thick soups. They also eat fried chicken with deep-fried basil leaves. Basil (most commonly Thai basil) is commonly steeped in cream or milk to create an interesting flavor in ice cream or chocolates (such as truffles). The leaves are not the only part of basil used in culinary applications, the flower buds have a more subtle flavor and they are edible.

Seeds

When soaked in water, the seeds of several basil varieties become gelatinous, and are used in Asian drinks and desserts such as faluda, sharbat-e-rihan, or hột é.

2.03.27 Betel Nut (सुपारी*)*

(Source: Wikipedia)

The areca nut (/ˈærɪkə/ or /əˈriːkə/) is the seed of the areca palm (Areca catechu), which grows in much of the tropical Pacific (Melanesia and Micronesia), Southeast and South Asia, and parts of east Africa. This seed is commonly referred to as betel nut so it is easily confused with betel (Piper betle) leaves that are often used to wrap it (paan). The term areca originated from the Malayalam word adakka (അടക്ക) and dates from the 16th century, when Dutch and Portuguese sailors took the nut from Kerala to Europe. Consumption has many harmful effects on health and is carcinogenic to humans. Various compounds present in the nut, most importantly arecoline (the primary psychoactive ingredient which is similar to nicotine), contribute to histologic changes in the oral mucosa. As with chewing tobacco, its use is discouraged by preventive efforts.

Effects on health

Systemic effects of areca nut

As per Garg and others (Garg A, Chaturvedi P, Gupta PC (January 2014). "A review of the systemic adverse effects of areca nut or betel nut". Indian Journal of Medical and Paediatric Oncology. 35 (1): 3–9.)

“Areca nut affects almost all organs of the human body, including the brain, heart, lungs, gastrointestinal tract and reproductive organs. It causes or aggravates pre-existing conditions such as neuronal injury, myocardial infarction, cardiac arrhythmias, hepatotoxicity, asthma, central obesity, type II diabetes, hyperlipidemia, metabolic syndrome, etc. Areca nut affects the endocrine system, leading to hypothyroidism, prostate hyperplasia and infertility. It affects the immune system leading to suppression of T-cell activity and decreased release of cytokines. It has harmful effects on the fetus when used during pregnancy. ”

Habitual chewers of betel leaf and areca nut have a greatly increased risk of developing a range of serious diseases, including cancers of the mouth and esophagus. It has many systemic effects (described above).

Fig 2.38: Areca nuts hanging from the palm

Chewing areca nut alone has been linked to oral submucosal fibrosis. According to Medline Plus, "Long-term use [of betel-areca preparations] has been associated with oral submucosal fibrosis (OSF), pre-cancerous oral lesions and squamous cell carcinoma. Acute effects of betel chewing include asthma exacerbation, hypertension, and tachycardia. There may additionally be a higher risk of cancers of the liver, mouth, esophagus, stomach, prostate, cervix, and lung with regular betel use. Other effects can include a possible effect on blood sugar levels, which may in turn increase the risk of developing type 2 diabetes."

Use of areca nut has been associated with deterioration of psychosis in people with preexisting psychiatric disorders. Areca nut consumption is also tied to chronic kidney disease in men.

In 2003 the International Agency for Research on Cancer (IARC), a World Health Organization sponsored group, found sufficient evidence that the habit of chewing betel quid, with or without tobacco, causes cancer in humans. Support for this conclusion is provided by a recent study which found that paan, even without concurrent tobacco use, is a risk factor for oral cancer. In October, 2009, 30 scientists from 10 countries met at IARC to reassess the carcinogenicity of various agents including areca nut, and mechanisms of carcinogenesis. They confirmed there is sufficient evidence that areca nut, with or without tobacco, can cause cancer.

During pregnancy

Chewing paan (and/or other areca nut and betel leaf formulations) during pregnancy significantly increases adverse outcomes for the baby. The habit is associated with higher incidences of preterm birth and low birth weight and height. Biologically, these effects may be a consequence of the arecoline that is found in areca nuts. The habit also exposes the fetus to various other toxic components linked to cancer.

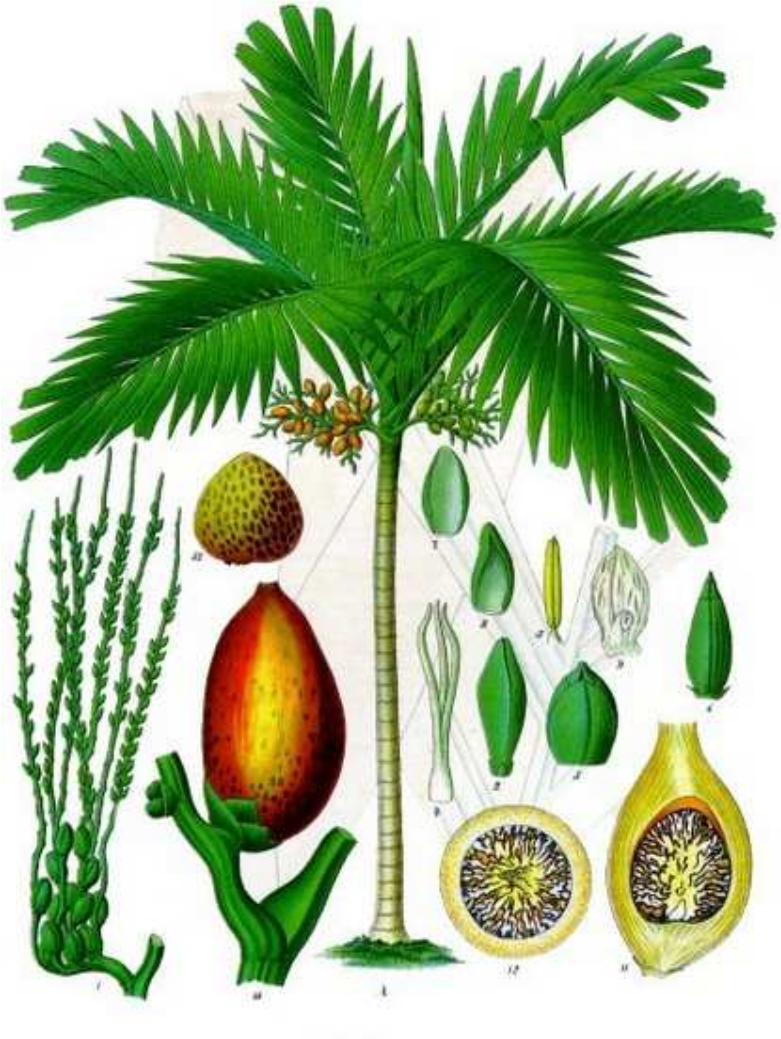

Fig 2.39: 19th century drawing of the Areca palm and its nut.

2.03.28 Black Salt (Kala Namak)

(Source: Wikipedia, "Kala Namak")

Kala namak (Urdu / Hindi) or bire noon (Nepalese; literally "black salt") is a type of rock salt, a salty and pungent-smelling condiment used in South Asia. It is also known as "Himalayan black salt", Sulemani namak, bit lobon, kala noon, or pada loon. It is found mostly in the Himalayas.

Fig 2.40: Whole kala namak salt crystals

The condiment is composed largely of sodium chloride with several other components lending the salt its colour and smell. The smell is mainly due to its sulfur content. Because of the presence of Greigite (Fe3S4, Iron(II,III) sulfide) in the mineral, it forms brownish pink to dark violet translucent crystals when whole. When ground into a powder, its color ranges from purple to pink.

Kala namak has been praised in Ayurveda and used for its perceived medical qualities.

Uses in Cooking

Kala namak is used extensively in South Asian cuisines of Bangladesh, Nepal, India and Pakistan as a condiment or added to chaats, chutneys, salads, all kinds of fruits, raitas and many other savory Indian snacks. Chaat masala, an Indian spice blend, is dependent upon black salt for its characteristic sulfurous hard-boiled-egg aroma. Those who are not accustomed to black salt often describe the smell as similar to rotten eggs. Kala namak is appreciated by some vegans in dishes that mimic the taste of eggs. It is used, for example, to season tofu or avocado to mimic an egg salad.

Kala namak is considered a cooling spice in Ayurveda and is used as a laxative and digestive aid. It is also believed to relieve flatulence and heartburn. It is used in Jammu to cure goitres. This salt is also used to treat hysteria and for making toothpastes by combining it with other mineral and plant ingredients.

Due to its sulfur content giving an egg-like taste when incorporated appropriately, it is also used for creating vegan egg-free versions of recipes like deviled eggs

2.03.29 Red Chilli

(Adopted from: Thungam Philip,E. Modern Cookery, Vol I, 6th Edition, 2010, Orient Blackswan, New Delhi)

Chilies are grown abundantly in India. They are used extensively in Indian savory dishes. They also form important ingredient of curry powder. They also have medicinal properties and help in curing lumbago, neuralgia, rheumatism, etc.
There are two main groups of chilies.

- Capsicum Anum
- Capsicum Frutescens

The variety acuminatum (Cap Anum) is the principal source of commercially used red chilies.

2.03.30 Rock Salt.

(Source: Wikipedia)

Halite (/ˈhælaɪt/ or /ˈheɪlaɪt/), commonly known as rock salt, is a type of salt, the mineral (natural) form of sodium chloride (NaCl). Halite forms isometric crystals. The mineral is typically colorless or white, but may also be light blue, dark blue, purple, pink, red, orange, yellow or gray depending on the amount and type of impurities. It commonly occurs with other evaporite deposit minerals such as several of the sulfates, halides, and borates.

Uses

Halite is often used both residentially and municipally for managing ice. Because brine (a solution of water and salt) has a lower freezing point than pure water, putting salt or saltwater on ice that is near 0 °C (32 °F) will cause it to melt. (This effect is called freezing-point depression.) It is common for homeowners in cold climates to spread salt on their sidewalks and driveways after a snow storm to melt the ice. It is not necessary to use so much salt that the ice is completely melted; rather, a small amount of salt will weaken the ice so that it can be easily removed by other means. Also, many cities will spread a mixture of sand and salt on roads during and after a snowstorm to improve traction. In addition to de-icing, rock salt is occasionally used in agriculture. An example of this would be inducing salt stress to suppress the growth of annual meadow grass in turf production.

Salt is also used extensively in cooking as a flavor enhancer and to cure a wide variety of foods such as bacon and fish. Larger pieces can be ground in a salt mill or dusted over food from a shaker as finishing salt.

Some cultures, especially in Africa, prefer a wide variety of different rock salts for different dishes. Pure salt is avoided as particular colors of salt indicates the presence of different impurities. Many recipes call for particular kinds of rock salt, and imported pure salt often has impurities added to adapt to local tastes.

CHECK YOUR PROGRESS

Describe the nature of red chilli including its native habitat, uses in cooking.
Discuss the culinary uses and herbal medicine applications of kala namak.
Explain the various uses of rock salt in cooking.
Elaborate the versatility of basil in Indian and western cuisine.
Describe the health hazards of betel nuts.

2.04 STORAGE AND USAGE CONSIDERATIONS

(Adopted from: Thungam Philip,E. Modern Cookery, Vol I, 6th Edition, 2010, Orient Blackswan, New Delhi)

- First thing to note in storage of food is to keep it clean, cool and covered.
- Inspect periodically. Prepare an inventory of item and tick mark the stock inspected.
- There should be regular turnover of items.
- Schedule cleaning on daily, weekly and monthly basis according to a fixed policy.
- Restrict access to food items.
- Don't keep a larger quantity in kitchen or larder than is required for the day.
- Store room should be well lit, ventilated, vermin-proof and dry.
- Avoid ornamentations on cupboards and shelves as they gather dust.
- Design the doors so that entire shelf is visible and accessible when you open the door.
- You should know the purpose for which a shelf is kept. Label it likewise. Use modular design which allows it to be taken away, re-erected and properly cleaned. Use a narrow design so that all goods are easily accessed.
- Avoid shelves above windows. Use shelves made of granite or hard stone for storage of oily material like fat. Reserve one part of the shelves for storing items in glass or porcelain jars.
- Don't keep any food items on floor (including items in cardboard cartons, etc).
- Keep a margin of at least 75cm from floor for the lowest of the racks.
- Use containers with appropriate material as per the item to be stored. Make sure that they are smooth, easy to clean, not easily worn, bent, dent, buckle, chipped, cracked, penetrated by vermin, or corroded.
- Use stainless steel, vitrified china, glass or appropriate plastic material for moist unpackaged food items or ingredients. Make sure that the solders of the containers if any are non-toxic.
- Food containers must be placed clear of the walls in scrupulous manner. The items which are naturally free of moisture or liquids should be kept in dry and clean (from inside and outside) containers.
- Apply your mind in keeping the order in whih the food are stored. You may keep in mind the ítmes which are used in conjunctions, time of year they are used, etc. This will add to your productivity.

CHECK YOUR PROGRESS

Explain the importance of keeping items in a specific sequence.
Discuss the nature of food items which should be kept in containers made of glass.
Describe design considerations for shelves in cupboard.

2.05 SUMMARY

We began with the definition of condiment:

A condiment is a spice, sauce, or preparation that is added to food to impart a particular flavor, to enhance its flavor, or in some cultures, to complement the dish. The term originally described pickled or preserved foods, but has shifted meaning over time.

Condiments in Indian Cuisine

We studied some of the condiments used in Indian cuisine.

Dried powders

- Ajwain
- Asafetida
- Black salt
- Cardamom powder
- Red chili powder
- Coriander powder
- Curry leaves
- Garam masala
- Ginger, ginger powder
- Himalayan salt
- Jira (Indian cumin seeds)
- Raai
- Turmeric

Chutneys

- Chammanthi podi
- Coriander chutney
- Coconut chutney
- Garlic chutney (made from fresh garlic, coconut and groundnut)
- Mint chutney
- Onion chutney
- Saunth chutney (made from dried ginger and tamarind paste)
- Tamarind chutney (Imli chutney)
- Tomato chutney
- Some of the herbs, spices and condiments we studied included:
-
- Allspice, also called pimenta,[a] Jamaica pimenta, myrtle pepper is the dried unripe fruit (berries, used as a spice) of Pimenta dioica, a midcanopy tree native to the Greater Antilles, southern Mexico, and Central America, now cultivated in many warm parts of the world.
-
- Ajwain: The small fruits are pale brown schizocarps and have an oval shape, resembling caraway and cumin. It has a bitter and pungent taste, with a flavor similar to anise and oregano.
- The aniseed is grown in India, Pakistan, China, Mexico, Peru, Argentina, Spain, Syria, Lebanon, Hong Kong and Egypt. It is small and oval in shape with greenish brown color. It is used both in Indian and western cooking.

  Asafoetida /æsəˈfɛtɪdə/ is the dried latex (gum oleoresin) exuded from the rhizome or tap root of several species of Ferula, a perennial herb that grows 1 to 1.5 m (3.3 to 4.9 ft) tall. The species is native to the deserts of Iran and mountains of Afghanistan and is mainly cultivated in nearby India. As its name suggests, asafoetida has a fetid smell, but in cooked dishes, it delivers a smooth flavour reminiscent of leeks.

- Cardamom: Fruit of reed-like plant, native of Malabar Coast, cultivated in Jamaica also is known as cardamom. The fruit is a small pod and the seeds in it have strong sweet flavor. Pods have size about half cm to two cm in length.
- We also studied the various points to remember about storage of food itmes including herbs, condiments and packaged food, like:
- First thing to note in storage of food is to keep it clean, cool and covered.
- Inspect periodically. Prepare an inventory of item and tick mark the stock inspected.
- There should be regular turnover of items.
- Schedule cleaning on daily, weekly and monthly basis according to a fixed policy.
- Restrict access to food items.
- Don't keep a larger quantity in kitchen or larder than is required for the day.
- Store room should be well lit, ventilated, vermin-proof and dry.
- Avoid ornamentations on cupboards and shelves as they gather dust.
- Design the doors so that entire shelf is visible and accessible when you open the door.
- You should know the purpose for which a shelf is kept. Label it likewise. Use modular design which allows it to be taken away, re-erected and properly cleaned. Use a narrow design so that all goods are easily accessed.
- Avoid shelves above windows. Use shelves made of granite or hard stone for storage of oily material like fat. Reserve one part of the shelves for storing items in glass or porcelain jars.
- Don't keep any food items on floor (including items in cardboard cartons, etc).
- Keep a margin of at least 75cm from floor for the lowest of the racks.
- Use containers with appropriate material as per the item to be stored. Make sure that they are smooth, easy to clean, not easily worn, bent, dent, buckle, chipped, cracked, penetrated by vermin, or corroded.
- Use stainless steel, vitrified china, glass or appropriate plastic material for moist unpackaged food items or ingredients. Make sure that the solders of the containers if any are non-toxic.
- Food containers must be placed clear of the walls in scrupulous manner. The items which are naturally free of moisture or liquids should be kept in dry and clean (from inside and outside) containers.
- Apply your mind in keeping the order in whih the food are stored. You may keep in mind the ítmes which are used in conjunctions, time of year they are used, etc. This will add to your productivity.

2.06 END QUESTIONS

The following questions should help you prepare for the End Examinations. These questions are for 5 marks each and should take you 11 minutes under examination conditions.

1. Describe the concept of condiments.
2. List at least 10 condiments used in Indian cuisine.
3. List at least 10 dried powders used in Indian cuisine.
4. Describe the nature of Allspice including its native habitat, uses in cooking.
5. Discuss the culinary uses of ajwain.
6. Explain the various uses of anise seeds in cooking, liquor and herbal medicine.
7. Elaborate the versatility of asafetida in Indian and western cuisine.
8. Describe various types of bay leaf.
9. Describe the nature of cardamom including its native habitat, uses in cooking.
10. Discuss the culinary uses of cinnamon.

11. Explain the various uses of clove in cooking, liquor and herbal medicine.
12. Elaborate the versatility of coriander seed in Indian and western cuisine.
13. Describe the uses of cumin in cooking.
14. Describe the nature of chilli including its native habitat, uses in cooking.
15. Discuss the culinary uses of fenugreek.
16. Explain the various uses of mace in cooking.
17. Elaborate the versatility of mustard in Indian and western cuisine.
18. Describe the uses of nutmeg in cooking.
19. Describe the nature of pepper including its native habitat, types and uses in cooking.
20. Discuss the culinary uses of poppy seeds.
21. Explain the various uses of tamarind in cooking and other areas.
22. Elaborate the versatility of saffron in Indian and western cuisine.
23. Describe the uses of termeric in cooking and herbal medicine.
24. Describe the nature of celery including its native habitat, uses in cooking.
25. Discuss the culinary uses of marjoram.
26. Explain the various uses of stone flower in cooking.
27. Elaborate the versatility of curry leaves in Indian and western cuisine.
28. Describe the uses of pomegranate in cooking.
29. Describe the nature of red chilli including its native habitat, uses in cooking.
30. Discuss the culinary uses and herbal medicine applications of kala namak.
31. Explain the various uses of rock salt in cooking.
32. Elaborate the versatility of basil in Indian and western cuisine.
33. Describe the health hazards of betel nuts.
34. Explain the importance of keeping items in a specific sequence.
35. Discuss the nature of food items which should be kept in containers made of glass.
36. Describe design considerations for shelves in cupboard.

2.07 REFERENCES

1. Thangam E. Philip, Modern Cookery, Vol I, 6th Edition, 2010, Orient Black swan, New Delhi.
2. Wikipedia (n.d.) ("Condiment", "Indian Condiments", "Allspice", "Ajwain", "Anise", "Asafoetida", "Bay Leaf", "Cardamom", "Cinnamon", "Clove", "Corriander", "Cumin", " Chilli", "Fenugreek", "Mace", "Nutmeg", "Mustard", "Pepper", "Poppy seed", "Saffron", "Tamarind", "Turmeric", "Celary", "Curry Tree", "Marjoram", "Pomegranate", "Basil", "Betel Nut", "Kala Namak", "Rock Salt")
3. http://www.indianmirror.com/ayurveda/marjoram.html

(All references accessed between 05 Dec to 06 Dec 2017)

UNIT 3 MASALAS, PASTES AND GRAVIES IN INDIAN COOKING

Unit – 3 Masalas, Pastes and Gravies in Indian cooking: Masalas and Pastes: Introduction, Types, Blending of Spices, Concept of Dry and Wet Masalas, Pastes used in Indian Cooking, Purchasing, Storing Considerations. Basic Indian Gravies: Introduction, Gravies and Curries, Regional Gravies, Gravy Preparations.

3.00 BEFORE WE BEGIN

In this unit we will study various masalas, pastes and gravies used in Indian cooking. We have studies various condiments herbs and spices in the last unit. In this unit, we will be enhancing our knowledge of these herbs, spices and condiments by studying how to make preliminary preparations like masalas, pastes and gravies. These are normally storable items. You source (procure and purchase) them when the ingredients are available in quantities and at affordable prices. You can then process to prepare masalas, pastes and gravies and store them for further use. We will study Types and Blending of Spices, Concept of Dry and Wet Masalas, Pastes used in Indian Cooking, Purchasing, and Storing Considerations. We will also study the Basic Indian Gravies, Gravies and Curries, Regional Gravies and Gravy Preparations.

The study of such masalas, gravies and paste will be very useful to you in the future courses which you may choose on Indian cuisine and food production. As you are going to be a professional in hospitality studies, food production is one of the fundamental part of your study. We have studied certain basic concepts of food production in the last semester.

3.01 UNIT OBJECTIVES

After studying this unit you will be able to

- Describe the various types of masalas, gravies and pastes
- Explain concept of blending of spices
- Explain how to prepare various dry and wet masalas.
- Describe the various pastes used in Indian cuisine
- Elaborate on the purchasing and storing considerations
- Discuss gravy preparation
-

3.02 TYPES OF SPICES AND SPICE-MIX

Introduction

(Source: Wikipedia, https://en.wikipedia.org/wiki/List_of_Indian_spices)

Below is a list of spices and other flavouring substances commonly used in India.

Image	Standard English	Indian English	Hindi	Notes
	Alkanet Root	Ratin Jot	रातीं जोट *rātīṃ (rātīn) joṭ*	
	Fennel seed	Suwa / Shopa	सौंफ/सुव्वा/शोप *saunf/suvvā/śop*	
	Asafoetida	Hing	हींग *hiṃg (hing)*	Intensely aromatic - related to Truffle and Garlic
	Red Chilli	Lal Mirch	लाल मिर्च *lāl mirch*	
	Black cardamom	Kali Elaichi	काली इलायची *kāli ilāyachī*	Very earthy and darkly aromatic. A much used in North Indian curries.
	White Pepper	Safed Mirchi	सफ़ेद मिर्च *saphed mirch*	
	Black Pepper	Kali Mirchi	काली मिर्च *kālī mirch*	Largest producer is the southern Indian state of Kerala.

Image	Standard English	Indian English	Hindi	Notes
	Peppercorns	Kali Mirch	काली मिर्च *kālī mirch*	
	Black Cumin	Shah Jeera	शाही जीरा *śāhī jīrā*	Sweet, floral and smokey cumin and anise-like flavour. Smaller in size than regular cumin. Often mistaken as Caraway seed. Though English translation is black cumin, the term black cumin is also used as English translation of Nigella sativa, kalonji
	Capers	Kachra	कचरा/कब्र/करेर *kacharā/kabr/karer*	
	Capsicum	Shimla Mirch	शिमला मिर्च *śimalā mirch*	
	Celery / Radhuni Seed	Ajmud	अज्मुद/अज्मोदा *ajmud/ajmodā*	

Image	Standard English	Indian English	Hindi	Notes
	Charoli	Chironji	चिरौंजी *chiroṃjī (chironjī)*	a type of nut particularly used in making desserts
	Indian Bay Leaf, Bay Leaf	Tej Patta	तेज पत्ता *tej pattā*	Both Indian bay leaf and bay leaf are similar and called as Tej Patta in Hindi. however, they are from two different species and have differences in taste
	Cinnamon Buds	Nag Keshar	नाग केशर *nāg keśar*	
	Cinnamon	Dalchini	दालचीनी *dālachīnī*	Grown commercially in Kerala in southern India. Two types, cassia (common) and royal.
	Citric Acid	Nimbu Phool	निंबू फूल *niṃbū phūl*	
	Cloves	Laung	लवंग/लौंग *lavaṃg (lavang) / lauṃg (laung)*	Andhra Pradesh, Kerala, Tamil Nadu and Karnataka are largest producers in India.
	Coriander Powder	Dhania Powder / Pisa Dhania	धनिया पाउडर / पिसा धनिया *dhaniyā*	

Image	Standard English	Indian English	Hindi	Notes
			pāuḍar / pisā dhaniyā	
	Coriander Seed	Dhania / Hara Dhaniya	धनिया *dhaniyā*	
	Cubeb	Kebab Cheeni / Kabab Chini	कबाब चीनी *kabāb chīnī*	Tastes of Clove + Persistent Mild Numbing + Bitterness
	Cumin Seed ground into balls	Jeera Goli	ज़ीरा गोली *zīrā (jīrā) golī*	
	Cumin Seed	Jeera	ज़ीरा *zīrā (jīrā)*	See Kali Jeera.
	Curry Tree or Sweet Neem Leaf	Karipatta	करीपत्ता / कढ़ीपत्ता *karīpattā/kaḍhīpattā*	Cannot retain flavour when dried. Only use fresh.
	Fennel Seed	Saunf / Sanchal	सौंफ / संचल *sauṃph (saunph)/saṃchal (sanchal)*	
	Fenugreek Leaf	Kasoori Methi, Dried	कसूरी मेथी *kasūrī methī*	
	Fenugreek Leaf	Methi Leaves	मेथी पत्ता *methī pattā*	

Image	Standard English	Indian English	Hindi	Notes
	Fenugreek Seed	Methi Seeds	मेथी दाना *methī dānā*	
	Four Seeds	Char Magaj	तरबूज खरबूज ककडी पैंठे के बीज *tarabūj kharabūj kakaḍī pauṃṭhe ke bīj*	Seeds of Water melon, musk melon, cucumber and pumpkin
	Garcinia gummi-gutta	Kudampuli		Used in fish preparations of Kerala
	Garam Masala	Garam Masala	गरम मसाला *garam masālā*	Blend of 8+ spices. Each family has their own secret recipe.
	*Garcinia indica*	Kokum	कोकम *kokam*	
	Garlic	Lehsun	लहसुन *lahasun*	
	Ginger	Adrak	अदरक *adarak*	

Image	Standard English	Indian English	Hindi	Notes
	Dried Ginger	Sonth	सोंठ *soṃṭh (sonṭh)*	mostly powdered
	Green cardamom	Chhoti Elaichi	छोटी इलाइची *chhoṭī ilāichī*	Malabar variety is native to Kerala.
	Indian Bedellium Tree	Gugul, Guggul	गुगल/गुग्गल *gugal/guggal*	Very earthy aromatic mostly used in religious
	Indian Gooseberry	Amla	आँवला *āṃvalā*	
	Black Salt	Kala Namak / Sanchal	काला नमक / संचल *kālā namak / saṃchal (sanchal)*	Rock salt, but with very sulfury smell.
	Kalpasi	Pathar Ka Phool	पत्थर के फूल *patthar ke phūl*	Also known as black stone flower
	Licorice Powder	Jethimadh	जेठीमध *jeṭhīmadh*	
	Long Pepper	Pippali	पिप्पलि *pippali*	
	Mango Extract	Kamiki	कामिकी *kāmikī*	
	Sour Dried	Aamchur/Amchoor	आमचूर / अमचुर	

Image	Standard English	Indian English	Hindi	Notes
	Mango Powder	Powder	*āmachūr/amachur*	
	Mint	Pudina	पुदीना 'pudīnā	
	Mustard Seed	Sarson	सरसों *sarasoṃ*	
	Brown mustard Seed	Rai	राई *rāī*	
	Nigella Seed	Kalonji	कलौंजी *kaloṃjī* *(kalomjī)*	
	Nutmeg	Jaiphal	जैफल / जायफल *jaiphal/jāyaphal*	Whole nuts last forever. Powder, only a month.
	Mace	Javitri	जावित्री *jāvitrī*	Mace is outer covering to nutmeg nut. Similar aroma.

Image	Standard English	Indian English	Hindi	Notes
	Holy Basil	Tulsi	तुलसी *tulasī*	
	Panch Phoron	Panch Phoron	पञ्च फोरन *pañch phoran*	This is a Bengali spice mix that combines fennel seeds, cumin seeds, fenugreek seeds, mustard seeds and nigella seeds.
	Pomegranate Seed	Anardana	अनारदाना *anārdānā*	Dried not fresh. Is ground in Middle East.
	Poppy Seed	Khus Khus	खस-खस *khas-khas*	very popular in West Bengal known **Posto**, with no of Bengali cuisine, most popular **Allu Posto**
	Fresh Hemp Cannabis	Bhaang	भांग *Bhang*	
	Saffron Pulp	Kesar mari mari	केसर मिरी मिरी *kesar mirī mirī*	Actually, safflower concentrate
	Saffron	Kesar, mayur	केसर / जाफरान *kesar/jāpharān*	World's most expensive spice. Flavouring for rice.

Image	Standard English	Indian English	Hindi	Notes
	Salt	Namak	नमक *namak*	
	Sesame Seed	Til	तिल *til*	
	Star Anise	Chakra Phool	चक्र फूल / बदल फुल *chakra phūl/badal phul*	Exotic, Chinese-influenced flavours
	Tamarind	Imli	इमली *imalī*	Provides tartness in South Indian curries
	Carom/thymol seed	Ajwain	अज़वाइन *azvāin*	
	Turmeric	Haldi	हल्दी *haldī*	Source of "yellow color" in many curries.
	Fresh basil	Thai Basil	तुलसी *tulasī*	
	Fresh Coriander	Hara Dhaniya	हरा धनिया *harā dhaniyā*	Fresh green leaves. AKA Cilantro.

Image	Standard English	Indian English	Hindi	Notes
	Green Chili Pepper	Hari Mirch	हरी मिर्च *harī mirch*	
	Gum Tragacanth	Katira Goond	कटीरा गोंद *kaṭīrā goṃd (gond)*	A thickener and coating for desserts
	Inknut *Terminalia chebula*	Harad / Harr / Haritaki	हरद *harad*	
	Dried Red Chili Pepper	Lal Mirchi	लाल मिर्च *lāl mirch*	

Spice Mix (Blending of spice) and Masala

(Souce: Wikipedia, https://en.wikipedia.org/wiki/Spice_mix#Masala)

Spice mixes are blended spices or herbs. When a certain combination of herbs or spices is called for in many different recipes (or in one recipe that is used frequently), it is convenient to blend these ingredients beforehand. Blends such as chili powder, curry powder, herbes de Provence, garlic salt, and other seasoned salts are traditionally sold pre-made by grocers, and sometimes baking blends such as pumpkin pie spice are also available. These spice mixes are also easily made by the home cook for later use.

Masala

Masala is a South Asian term for a spice mix. A masala can be either a combination of dried (and usually dry-roasted) spices, or a paste (such as vindaloo masala) made from a mixture of spices and other ingredients—often garlic, ginger, onions, chilli paste and tomato. Masalas are used extensively in Indian cuisine to add spice and flavour, most familiarly in chicken tikka masala and chicken curry. Other South Asian cuisines including Pakistani, Nepali, Bangladeshi, Burmese, and Sri Lankan regularly use spice mixes.

List of spice mixes

- Advieh, a spice mixture used in Iranian cuisine and Mesopotamian cuisine
- Afrinj, an Ethiopian blend that is milder than berbere or mitmita
- Apple pie spice, usually cinnamon, nutmeg, and allspice
- Bafat, used in Mangalorean cuisine

- Baharat, used throughout the Levant
- Beau monde seasoning
- Berbere, an Ethiopian blend
- Chili powder, a mixture of powdered red chili peppers and other spices and herbs, such as cumin, oregano, and garlic, used in Mexican and Tex-Mex cooking; not to be confused with powdered chili peppers
- Chinese five-spice powder, a blend of cassia (Chinese cinnamon), star anise, cloves, and two other spices
- Chaat masala, ground spices used for flavouring chaat
- Curry powder
- Fines herbes
- Garam masala, an Indian savory spice blend used in the northern half of South Asia (North India and Pakistan)
- Garlic salt
- Goda masala, a sweet spice blend used in the southwestern part of the Indian peninsula
- Herbes de Provence, a Provençal blend of thyme, marjoram, rosemary, basil, bay leaf, and sometimes lavender
- Hawaij, Yemenite ground spice mixtures used primarily for soups and coffee
- Italian seasoning, a blend of rosemary, thyme, basil and oregano
- Kaala masala, black spice blend used in the Indian subcontinent
- Kanda Lasun masala, a hot spice blend with sun-dried red chillies, garlic and onion with coconuts and other spices, mainly used in the southwestern part of the Indian peninsula
- Khmeli suneli, a blend used in Georgia and the Caucasus region
- Lemon pepper
- Mitmita, a blend of African birdseye chili peppers, cardamom, cloves and salt
- Mixed spice or pudding spice, a British blend of cinnamon, nutmeg, allspice, and other spices
- Montreal steak seasoning, a seasoning mix for steaks and grilled meats
- Mulling spices, a European spice mixture of cinnamon, cloves, allspice, nutmeg and dried fruit
- Old Bay Seasoning
- Panch phoron, a Bengali five-spice blend of whole fenugreek, nigella, fennel, cumin, and mustard or radhuni seeds
- Poultry seasoning, an American blend of predominantly sage, with savory, thyme, marjoram, rosemary, and in some cases celery seed, onion powder, nutmeg or other seasonings, used when cooking chicken or turkey
- Pumpkin pie spice, an American blend of cinnamon, clove, nutmeg, and allspice
- Quatre épices, a French blend of ground pepper, cloves, nutmeg and ginger
- Ras el hanout, a North African blend that includes cinnamon and cumin among other spices
- Sambar powder, a South Indian blend of corriander seeds, cumin seeds, dry red chillies, fenugreek seeds, lentils etc.
- Seasoned salt, a blend of table salt, herbs, spices, other flavourings
- Sharena sol, a Bulgarian mixture of summer savoury, paprika and salt, with other optional ingredients
- Shichimi, a mix of ground red chili pepper, Japanese pepper, roasted orange peel, black and white sesame seed, hemp seed, ground ginger and nori
- Taco seasoning
- Tandoori masala, South Asian spice blend for tandoor-cooked meats
- Upama masala, Indian spice blend for upama

- Vadouvan
- Za'atar, both an individual herb and a blend of that herb with sesame seeds and sometimes dried sumac

CHECK YOUR PROGRESS

Describe a spice mix.
Describe a Masala.
List at least 5 spice mixes used in Indian cuisine.
List at least 5 spice mixes used in International cuisine.

3.03 VARIOUS TYPES OF DRY AND WET MASALAS

3.03.01 Plain Masala

Ingredients	**For 100**
Coriander	**340 g**
Red chili	**115 g**
Turmeric	**30 g**
Cumin	**15 g**
METHOD	**You have to roast all the ingredients and make fine powder.You may grind it into paste or powder**

3.03.02 Garam Masala

Ingredients	
Cardamom	15 g
Cloves	30 g
Cinnamon	30 g
Peppercorn	40 g
METHOD	You have to dry all the ingredients and make fine powder.

3.03.03 Pulao Masala

Ingredients	
Cardamom	15 g
Cloves	15 g
Cinnamon	15 g
Peppercorn	15 g
Bay Leave	15 g
Badyani (Chakra Phool aka star anise)	15 g
METHOD	You may use whole or crushed and tied in a muslin bag for use.

3.03.04 Curry Powder

Ingredients	**For 100**
Coriander	340 g
Cloves	30 g
Cinnamon	
Peppercorn	30 g
Red chili	115 g
Turmeric	30 g
Fennel	
METHOD	You have to roast coriander, red chili and turmeric and make powder of all ingredients and then sieve and use when required.

3.03.05 Curry Powder (Hot)

Ingredients	
Coriander	340 g
Cloves	10 g
Cinnamon	5 g
Peppercorn	60 g
Red chili	115 g
Cumin	15 g
Cardmom	5 g
Mustard	30 g
Caraway seed	15 g
Gingelly seed	30 g
Poppy seeds	30 g
Split Bengal gram	15 g
METHOD	You have to dry and make fine powder of all ingredients and then sieve and use when required.

3.03.06 Curry Powder (Mild)

Ingredients	
Coriander	300 g
Cloves	2 g
Cinnamon	3 g
Peppercorn	3 g
Red chili	30 g
Fennel	5 g
Turmeric	15 g -20 g
METHOD	You have to either roast lightly or dry in the sun the red chili and then grind all to make fine powder of all ingredients and then sieve and use when required.

3.03.07 Curry Powder (Chennai).

Ingredients	
Dry Chilli	1.5 kg
Coriander	2 kg
Split red gram	115 g
Split Bengal gram	115 g
Split black gram	115 g
Cumin	115 g
Mustard	1 tbsp
Fenugreek	1 tsp
Pepper	115 g
Asafoetida	A pinch
Parboiled rice	115 g
Turmeric	1 tsp
Curry leaves	**1 tsp**
METHOD	You have to dry all under sun roast dry all except chili (roast it different way). You should roast chili separately and make fine powder of all ingredients (chili be ground separately) and then sieve and use when required but certainly within one year.

3.03.08 Curry Powder (Maharashtra)

Ingredients	
Coriander	60 g
Fenugreek	10 g
Bengal gram	10 g
Peppercorn	10 g
Whole wheat	10 g
Cumin	10 g
METHOD	You have to roast and make fine powder of all ingredients and then sieve and use when required.

3.03.09 Curry Paste (East Indian)

Ingredients	
Coriander	6 tbsp
Fennel	1 heaped tsp
Cloves	1 heaped tsp
Turmeric	1 heaped tsp
Cumin	1 heaped tsp
Fenugreek	1 heaped tsp
Black Pepper	1 heaped tsp
Mustard seed	1 tsp
Garlic	3 cloves
Onion (large)	1
Red Pepper	As per taste
METHOD	You have to grind Turmeric first and keep adding

	water to make a stiff paste and then add other ingredients by degrees grinding finely. If you have to use it after a day, do not include onion, garlic and red Pepper.

3.03.10 Dhana Jeera Powder

Ingredients	
Coriander	1kg
Cumin	200 g
Badyani (Chakra Phool aka star anise)	100 g
Mustard seed	100 g
Red Chilli	100 g
Fenugreek seed	50 g
Bay Leaf	50 g
Cinnamon	75 g
Cloves	30 g
Saffron (nag kesar)	75 g
Cardamom	30 g
Nutmeg	5
Mace	30 g
Poppy seed	75 g
Oil	30 ml
METHOD	You have to apply oil to mustard seeds then put in sun for 2 days. After that (on third day) you have to roast and make fine powder of all ingredients and then mix it with mustard powder then pass it through a sieve and use when required.

3.03.11 Sambhar Masala (Parsi Cuisine)

Ingredients	
Fenugreek powder	150 g
Mustard powder	100 g
Turmeric powder	25 g
Asafetida	10 g
Salt	100 g
Chili powder	300 g
Oil	100 ml
METHOD	You have to mix Fenugreek . Mustard , Turmeric, Asafoetida and salt add to the hot oil and raost. After it has been roasted, remove from fire and add Chilli powder, mixing well and use when required.

3.03.12 Sambar Powder

Ingredients	
Coriander	300 g
Split red gram	100 g
Split Bengal gram	50 g

Split black gram (white)	30 g
Pepper whole	30 g
Fenugreek	10 g
Red chilli whole	250 g
Mustard	15 g
Turmeric root	2
Asafoetida	15 g
Dry coconut	250 g
Gingelly seed	250 g
METHOD	You have to clean all ingredient except for red chili dry them in sun. You then remove stems of red chili and roast it on tava with very little oil and make fine powder of all ingredients and then sieve and use it with salt to taste when required.

3.03.13 Goda Masala

Ingredients	
Coriander	500 g
Cumin	250 g
Dry coconut	250 g
Gingelly seed	250 g
Chili powder	50 g
Turmeric	50 g
Asafoetida	20 g
Cinnamon	20 g
Cloves	10 g
Salt	As per taste
METHOD	You have to roast and make fine powder of all ingredients and then sieve and use when required.

3.03.14 Rasam Masala

Ingredients	
Coriander	300 g
Pepper	100 g
Split Bengal gram	25 g
Split red gram	75 g
Cumin	1 tsp
Turmeric	1 small piece
Red chili	25 g
METHOD	You have to dry and make fine powder of all ingredients and then sieve and use when required.

3.03.15 Meat Masala

Ingredients	
Coriander	250 g
Red chili	100 g
Cumin	5 g
Fennel (saunf)	2 g

Turmeric	10 g
Pepper	10 g
Cloves	2 g
Cinnamon	5 g
METHOD	You have to roast red chili and coriander separately and then add cumin then remove from heat. You add pepper, turmeric, cloves, cinnamon and fennel and mix well and make fine powder of all ingredients and then sieve and pack in bottle to use when required.

3.03.16 Panch Phoran

Ingredients	
Mustard seed	1 tsp
Cumin seed	2 g
Onion seed	¼ tsp
Fenugreek seed	¼ tsp
Fennel (saunf)	1 tsp
METHOD	You have to mix all together and keep in a bottle to use when required.

3.03.17 Chat Masala (Rajasthan)

Ingredients	
Dry mango powder	All items as per your taste
Lime juice	
Coriander leaves	
Green chilli with a dash of chili powder	
METHOD	You have to make fine powder of all ingredients and then sieve and use when required.

3.03.18 Chat Masala (Gujrat)

Ingredients	
Dry mango	150 g
Rock salt	
Black salt	120 g
Common salt	
Cumin	75 g
Black pepper	75 g
Coriander	30 g
Chili	30 g
Dry ginger powder	25 g
Pomegranate seed (anar dana)	20 g
Tamarind	20 g
Ajwain	10 g
Asafetida	5 g
cloves	5 g
METHOD	You have to make fine powder of all ingredients and then sieve and use when required.

3.03.19 Tea Masala

Ingredients	
Pepper	50 g
Dry Ginger	50 g
Cardamom	20 g
Cinnamon	10 g
Cloves	10 g
Nutmeg	Half piece
METHOD	You have to make fine powder of all ingredients and then sieve and use when required.

3.03.20 Red Masala (Peri Peri Masala)

Ingredients	
Vinegar	Quantity sufficient
Ginger	50 g
Garlic	50 g
Coriander seed	5 g
Cinnamon	5 g
Cardamom	5 g
Cloves	5 g
Black peppercorn	5 g
Red chili (peri peri)	200 g
Mace	5 g
METHOD	You have to make paste with vinegar (don't use water at all) of all ingredients and then sieve and use when required.

3.03.21 Vindaloo Masala

Ingredients	
Vinegar	Quantity sufficient
Mustard seeds	5 g
Cumin	5 g
Red chili	10 g
Garlic	½ pod
Ginger	5 g
Onion small	50 g
METHOD	You have to grind all ingredients together in vinegar and make fine paste of and then sieve and use when required.

CHECK YOUR PROGRESS

Describe methods of preparation for Plain masala
Explain how garam masala is prepared.
Elaborate how Pulao masala is made.

Discuss the process of making Curry Powder.

Describe methods of preparation for Curry Powder (Hot)
Explain how Curry Powder (Mild) is prepared.
Elaborate how Curry Powder (Chennai)is made.
Discuss the process of making Curry Powder (Maharashtra).

Describe methods of preparation for Curry Paste (East Indian).
Explain how Dhana Jeera Powder is prepared.
Elaborate how Sambhar Masala is made.
Discuss the process of making Sambar Powder

Describe methods of preparation for Goda masala
Explain how Rasam masala is prepared.
Elaborate how Meat masala is made.
Discuss the process of making Panch Phoran

Describe methods of preparation for Chat Masala (Rajasthan)
Explain how Chat Masala (Gujrat) is prepared.
Elaborate how Tea masala is made.
Discuss the process of making Red masala
Elaborate how Vindaloo masala is made.

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3.04 MOST COMMON PASTES USED IN INDIAN COOKING

(http://www.yourarticlelibrary.com/home-science/cooking-home-science/list-of-14-most-common-pastes-used-in-indian-cooking/86804)

List of fourteen most common pastes used in Indian cooking:- 1. Ginger paste 2. Garlic paste 3. Cashew paste 4. Coconut paste 5. Poppy seeds paste 6. Tamarind pulp 7. Red chilli paste 8. Char magaz paste 9. Almond paste 10. Chironjee seed paste 11. Spinach paste 12. Masala paste 13. Boiled onion paste 14. Fried onion paste.

3.04.01. Ginger paste:

This paste is made from fresh ginger. Ginger is first scrapped to remove skin and then washed so as to remove dirt. Then it is cut to small pieces so that it can be ground easily into a paste in a mixer.

Use and Storage:

This paste can be used in many ways. It can be used as base for curries and even for marination of kebabs. It is normally used in conjunction with garlic paste and both together make ginger-garlic paste—60 per cent garlic and 40 per cent ginger is good for this paste. Sometimes, only ginger juice is used to flavour the curries. It can be stored for a week under refrigerated conditions.

3.04.02. Garlic paste:

This paste is made from peeled garlic in a grinder along with some water so as to get smooth texture. Some Mughlai dishes use fried garlic paste. This can be made by frying the garlic until golden brown and then grinding into a paste.

Use and Storage:
This is widely used in curries and gravies along with the ginger paste. It can be used alone when the dish is to be flavoured only with garlic. It is also used along with ginger in marinating kebabs. It can be stored for a week in a refrigerator.

3.04.03. Cashew paste:

To make this paste, cashew nuts are soaked in hot water or left overnight to soften. It is then ground in a mixer to get a smooth paste. Some recipes call for brown cashew paste and in this case the cashews are deep fried until golden brown and then ground to a paste.

Use and Storage:
It is used as an ingredient in kebabs to enrich them. It is also used in gravies to provide thickening and base. This paste can be used for creating desserts such as kaju ki burfi. This paste is quite perishable and should be made fresh and stored in a refrigerator. The fried paste has a better shelf life than the raw one.

3.04.04. Coconut paste:

The coconut is cracked open and the fleshy part is removed from the shell. Then the skin is scrapped off and the coconut is grated. This can also be done by using coconut scraper. It is then put in the blender to make paste. Coconut water can be added to get a smooth paste.

Use and Storage:
This is used as a base for gravies and curries and can be used for making chutney. It is quite perishable and should be made fresh and stored in a refrigerator and made once in two days.

3.04.05. Poppy seeds paste:

Poppy seeds are first soaked in warm water for 30 minutes or in room temperature water overnight. It is then ground into a paste. It is easier to grind on sil batta as it becomes difficult to do smaller quantity in electric blender because of the small size of the seed. It can be done in a grinder if the quantity is more.

Use and Storage:
This is used as a base for gravies and curries and is used as a thickening agent. It also provides flavour to curries, for example, aloo posto from Bengal. This is also highly perishable and should be stored in a refrigerator and made fresh once in two days.

3.04.06. Tamarind pulp:

This is not a paste in real terminology as it is not ground. But it is a paste which we get by soaking tamarind in water for over an hour and then taking out the pulp. The pulp thus obtained is strained through sieve to remove unwanted particles.

Use and Storage:
This is used as a souring agent in curries and also provides thickening. It is widely used to make chutneys and pickles too. It can be stored for a month in a refrigerator.

3.04.07. Red chilli paste:

To make this paste, whole red chillies are cleaned of any superficial dirt. The stalks are removed and the chillies are deseeded. The chillies are soaked in warm water or boiled with a little vinegar, which

helps in the deepening of the red colour. When the chillies become soft, they are ground into a fine paste. The paste can be cooked in oil until a deep red colour is obtained and the oil starts to float on top. Frying of chilli paste helps to remove the raw taste and tones down the hotness of the chilli and increases the shelf life, garnish a curry.

Use and Storage:
Red chilli paste is used for marinating and flavouring kebabs to give them a deep red colour. It is also added to curries for the same reason. Since the job of red chilli paste is mainly to provide colour to the dish, it is advisable to use milder chillies which are deep red in colour such as Kashmiri chillies. This paste can be stored for over a month if kept in the refrigerator with oil floating on top. The chilli oil can be used to.

3.04.08. Char magaz paste:

This is a combination of four seeds and hence, the name char magaz. Squash seeds, melon seeds, cucumber seeds, and pumpkin seeds are soaked in water till they soften and then ground into a fine paste.

Use and Storage:
This paste is used as a thickening agent in white gravies such as kormas and shahi gravy. This is also highly perishable and should be stored in a refrigerator and made fresh once in two days.

3.04.09. Almond paste:

This paste is made from skinless almonds. The skin is removed by blanching the almonds or soaking them in water overnight. Soaking makes the nuts softer and easier to grind.

Use and Storage:
This paste is used for thickening some of the exotic gravies and also used a base to make badaam halwa—an Indian dessert, where the paste is cooked with ghee and sugar. This is also highly perishable and should be stored in a refrigerator and made fresh.

3.04.10. Chironjee seed paste:

Chironjee is a seed of a nut found in a fruit that abundantly grows in Chattisgarh region of India. Also known as cudapa almond in English, this seed is extensively used as a thickening agent.

Use and Storage:
This paste is used as a thickening agent in white gravies such as kormas and shahi gravy. It is also used as an ingredient in kebabs. It is highly perishable and should be stored refrigerated and made fresh once in two days.

3.04.11. Spinach paste:

Boiled and refreshed spinach is ground to a paste and is kept as a basic mise en place in the Indian kitchen.

Use and Storage:
This paste is commonly used with other gravies such as onion tomato masala to make hariyali gravy (refer to chapter 27) or the famous saag gosht—lamb cooked with spinach.

3.04.12. Masala paste:

Various types of wet masalas discussed above fall into this category of paste.

Use and Storage:
It is used in marination, curries, grills, etc.

3.04.13. Boiled onion paste:

Onions are boiled with khada masala and a small amount of vinegar till soft. This is then ground into a paste.

Use and Storage:
The boiled onion paste is used as a base for light coloured gravies such as Mughlai, yellow, and white gravies, etc. Boiled onion paste can keep well up to a week if stored in a refrigerator.

3.04.14. Fried onion paste:

Thinly sliced onions are deep-fried until brown and ground into a paste. If a liquid needs to be added to make a paste, yoghurt has to be used.

Use and Storage:
This is used as a base for curries and gravies. It is also used as an ingredient in kebab mix.

CHECK YOUR PROGRESS

Explain the features, use and storage considerations for Ginger paste
Discuss the features, use and storage considerations for Garlic paste
Elaborate the features, use and storage considerations for Cashew paste
Describe the features, use and storage considerations for Coconut paste

Explain the features, use and storage considerations for . Poppy seeds paste
Discuss the features, use and storage considerations for Tamarind pulp
Elaborate the features, use and storage considerations for Red chilli paste
Describe the features, use and storage considerations for Char magaz paste

Explain the features, use and storage considerations for Almond paste
Discuss the features, use and storage considerations for Chironjee seed paste
Elaborate the features, use and storage considerations for Spinach paste
Describe the features, use and storage considerations for Masala paste

Explain the features, use and storage considerations for Boiled onion paste
Discuss the features, use and storage considerations for Fried onion paste

3.05 PURCHASING AND STORING CONSIDERATIONS

3.05.01 Purchasing the spices

(http://www.simplebites.net/spices-101-what-you-need-to-know-about-buying-spices/)
Here are my purchasing tips for stocking your pantries and spicing up your life – through food.

Stay Far Away from Typical Grocery Store Spices

Products on the shelves of your average grocery chain my have been there for a year or more, and they probably sat in a warehouse up to a year before that. Since the average shelf life of ground spices maxes out around six months, chances are you're buying stale spices.

Also, these spices are generally very poor quality and may contain nasty contaminants, which we'll look at in a minute.

Purchase Whole Spices

Purchase whole spices and grind them yourself to retain maximum potency and ensure a fuller flavor.

Whole spices will stay fresher, longer. Since ground spices have such a short shelf life, chances are every ground spice in your cabinet right now is past it's prime.

You know what you are getting with whole spices. Ground spices may have other ingredients such as salt, rice or flour mixed in and FDA regulations do not require suppliers to list these add-ins as ingredients. Also, ground spices are not required to be free of contaminants.

Buy the Best Possible Spices You Can Afford

Cheap spices are cheap for a reason. The health regulations for ground spices are lax, with the ASTA (American Spice Trade Association) cleanliness specifications stating that "…it is not possible to grow, harvest, and process crops that are totally free of natural defects". *What, so let's just grind them in and sell them? Pretty much.

What are these 'defects'? Well if you really want to know, a few of them are mold, exctreta (yep, that's poo), dead insects, rat hairs, wire, string and a list of other 'foreign matter'.

What percentage of this foreign matter may be in your pre-ground spices? It's shocking, but up to 20% for some is still considered "acceptable". The average is much less, but still…. Ick.

So what can you do to source better spices?

Go to Ethnic Markets. Often ethnic markets have good quality whole spices at affordable prices. They are selling spices that are used regularly and are re-stocked much faster than an average grocery store where spices may sit for much longer. Of course ethnic markets can sell poor quality spices as well, but talk to the staff. Smell the spices and buy a small amount to try at home to see if you like them.

Source a local spice merchant. These spices shops nearly always guarantee quality and freshness. The best part? You can usually chat with the staff about how to incorporate their products into your cooking. Some may even have recipe cards to hand out.

Avoid gourmet shops selling regular spices at inflated prices. It happens plenty. If you've been to your local ethnic market and/or specialty spice merchant and experienced the real thing, you can usually just use your eyes and nose to identify the frauds. Most spices are incredibly pungent, and should never smell musty.

Buy Small Amounts of Spices at a Time

Spices are not the ingredients to be buying bulk for your home kitchen because they do go stale. Unless you are a very active cook and are heavy-handed with the spices, I wouldn't recommend buying bulk spices.

Remember, if you're buying good quality spices, you won't need to use as much for cooking as they will be much more potent than standard grocery store fare. A little goes a long way.

Final thought: When You Can, Grow your Own

The best solution for sourcing dried herbs is to grow your own! Or buy from a friend or family member who has a garden. Hang bundles of fresh herbs upside down to dry, then fill mason jars with their fragrant leaves. Stored properly (which we'll talk about next week) these herbs will last all winter.

3.05.02 Storing Spices

(http://jewelpie.com/25-smart-ways-to-store-herbs-and-spices/)

Considering the amount of herbs and spices in an average Asian kitchen, storing them systematically is a challenge. Here are some smart ideas on how to store and label your collection of herbs and spices.

1. Chalkboard paint

Put spices in see through jars and write labels on top of them for easy identification. We love how the chalkboard paint is used to label them.

Fig 3.01: Put spices in see through jars and write labels on top

2. Tic-tac container

Store herbs and spices in small tic-tac containers. Great to bring along to campings!

Fig 3.02: Tic-tac container

3. Under the shelf pull-out rack

Keep herbs and spices away from sight in a smart under the shelf pull-out rack.

Fig 3.03:Under cabinet spice rack

4. Magnetic spice rack behind shelf door

Save space and keep spices organized by creating a magnetic spice rack behind shelf door.

Fig 3.04 : Magnetic spice rack behind shelf door

5. Magnetic spice rack on fridge

Lacking cupboard space to store your spices? How about sticking them on the fridge?

Fig 3.05: Magnetic spice rack on fridge

6. Test tube

Keep spices in test tubes and write label on the cork. Now experimenting in the kitchen sounds just right!

Fig 3.06: Test tubes used in storing spices

7. Angled spice drawers

Spices angled in 45 degrees enable you to identify them easily.

Fig 3.07: Angled spice drawer

8. Turning spice rack on the counter

If installing cabinets does not work for your kitchen, get a turning spice rack and label them for easy identification.

Fig 3.08: Turning spice rack on the counter

9. Spice bottle with hanger

We like how the jar of spices are hung on the wall- making storage like work of art.

Fig 3.09: Spice bottle with hanger

10. Magnetic honeycomb jar

Hexagon jar of spices when stuck on the magnetic board looks like honeycomb.

Fig 3.10: Magnetic honeycomb jar

11. Over the door fabric organizer

Save cabinet space by using an over the door shoe rack organizer to keep your herbs and spices.

Fig 3.11: Over the door fabric organizer

12. Pull-out spice drawer

A vertical pull-out spice rack creates an incredible amount of storage space.

Fig 3.12: Pull-out spice drawer

13. Door spice rack

A typical door spice rack behind cabinet door keep them neat and convenient.

Fig 3.13: Door spice rack

14. Spice rack at the end of an island

Do not waste the space at the end of the island. Use it to keep spices in a shallow kitchen cabinet.

Fig 3.14: Spice rack at the end of an island

15. Decorative wall spice cabinet

Arrange colorful herbs and spices in this decorative open cabinet. How lovely!

Fig 3.15: Decorative wall spice cabinet

16. Hanging rack inside the cabinet drawer

Use a hanging rack inside the cabinet door for holding spices

Fig 3.16: Hanging rack inside the cabinet drawer

17. Soft drink crate

A soft drink crate turned into a wall spice cabinet.

Fig 3.17: Soft drink crate

18. Spice holder on metal rod

If you have no more wall or cabinet space, consider hanging a spice holder over the metal rod.

Fig 3.18: Spice holder on metal rod

19. Under the shelf magnetic spice rack using stainless steel ruler

Make use of every inch of your kitchen. If space a premium in your kitchen, you might like an under-shelf magnetic spice rack. Stick bottles of herbs and spices on a stainless shell ruler!

Fig 3.19: Under the shelf magnetic spice rack using stainless steel ruler

20. Lazy susan inside a deep cabinet

Never search for that one spice in deep cabinet- keep them on a lazy susan.

Fig 3.20: Lazy susan inside a deep cabinet

21. Cabinet behind the door

Do not waste the space behind the pantry door. Build a full-length cabinet to keep herbs and spices.

Fig 3.21: Cabinet behind the door

22. Mop holder as spice holder

Use a mop holder to store spices on the inside of a cabinet door. (no more searching through the deep cupboard for that one spice!) Ingenious!!!

Fig 3.22: Mop holder as spice holder

23. Frame magnetic chalkboard

A visible and beautiful spice storage on a framed magnetic board.

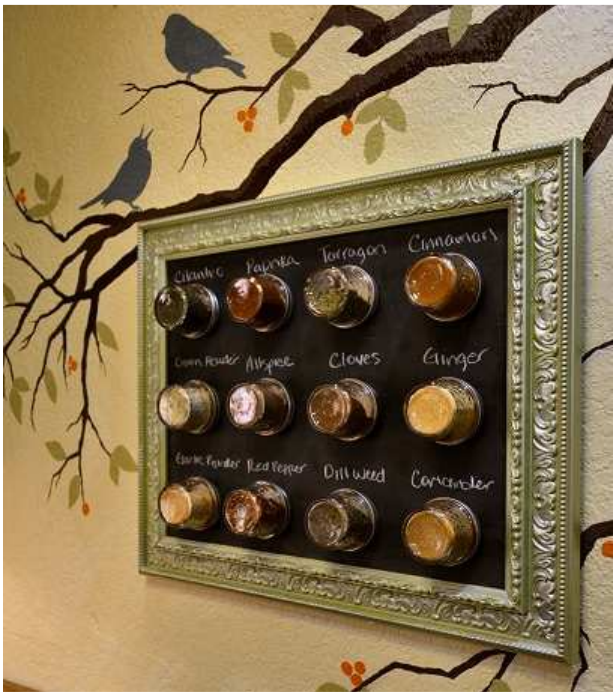

Fig 3.23: Frame magnetic chalkboard

CHECK YOUR PROGRESS

Describe the arrangement of "Cabinet behind the door" and elaborate its important features
Elaborate on the arrangement "Mop holder as spice holder" with the salient features and advantages
Discuss the arrangement of "Frame magnetic chalkboard"and elaborate its important features
Describe the arrangement of "Chalkboard paint" and elaborate its important features
Elaborate on the "Tic-tac container" arrangement with the salient features and advantages
Discuss the arrangement of "Under the shelf pull-out rack" and elaborate its important features
Explain the arrangement of "Magnetic spice rack behind shelf door" with clear mention on its specific features and advantages.
Describe the arrangement of "Magnetic spice rack on fridge" and elaborate its important features
Elaborate on the "Test tube" arrangement with the salient features and advantages
Discuss the arrangement of "Angled spice drawers" and elaborate its important features
Explain the arrangement of "Turning spice rack on the counter" with clear mention on its specific features and advantages.
Describe the arrangement of "Spice bottle with hanger" and elaborate its important features
Elaborate on the "Magnetic honeycomb jar" arrangement with the salient features and advantages
Discuss the arrangement of "Over the door fabric organizer" and elaborate its important features
Explain the arrangement of "Pull-out spice drawer" with clear mention on its specific features and advantages.
Describe the arrangement of "Door spice rack" and elaborate its important features
Elaborate on the "Spice rack at the end of an island" arrangement with the salient features and advantages
Discuss the arrangement of "Decorative wall spice cabinet" and elaborate its important features
Explain the arrangement of "Hanging rack inside the cabinet drawer" with clear mention on its specific features and advantages.
Describe the arrangement of "Soft drink crate" and elaborate its important features
Elaborate on the "Spice holder on metal rod" arrangement with the salient features and advantages
Discuss the arrangement of "Under the shelf magnetic spice rack using stainless steel ruler" and elaborate its important features
Explain the arrangement of "Lazy susan inside a deep cabinet" with clear mention on its specific features and advantages.

3.06 GRAVY PREPARATION

3.06.01 Spicy chicken gravy:

(https://www.wikihow.com/Make-Chicken-Gravy)

- 300g chicken
- 1 onion
- 1 tomato
- 3 cloves, whole
- 2 sticks of cinnamon
- 2 cardamom pods
- Ginger and garlic paste
- 3 teaspoons garam masala powder
- 3 teaspoons chicken masala powder
- 3 green chillies
- 3 teaspoons coriander (cilantro) powder
- 1 teaspoon pepper

- Coriander (cilantro) leaves, fresh
- Mint leaves, fresh
- 8 teaspoons curd
- 200g oil

Heat 200 grams of oil in a pan. Add the cut onions and the spices, ginger and garlic powder, green chillies.

Add the tomatoes. After the tomatoes are thoroughly fried, add the cut chicken and fry them. Then, add coriander powder and salt.

Let the chicken cook well with the water in the paste and the water from the tomato.

Reduce the flame and let the chicken cook for 40 minutes.

Add the garam masala and chicken masala powder, red chillies.

Add the curd and bring it to a boil and close the stove.

Add the mint leaves and coriander leaves .

Serve hot with rice and some chapati.

3.06.02 Mushroom Gravy

(https://www.wikihow.com/Make-Mushroom-Gravy)

Mushrooms are very nutritious foods, providing B vitamins, copper and potassium. They are free of fat and low in calories. Mushrooms are known for their savory flavor and versatility. They can be added to many foods including salads, stuffing, pizza, pasta and rice dishes. Making mushroom gravy is a great way to add more vegetables to your meals. Just follow these steps to learn how to make mushroom gravy.

Ingredients

- 4 tbsp. (60 ml) vegetable oil
- 1/3 cup (71 ml) flour
- 2 cups (473 ml) beef broth
- 1 tbsp. (15 ml) butter
- 1/3 cup (71 ml) of chopped onion
- 1 1/2 tsp. (7.5 ml) fresh minced garlic (approximately 3 cloves)
- 1 1/2 tsp. (7.5 ml) parsley
- 1 cup (236 ml) fresh sliced mushroom or 1/2 cup (118 ml) canned mushrooms
- 1/4 cup (59 ml) dry wine
- Salt and pepper to taste
-
- Pour 4 tbsp. (60 ml) vegetable oil into a large skillet and heat to medium-high.
-
- Add 1/3 cup (71 ml) flour.

Sprinkle salt and pepper to taste.

- Stir constantly, until a thick roux is formed. Watch for the roux to become a rich tan color.
-
- Pour 2 cups (473 ml) beef broth to the mixture slowly, whisking to avoid lumps.
-

Reduce heat to medium-low and allow the mixture to simmer for approximately 5 minutes. (Be sure to stir often to keep the gravy from scorching.)

Turn the heat down to low and cover.

Allow the mixture to simmer for approximately 10 minutes, but continue to stir frequently.

Melt 1 tbsp. (15 ml) butter in another skillet.

Add 1/3 cup (71 ml) of chopped onion and 1 1/2 tsp. (7.5 ml) fresh minced garlic (approximately 3 cloves) to the melted butter.

Toss in 1 1/2 tsp. (7.5 ml) parsley and 1 cup (236 ml) fresh sliced mushroom or 1/2 cup (118 ml) canned mushrooms.

Sauté the vegetables until the onions soften and turn clear.

Pour 1/4 cup (59 ml) dry wine to the vegetables and continue cooking until the wine is reduced most of the way down.

Transfer the vegetable mixture to the beef gravy in the first skillet.

Simmer for approximately 5 minutes.

Remove from heat and serve immediately.

3.06.03 White Gravy

https://www.wikihow.com/Make-White-Gravy

Homemade white gravy is considered a staple in southern kitchens. It adds moisture and flavor to meat, chicken, bread and potatoes. Although white gravy can be made quickly and easily using prepackaged mixes, making it from scratch is relatively simple, and tends to yield a richer taste and texture. Cooks who choose to make white gravy from scratch also utilize food more efficiently, since they can mix the fat that dripped off their meat into the gravy instead of disposing of it. Basic recipes for white gravy tend to be similar to one another, but some cooks like to personalize their own white gravy recipes by adding in different combinations of seasoning.
Heat about 4 tbsp. (57 g) of butter or oil in a large, deep skillet on a stove top set to medium heat.

- For best results, cook the meat you will be serving the gravy with first. Fry it in the butter or oil, then use the leftover pan drippings as the base for your gravy. This provides extra flavor by adding small pieces of meat and leftover seasoning to the gravy. If you are preparing the gravy by itself, use unsalted butter instead of oil.

Pour in 3 cups (706 ml) of milk slowly, while constantly whisking the mixture. Continue whisking until the mix is well-blended.
Bring the gravy to a boil, then reduce the heat to medium-low.

Season the gravy to taste with salt and pepper.

- Depending on your tastes, you may add additional seasonings for enhanced flavor. Commonly added seasonings in white gravy include cayenne pepper and parsley.

Simmer the gravy over medium heat for 8 to 10 minutes. Whisk constantly, making sure to scrape the sides and bottom of the skillet to blend thoroughly and prevent any gravy from sticking or drying out.
Observe the thickness of the gravy. Cook longer if you prefer it thicker, and stir in water if you would like to thin it out.

3.06.04 Malai Kofta Gravy

https://www.wikihow.com/Cook-Malai-Kofta

Ingredients
Kofta:

8 oz (225g) paneer

2 potatoes, mashed

1/2 tsp salt

1/4 tsp garam masala

1 tbsp powdered milk

1 1/2 tbsp corn flour

1 tbsp flour

Additional flour for rolling

2 cups oil

Gravy:

1 cup Masala

2 1/4 cup water

1/2 pint heavy cream

1/2 tsp salt

1/4 tsp red chili powder

1/4 tsp garam masala

1 tsp sugar

2 tbsp chopped coriander

Bread:

Either a naan or a tandoori roti

Making the Kofta

Strain the water from the paneer. This may take a few hours, so prepare enough in advance.

Mix the paneer. Mix it with all of the ingredients specified in the kofta section of the ingredients list above, except for the oil and additional flour for rolling.

Shape the mixture into balls. Roll them in about 3 tbsp. of flour.

Heat the oil in a deep frying pan. Heat until the consistency of the oil is similar to that of water. Fry 3 or 4 balls at a time until they are a golden brown. Remove and place on kitchen paper to soak up some of the fat.

Sauce

Combine the masala and water in a pan. Cook at medium high heat.

Add the remaining ingredients. When the masala mixture begins to boil, stir in the rest of the ingredients specified in the gravy section of the ingredients list, except for the chopped coriander.

Stir the mixture. Then reduce the heat to low and cook for 10 minutes. Add the kofta (paneer balls) and turn off the heat.

Stir the mixture. Then reduce the heat to low and cook for 10 minutes. Add the kofta (paneer balls) and turn off the heat.

3.06.05 Onion Gravy

https://www.wikihow.com/Make-Onion-Gravy

Ingredients

Serves 4

- 2 tbsp (30 mL) butter
- 2–3 onions, thinly sliced
- 3 tbsp (45g) flour
- ¼ cup (60 mL) red wine
- 1 cup (240 mL) broth (from meat, vegetable, or mushroom stock)
- Salt and pepper to taste
- 3 garlic cloves, finely chopped (optional)
- 1 tsp (5 mL) dried rosemary, or 1–2 sprigs of fresh rosemary leaves (optional)

Onion Gravy

- Melt the butter in a large saucepan with a heavy bottom. Cook over medium heat. Wait until it foams, then subsides. (Many cooks use a mix of butter and vegetable oil instead, thinking this raises the smoke point. This is not true, but it does dilute the burnt flavor.)
-

- Add the onion, then cook until light brown. Add garlic and dried rosemary at this point if you want extra flavors. Cook over medium-low for roughly 5–8 minutes, until golden brown. (Adding a pinch of salt draws out moisture. This leads to better flavor, but cooking will take longer)
- Add a splash of water if it gets dry.
-
- Cover and caramelize over low heat. Check on them and stir occasionally to prevent sticking. After about 10 minutes, the onions should be deep brown, but not black, and so soft they are almost falling apart.
-
- Whisk in flour and cook briefly. Bring the heat back up to medium. Stir and cook for one or two minutes to combine the flour.
-
- Simmer with red wine. Pour in the red wine and let it simmer for a couple minutes. An ordinary table wine will taste much better than cooking wine. (Select a variety that pairs well with the dish accompanying the gravy. A full-bodied wine is a good choice for red meat dishes. An earthy wine works well with root vegetables.)
-
- Add stock and let reduce. Pour in the stock of your choice. Let the gravy simmer until it's as thick as you like it. This usually takes about 5 minutes for thin gravy, or 15 minutes for thick, sticky gravy.(If you're using fresh rosemary, add it along with the stock.)
-
- Add seasonings and serve. Taste the gravy and stir in salt and pepper as desired. If you feel ambitious, stir in a small spoonful of something special. Try balsamic vinegar, mustard, worcestershire sauce, or soy sauce.

CHECK YOUR PROGRESS

Explain the method of preparation of spicy chicken gravy.
Describe the process of making mushroom gravy.
Elaborate the method of making white gravy.
Discuss the preparation of malai kofta gravy
Elaborate the method of making onion gravy

3.07 SUMMARY

In this unit we studied the various spices used in making gravies and masalas.

Spice mixes are blended spices or herbs. When a certain combination of herbs or spices is called for in many different recipes (or in one recipe that is used frequently), it is convenient to blend these ingredients beforehand. Blends such as chili powder, curry powder, herbes de Provence, garlic salt, and other seasoned salts are traditionally sold pre-made by grocers, and sometimes baking blends such as pumpkin pie spice are also available.

Masala is a South Asian term for a spice mix. A masala can be either a combination of dried (and usually dry-roasted) spices, or a paste (such as vindaloo masala) made from a mixture of spices and

other ingredients—often garlic, ginger, onions, chilli paste and tomato. Masalas are used extensively in Indian cuisine to add spice and flavour, most familiarly in chicken tikka masala and chicken curry.

We studied preparation of various masalas like plain masalas, garam masalas and others.

We also studied the various pastes used in Indian cooking: 1. Ginger paste 2. Garlic paste 3. Cashew paste 4. Coconut paste 5. Poppy seeds paste 6. Tamarind pulp 7. Red chilli paste 8. Char magaz paste 9. Almond paste 10. Chironjee seed paste 11. Spinach paste 12. Masala paste 13. Boiled onion paste 14. Fried onion paste.

We studied various considerations for storing and purchasing spices. We studied the methods of preparation of Spicy Chicken gravy, mushroom gravy, white gravy, malai kofta and onion gravy.

3.08 END QUESTIONS

The following questions should help you prepare for the End Examinations. These questions are for 5 marks each and should take you 11 minutes under examination conditions.

- Describe a spice mix.
- Describe a Masala.
- List at least 5 spice mixes used in Indian cuisine.
- List at least 5 spice mixes used in International cuisine.
- Check Your Progress
- Describe methods of preparation for Plain masala
- Explain how garam masala is prepared.
- Elaborate how Pulao masala is made.
- Discuss the process of making Curry Powder.
- Describe methods of preparation for Curry Powder (Hot)
- Explain how Curry Powder (Mild) is prepared.
- Elaborate how Curry Powder (Chennai)is made.
- Discuss the process of making Curry Powder (Maharashtra).
- Describe methods of preparation for Curry Paste (East Indian).
- Explain how Dhana Jeera Powder is prepared.
- Elaborate how Sambhar Masala is made.
- Discuss the process of making Sambar Powder
- Describe methods of preparation for Goda masala
- Explain how Rasam masala is prepared.
- Elaborate how Meat masala is made.
- Discuss the process of making Panch Phoran
- Describe methods of preparation for Chat Masala (Rajasthan)
- Explain how Chat Masala (Gujrat) is prepared.
- Elaborate how Tea masala is made.
- Discuss the process of making Red masala
- Elaborate how Vindaloo masala is made.

1. Explain the features, use and storage considerations for Ginger paste
2. Discuss the features, use and storage considerations for Garlic paste
3. Elaborate the features, use and storage considerations for Cashew paste
4. Describe the features, use and storage considerations for Coconut paste
5. Explain the features, use and storage considerations for . Poppy seeds paste

6. Discuss the features, use and storage considerations for Tamarind pulp
7. Elaborate the features, use and storage considerations for Red chilli paste
8. Describe the features, use and storage considerations for Char magaz paste
9. Explain the features, use and storage considerations for Almond paste
10. Discuss the features, use and storage considerations for Chironjee seed paste
11. Elaborate the features, use and storage considerations for Spinach paste
12. Describe the features, use and storage considerations for Masala paste
13. Explain the features, use and storage considerations for Boiled onion paste
14. Discuss the features, use and storage considerations for Fried onion paste

- Describe the arrangement of "Cabinet behind the door" and elaborate its important features
- Elaborate on the arrangement "Mop holder as spice holder" with the salient features and advantages
- Discuss the arrangement of "Frame magnetic chalkboard"and elaborate its important features
- Describe the arrangement of "Chalkboard paint" and elaborate its important features
- Elaborate on the "Tic-tac container" arrangement with the salient features and advantages
- Discuss the arrangement of "Under the shelf pull-out rack" and elaborate its important features
- Explain the arrangement of "Magnetic spice rack behind shelf door" with clear mention on its specific features and advantages.
- Describe the arrangement of "Magnetic spice rack on fridge" and elaborate its important features
- Elaborate on the "Test tube" arrangement with the salient features and advantages
- Discuss the arrangement of "Angled spice drawers" and elaborate its important features
- Explain the arrangement of "Turning spice rack on the counter" with clear mention on its specific features and advantages.
- Describe the arrangement of "Spice bottle with hanger" and elaborate its important features
- Elaborate on the "Magnetic honeycomb jar" arrangement with the salient features and advantages
- Discuss the arrangement of "Over the door fabric organizer" and elaborate its important features
- Explain the arrangement of "Pull-out spice drawer" with clear mention on its specific features and advantages.
- Describe the arrangement of "Door spice rack" and elaborate its important features
- Elaborate on the "Spice rack at the end of an island" arrangement with the salient features and advantages
- Discuss the arrangement of "Decorative wall spice cabinet" and elaborate its important features
- Explain the arrangement of "Hanging rack inside the cabinet drawer" with clear mention on its specific features and advantages.
- Describe the arrangement of "Soft drink crate" and elaborate its important features
- Elaborate on the "Spice holder on metal rod" arrangement with the salient features and advantages
- Discuss the arrangement of "Under the shelf magnetic spice rack using stainless steel ruler" and elaborate its important features
- Explain the arrangement of "Lazy susan inside a deep cabinet" with clear mention on its specific features and advantages.

15. Explain the method of preparation of spicy chicken gravy.

16. Describe the process of making mushroom gravy.
17. Elaborate the method of making white gravy.
18. Discuss the preparation of malai kofta gravy

19. Elaborate the method of making onion gravy

3.09 REFERENCES

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UNIT 4 COMMODITIES AND THEIR USAGE IN INDIAN KITCHENS

Unit – 4 Commodities and their usage in Indian Kitchens: Introduction, Souring Agents, Colouring Agents, Thickening Agents, Tendering Agents, Flavoring and Aromatic Agents, Spicing Agents in Indian Kitchens

4.00 BEFORE WE BEGIN

In this unit we will study various commodities used in our Indian cuisine. We had studied various ingredients, including sweeteners, used in a kitchen in our studies of HTS101 course. We will now study the various souring agents, coloring agents, thickening agents, tendering agents, flavoring and aromatic agents, spicing agents in Indian kitchens.

As you are going to be a professional in hospitality studies, use of such commodities is one of the fundamental part of your study. Such studies may also be useful in your future course under the hospitality program which you have undertaken.

4.01 UNIT OBJECTIVES

After studying this unit you will be able to

- Describe the concept of souring agents
- Explain the concepts of coloring agents
- Explain what is meant by thickening agents
- Describe the concept of tendering agents
- Explain the concepts flavoring agents
- Explain what is meant by aromatic agents
- Describe the concept of spicing agents

4.02 SOURING AGENTS

Souring

https://en.wikipedia.org/wiki/Sourcing_agent

Souring is a cooking technique that uses exposure to an acid to effect a physical and chemical change in food. This acid can be added explicitly (for example, in the form of vinegar, lemon juice, lime juice, etc.), or can be produced within the food itself by a microbe such as Lactobacillus.

Souring is similar to pickling or fermentation, but souring typically occurs in minutes or hours, while pickling and fermentation can take a much longer time.

Some Souring Agents in Indian Cuisine

(https://food.ndtv.com/food-drinks/8-souring-agents-in-indian-cuisine-kokum-amchoor-and-more-1631580)

Much of cooking is about the balance of flavours and achieving this becomes quite complex when you look at sophisticated cuisines like different regional ones in India. A curry is hardly a generic dish many Westerners assume it to be. There are as many curries, preparations of vegetables, meats, fish, lentils in different spice combinations, as perhaps homes that cook in the country. But even if we were

to codify some of these and place them in broad classifications, it would be a mistake to use the main ingredient (jackfruit, shrimps, mutton et al) to define the preparation.

It's by now much-touted gyan that Indian curries change character every few hundred kilometres. And that we distinguish them not by their "main" ingredients but by the subtler change in spicing and more importantly souring agents. So one way to classify diverse Indian dishes could be by dividing them up according to the souring agents they use. It's hardly a foolproof method of organising a dictionary of our dishes, like the French have done, but at least it can make for things being less bewildering to the outsider who cannot cook our food by instinct.

1. Tomatoes

Tomatoes of course are all pervasive in the modern Indian kitchen today. But the generic gravies they go into are wiping out traditional, nuanced ones, where flavours were more complex and layered. Traditionally, souring agents in India have varied from region to region, dependent both on the geography and history of that region. If we have a predominance of yoghurt-based meat curries in Delhi and UP, it is clearly both because of the cow belt factor as well as because of the influence of Mughal cooking that seeped into the social and cultural fabric of this part of the country. Similarly, vinegar in Goa is a Portuguese influence.

Fig 4.01: Tomatoes

2. Kachampuli Vinegar

(http://www.clovegarden.com/ingred/so_kaachz.html)

This is the "vinegar" of the Kodava (Coorg) people in southwest India. It is made from slightly fermented juice of Gummi-Gutta fruit, simmered down to a very dark reddish-purple syrup - very sour, but also fruity. It is on hand in just about every Kodava kitchen, and sold commercially in the region, but not much elsewhere.

This is made by piling very ripe Gummi-Gutta fruit in a straining basket and setting it out over a pan for a few days until all the juice has seeped out of the fruit and into the pan. The amber juice is them put in a very deep (because it foams a lot) clay pot and simmered down until it reaches a syrup consistency. By this time it will have become a dark red-purple color. It is then put up in glass jars or bottles. Image from Coorg Shoppe (they ship internationally).

Fig 4.02: Kachampuli Vinegar

(http://www.clovegarden.com/ingred/so_kaachz.html)

But the Kachampuli vinegar used for the pandi curry in Coorg is a regional improvisation brought about by the need to preserve fruit. The Kodampuli fruit is only available in monsoon, collected in baskets and then left to break down into pulp and vinegar which can then be used in the subsequent months. This is the kachampuli vinegar that gives a distinct taste to the pork.

Other Vinegars

http://www.clovegarden.com/ingred/sours.html

Sourness is one of the basic flavors we perceive, and is caused by acidity. It can provide lightness and interest to food that would otherwise be heavy or bland - note the radical difference adding a little lemon juice to a bean soup makes. Of course sourness can also be an indicator that food is going bad - vinegars and the like are made by carefully controlled spoilage.

Vinegars are made by fermentation from many foods that have a high sugar or starch content. Fruits and other sugar sources go through a double or triple fermentation: from sugar to alcohol (by yeast) then alcohol to acetic acid (by bacteria). Starchy foods go through either malting (barley) or a starch to sugar fermentation (rice), then sugar to alcohol, alcohol to acetic acid. High grade vinegars will then be aged in wooden barrels or pottery jars to mature the flavors.

With the exception of White Distilled Vinegar, vinegars carry a distinctive flavor from the ingredients used, and are affected by the quality of those ingredients, so taste will not be uniform brand to brand.

Many health and healing claims are made for vinegars, particularly apple cider vinegar, but actual medical research seems to be pretty scarce so the evidence is all "hear-say".

Vinegars. like oils, are very important cooking ingredients and a well prepared kitchen stocks **Apple Cider**, **Rice**, **Balsamic** (Industrial), **White Distilled** and **Wine** vinegars, with others added according to individual taste and ethnicity of the cuisine.

Apple Cider Vinegar - [Aceto di Mele (Italy); Apfelessig (German)]

Made from apples fermented into hard cider, this vinegar is quite popular in the U.S. - but **beware!** Most of what tries to pass as "Apple Cider Vinegar" in the stores is nothing of the kind - look carefully and you will find it's made from white distilled vinegar with apple juice added - it's just "apple flavored". Even the leading brand, Heinz, is real in quart bottles or smaller, and fake in larger containers.

Apple cider vinegar has a large cult following among the health conscious, but little actual medical research has been done, so the health claims are called "hear-say". In any case, it's not likely to do you any harm, and many say it will help.

Cider vinegar is harsh for some applications, and its flavor may not work well with some others, and it will not be appropriate for many ethnic cuisines, especially of the tropics. Some older ethnic cookbooks in English call for cider vinegar because they presume you can't get the right kind. The most common is Heinz brand, available just about everywhere (quart size or smaller), other brands available in some locations. More flavorful cider vinegars are made in France and Italy.

Balsamic, "Industrial"

This is a cheap imitation of "True Balsamic", commonly made from wine vinegar, concentrated grape must and caramel coloring. "Industrial" has the advantage of being priced to allow actual use in food rather than as an object of worship.

White Balsamic is a version that doesn't even try to look like real balsamic. It's made of white wine vinegar and grape must with no caramel color added, and filtered to get rid of as much color from the grapes as possible. It has a Clearer taste than regular Industrials.

"Industrial" balsamic production centers around Modena Italy where the true balsamic is made. Many different formulas are used, so brands vary - just taste them and pick ones you like. Actually, "industrial" is better than "true" for many recipes, and is the most commonly used variety in Modena itself. It generally runs from $3 to $20 for 500ml.

Balsamic, "True"

Many "Balsamics" are made by more or less traditional methods but do not qualify for the special bottle. They are usually made starting with wine and must rather than just cooked must, but are given a good aging in wood barrels. Prices range from $15 to over $100 for an 8-oz (250-ml) bottle. These vinegars are often put up in fancy "gourmet" bottles, but never the "one true bottle".

Cane Vinegar
This vinegar is made wherever sugar cane is grown, but commercially exported from the Philippines,

a land where good vinegar is really appreciated. Cane juice is fermented as if to make rum, but instead of distilling, it is fermented into vinegar. Quality and flavor vary by brand.

To the left in the photo is a natural cane vinegar that is my favorite vinegar. I use it anywhere the color won't be a problem. Datu Puti brand Sukang Iloco (Native (natural) Vinegar). The ingredient list is: "Naturally fermented from sugar cane juice". The sample to the right is Datu Puti brand Sukang Maasim. Ingredients: cane vinegar, water. I suspect an unstated clouding agent is included in that vinegar - Filipinos seem to expect vinegars to be slightly cloudy. The light vinegar is harsher with a less distinct flavor compared to the dark. Both are 4.5% acidity.

Note that in the Philippines, the famous Iloco vinegar is often flavored with the leaves of samak (Macaranga), but the FDA may object to that version here as *Macaranga* are spurges, and spurges are commonly toxic. Sukang Iloco is an ingredient in Vigan Longanisa sausage as well as in many other regional recipes, and as a dip, and for medicinal purposes (disinfectant and on the forehead for fevers).

Chinese Vinegars
Chinese vinegar comes in three basic varieties, Black, Red and White. All can be made from rice, but the black may also be made from other grains. Quality variations for Chinese products are extreme. Check the ingredient labeling but be aware it is often as wrong as the grammar in the instructions you get with Chinese products. Best strategy, find a good brand and stick with it.

Black Rice Vinegar [Brown Rice Vinegar, Chinkiang Vinegar, Chekiang vinegar, Chenkong vinegar, Zhejiang vinegar] is particularly popular in southern China. Brands made in Chinkiang (Zhejiang) province are considered the best. Like Balsamic it is dark and has a deep flavor, but the taste is very different. Black vinegar is often used as a dipping sauce. Gold Plum is often recommended as the best brand of Chinkiang and is the one I use. Ingredients: glutinous rice and salt.

Ladchen Vinegar is an example of other dark vinegars. The one I have on hand, from China, is made from sorghum, barley and peas. Flavor is quite similar to the Chinkiang, but a shade lighter.

Red Rice Vinegar [Red Rice Vinegar] doesn't look a whole lot redder than the black, but the flavor is much lighter and almost spicy. It is used as a dipping sauce and in soups, with noodles and in seafood dishes. Often recommend brands are Pearl River Bridge and Koon Chun but the one in the photo is Pat Chun. Ingredients: water, glutinous rice, salt, FD&C red #40. Acidity 2.5%.

White Rice Vinegar [Rice Wine Vinegar] is similar to the Japanese and is used in stir fries, pickles and sweet-and-sour dishes. It is milder than the others and with a more delicate flavor. It is available in regular and "Gourmet Aged" grades in markets serving an East Asia community. The photo specimen is the darker "Aged" version, which I hold is worth the higher price, from Kong Yen Foods. Ingredients: rice, malt. Acidity above 6%.

Coconut Vinegar - [Sukang Niyog (Philippine)]

Coconut vinegar is used in India and Southeast Asia, including the Philippines. It is mild with a somewhat musty flavor. The photo shows a naturally fermented vinegar that has an almost smoky flavor. Ingredients: coconut water. The sample on the right has a less distinct flavor. Ingredients: natural vinegar, water, 4% acidity. Both are products of the Philippines. Coconut vinegar can be found in markets serving a Philippine community (around here there's one near every major hospital).

Date Vinegar

This vinegar is popular in the Near East, but I haven't noticed it here in Los Angeles - I'm sure it's here somewhere, I'll just have to look more carefully.

Flavored Vinegars

These are generally white or red wine vinegar with herbs and spices added to the bottle, or infusions added to the vinegar. The objective is to capture the flavors in an easily usable form. Tatragon vinegar is probably the best known. Since the flavor of tarragon doesn't survive drying, vinegar is a way to deliver that flavor when fresh tarragon isn't available. Note that there are health risks to doing these yourself, so it's generally better to purchase them. The photo sample is Heinz Tarragon Vinegar. Ingredients: distilled white vinegar, malt vinegar, spice oil (tarragon), water, 5% acidity.

Fruit Vinegars

Since vinegar can be made from anything with sufficient sugar, and since it takes on flavors from the ingredients from which it is made, the field is wide open for production of specialty vinegars. Examples are Pomegranate, Orange and Raspberry vinegars. The photo sample is Pineapple vinegar, very nice for salads

Grape Vinegar - [Raisin Vinegar]

This is wine vinegar made in Islamic countries where you'd roast in Hell for eternity if Allah saw you were making wine - but you can't make vinegar without making alcohol first. Some of it's pretty good wine vinegar too. Somehow the Turks got a special dispensation from Allah because they make and consume alcoholic beverages (either that or they're all going straight to Hell with the rest of us), but for the rest of Islam it's forbidden.

This vinegar is generally made in a single multi-stage process so the makers can't be accused of making wine. Note that during the (long, long passed) height of Islamic culture, wine was made and enjoyed in countries where you'd be flogged or beheaded for it today. The photo specimen is from Syria. Ingredients: grape vinegar, water. As to the strength, the label says "Natural %", obviously not designed by an English speaking person.

Kachampuli - [Kaachambuli]

This is the "vinegar" of the Kodava (Coorg) people in southwest India. It is made from slightly fermented juice of Gummi-Gutta fruit, simmered down to a very dark red-purple sour, but also fruity, syrup. It is on hand in every Kodava kitchen, and sold commercially in the region, but not much elsewhere.

Lemon Vinegar - [Lemon Sirkesi]

Yes, even lemons have enough sugar to ferment into vinegar. This product definitely has a lemon flavor, but also a vinegar flavor. The photo sample was made in Turkey. Ingredients: lemon vinegar, acid regulator (citric acid), lemon emulsion, antioxidant (sodium metabisulfite), natural lemon flavor.

Malt Vinegar

This is a premier dipping vinegar (as in English fish and chips) because its effect is less harsh than other common vinegars. I used to use a lot of it before I settled on the naturally fermented Sukang Iloco, but I still use it for specific recipes. Malt vinegar is properly made by malting (sprouting) barley (and perhaps other grains) to turn the starches to sugar. The malt is then fermented into ale, and the ale fermented into vinegar. Here in Los Angeles very few markets carry it, but many restaurant supply stores do - to supply British style restaurants. The photo sample, from Smart and

Final, boasts ingredients: malt vinegar, water, 5% acidity.

Palm Vinegar - [Sukang Paombong (Philippine)]

Sukang Paombong is another of the fine vinegars made in the Philippines. with a rich flavor and 4.5% acidity. Ingredients: fermented nipa palm sap, water, cloudifier. Interesting, though "cloudifier" is mentioned, it is much less cloudy than other Philippine vinegars that do not declare one.

Rice Vinegar - [Rice Wine Vinegar]

In the U.S. this generally means Japanese or Japanese style white rice vinegar of "Industrial" quality (see also Chinese Vinegars for red, black and white versions). Rice vinegar is made by fermenting rice into beer which ferments into vinegar (though it's a single continuous process that doesn't make drinkable sake).

In Japan top grade rice vinegar is made in small batches in clay jars, but that commonly available in the U.S. is an undistinguished industrial product. It's good enough for many common uses and has the advantage of being affordable by mortals - but the photo specimen is Aged Chinese white rice vinegar which I much prefer (the common product is lighter in color).

White Distilled

This product is made from grain alcohol (cheap vodka), distilled for purity and diluted with water to 5% acetic acid. It's purely an industrial product, but a good choice for many uses (in the water for poaching eggs, for instance) because of it's purity, lack of flavor and very low price. How cheap depends on brand, but since it's all just 5% acetic acid in distilled water, there really isn't much room for brand quality differentiation. White Distilled Vinegar also finds a wide variety of household cleaning and deodorizing uses.

Wine Vinegars

As the name implies, these vinegars are made from wine. Naturally, they vary greatly with the quality of the wine used and the process. Once again we have that contrast between traditional (good wine and aged in oak barrels) and industrial production, and this is reflected in the price. High grade wine vinegars are made in Italy, Spain and in the wine growing regions of California. Many California wine vinegars are "artisanal" single varietal products so tend to be a bit upscale, pricewise. I've seen none from France around here. I'm sure

they fetch a good price over on the West Side, San Francisco and New York - but I see WalMart sells some for around US $28 for 500ml - that's a lot more than most of the California vinegars.

Red & White Wine Vinegar:
Under these names are general purpose wine vinegars for every day use. They vary considerably in quality, with major brand name products from American manufacturers generally at the bottom of the barrel, so to speak. Select a brand you like that you can get consistently in bottles of appropriate size for you usage. For general everyday use I buy L'Aretino, an Italian import that's pretty good at an acceptable price for both red and white.

Champaign, Merlot, Cabernet, etc:
Single varietal wine vinegars are generally traditionally made and exhibit the qualities of the wines they are made from. California wine vinegars are predominantly of this type. They are, of course, at a higher price, so should be reserved for more sophisticated sauces and dressings where their distinctive qualities will be evident.

Chianti Vinegar - an excellent and quite distinctive deep red varietal wine vinegar (at least the brands I've tried have been). It is made of Chianti D.O.C.G wine and is generally shipped at an acidity of around 7.5%, considerably higher than most wine vinegars so adjust recipes to suit.

Sherry Vinegar
Once this was given away by embarrassed sherry wine makers when a batch went bad, then somebody decided it could be sold. Now it's considered the king of wine vinegars, is highly prized and will carry a certificate of origin logo. It's also more expensive than most other wine vinegars. Like balsamic, it goes through a series of barrels, but that's in the wine stage. It will have further aging in barrels after being converted to vinegar. **Caution:** sherry vinegar is usually about 8% (8°) acidity, considerably stronger than other vinegars which tend to average 4% to 5%. Adjust your recipe whenever substituting one for the other.

3. Kachri Powder

This is one of the most fascinating souring agents. A wild berry that grows in Rajasthan and a few parts of northern India, dried and powdered kachri is used in a sophisticated Delhi Kayasth dish like Badam Pasande. It acts both as a tenderiser for meat (it is used in the marinade along with yoghurt) and a souring agent. In fact, the use of the local kachri in a dish clearly influenced by Mughal cooking points to the syncretic Ganga-Jamuni culinary culture of the Kayasths. In Kayasth homes, it was humble, every day spices, tenderisers, aromatics and souring agents that were used, even if the cuisine created was sophisticated. This separates it from the more "royal" Mughal cooking, where dishes were cooked by cooks who went out of their way to find more elusive and expensive ingredients in a bid to outdo each other and perhaps tell a better story to the royals!

Fig 4.03: Kachari powder

4. Pomegranate Seeds

Ever wanted to recreate the same black chickpeas with a tang that you have had as part of the Punjabi chole-bhature classic in restaurants or shops? Homes today use tomatoes to sour the chickpeas. But the "correct" souring agent is anar dana; it has a distinct flavour and bite to it that cannot be missed.

Fig 4.04: Anar dana (Pomegrante seed)

(Wikiepdia)

5. Yoghurt or Curd

One of the distinguishing marks of any meat dish with "courtly" Mughal/Nawabi/Nizami is the use of yoghurt as a souring agent. In Delhi, whisking together fried onions and yoghurt and adding it to the spices and almost cooked meat at the final stages of cooking gave body to the curry too. The thin shorvas of home-style meat curries on the other hand also always derived their sourness from yoghurt- not from tomatoes. On the other hand, fish was never cooked in yoghurt. Perhaps because of the Ayurvedic underpinnings of Indian kitchens (fish and curd are a non-combination, according to Ayurveda).

About Yoghurt

https://en.wikipedia.org/wiki/Yogurt

Yogurt, yoghurt, or yoghourt (/ˈjoʊgərt/ or /ˈjɒgət/; from Turkish: yoğurt; other spellings listed below) is a food produced by bacterial fermentation of milk. The bacteria used to make yogurt are

known as "yogurt cultures". Fermentation of lactose by these bacteria produces lactic acid, which acts on milk protein to give yogurt its texture and characteristic tart flavor. Cow's milk is commonly available worldwide, and, as such, is the milk most commonly used to make yogurt. Milk from water buffalo, goats, ewes, mares, camels, and yaks is also used to produce yogurt where available locally. Milk used may be homogenized or not (milk distributed in many parts of the world is homogenized); both types may be used, with substantially different results.

Yogurt is produced using a culture of Lactobacillus delbrueckii subsp. bulgaricus and Streptococcus thermophilus bacteria. In addition, other lactobacilli and bifidobacteria are also sometimes added during or after culturing yogurt. Some countries require yogurt to contain a certain amount of colony-forming units of bacteria; in China, for example, the requirement for the number of lactobacillus bacteria is at least 1 × 106 CFU per milliliter.

Fig 4.05: A bowl of yogurt garnished with fruit and mint

(Wikipedia)

To produce yogurt, milk is first heated, usually to about 85 °C (185 °F), to denature the milk proteins so that they do not form curds. After heating, the milk is allowed to cool to about 45 °C (113 °F). The bacterial culture is mixed in, and a temperature of 45 °C (113 °F) is maintained for four to twelve hours to allow fermentation

Home-made yoghurt

Yogurt is made by heating milk to a temperature that denaturates its proteins (scalding), essential for making yogurt, cooling it to a temperature that will not kill the live microorganisms that turn the milk into yogurt, inoculating certain bacteria (starter culture), usually Streptococcus thermophilus and Lactobacillus bulgaricus, into the milk, and finally keeping it warm for several hours. The milk may

be held at 85 °C (185 °F) for a few minutes, or boiled (giving a somewhat different result). It must be cooled to 50 °C (122 °F) or somewhat less, typically 40–46 °C (104–115 °F). Starter culture must then be mixed in well, and the mixture must be kept undisturbed and warm for several hours, ranging from 5 to 12, with longer fermentation producing a more acid yogurt. The starter culture may be a small amount of live yogurt. Dried starter culture is available commercially.

Milk with a higher concentration of solids than normal milk may be used; the higher solids content produces a firmer yogurt. Solids can be increased by adding dried milk. The yogurt-making process provides two significant barriers to pathogen growth, heat and acidity (low pH). Both are necessary to ensure a safe product. Acidity alone has been questioned by recent outbreaks of food poisoning by E. coli O157:H7 that is acid-tolerant. E. coli O157:H7 is easily destroyed by pasteurization (heating); the initial heating of the milk kills pathogens as well as denaturing proteins. The microorganisms that turn milk into yogurt can tolerate higher temperatures than most pathogens, so that a suitable temperature not only encourages the formation of yogurt, but inhibits pathogenic microorganisms. Once the yogurt has formed it can, if desired, be strained to reduce the whey content and thicken it.

About Curd

https://en.wikipedia.org/wiki/Curd

Curds are a dairy product obtained by coagulating milk in a process called curdling. The coagulation can be caused by adding enzymes rennet or any edible acidic substance such as lemon juice or vinegar, and then allowing it to coagulate. Also, adding lactic acid bacteria in to milk and subsequent acid production will also result in gel formation of milk. The increased acidity causes the milk proteins (casein) to tangle into solid masses, or curds. Milk that has been left to sour (raw milk alone or pasteurized milk with added lactic acid bacteria) will also naturally produce curds, and sour milk cheeses are produced this way. Producing cheese curds is one of the first steps in cheesemaking; the curds are pressed and drained to varying amounts for different styles of cheese and different secondary agents (molds for blue cheeses, etc.) are introduced before the desired aging finishes the cheese. The remaining liquid, which contains only whey proteins, is the whey. In cow's milk, 80 percent of the proteins are caseins.

Curd products vary by region and include cottage cheese, curd cheese (both curdled by bacteria and sometimes also rennet), farmer cheese, pot cheese, queso blanco, and paneer. The word can also refer to a non-dairy substance of similar appearance or consistency, though in these cases a modifier or the word curdled is generally used.

In England, curds produced from the use of rennet are referred to as junket, with true curds and whey only occurring from the natural separation of milk due to its environment (temperature, acidity).

Cheese curds, drained of the whey and served without further processing or aging, are popular in some French-speaking regions of Canada, such as Quebec, parts of Ontario, and Atlantic Canada. In Quebec, eastern Ontario and the eastern provinces such as New Brunswick, cheese curds are popularly served with french fries and gravy as poutine.

Curds are also typical of some Germanic-descent regions such as historic Waterloo County in Ontario. In some parts of the Midwestern U.S., especially in Wisconsin, they are breaded and fried, or are eaten straight.

Fig 4.06 Curd (Lithuanian curd)

(Wikipedia)

In Turkey, curds are called keş and are very commonly used as an aphrodisiac and for breakfast served on fried bread and are also eaten with macaroni in the provinces of Bolu and Zonguldak.

In Mexico, the chongos zamoranos is a dessert prepared with milk curdled with sugar and cinnamon.

Albanian gjiza is made by boiling whey for about 15 minutes and adding vinegar or lemon. The derivative is drained 3 to 4 times with a napkin or piece of cloth and salted to taste. Gjiza can be served immediately or refrigerated for a couple of days.

6. Kokum

A fruit of the mangosteen family, the sun-dried outer fruit is used as a popular souring agent in Maharashtra, Karnataka as well as Assamese food, pointing to geography and natural availability of ingredients as one of the most important factors to consider when trying to understand pan-Indian cuisines.

Fig 4.07: Kokum (Garcinia indica) fruits, seeds, pulp and rinds

7. Amchoor

https://en.wikipedia.org/wiki/Amchoor

Amchoor or aamchur, also referred to as mango powder, is a fruity spice powder made from dried unripe green mangoes and is used as a citrusy seasoning. It is produced in India, and is used to flavor foods

Fig 4.08: Amchoor powder

Preparation

To make amchoor, early-season mangoes are harvested while still green and unripe. Once harvested, the green mangoes are peeled, thinly sliced, and sun-dried. The dried slices, which are light brown and resemble strips of woody bark, can be purchased whole and ground by the individual at home, but the majority of the slices processed in this way are ground into fine powder and sold as ready-made amchoor.

Use

It has a honey-like fragrance and a sour fruity flavor and is a tart pale-beige-to-brownish powder used in dishes where acidity is required. Used in stir fried vegetable dishes, soups, curries, and to tenderize meat and poultry. It is used to add a fruit flavor without adding moisture, or as a souring agent. It lends an acidic brightness to the foods it is applied to.

Amchoor is a predominant flavoring agent in north Indian dishes, where it is used to add a sour tangy fruity flavor without moisture. It is used to flavor samosa and pakora fillings, stews and soups, fruit salads and pastries, curries, chutneys, pickles and dals and to tenderize meats, poultry, and fish. It is added to marinades for meat and poultry as an enzymatic tenderizer, and lends its sourness to chutneys and pickles

In UP and Bihar, dried mango powder is the souring agent of choice for vegetarian preparations, including lentils. When the fruit is in season, small pieces of unripe, tart mangoes are cut and cooked along with arhar dal, or in vegetables. But when the season gets over, it is amchoor that takes over.

8. Tamarind

By far the most popular souring agent in Indian cuisines because of its wide availability in our tropical climes. The Indian tamarind is sour (well, sweet and sour), unlike the Thai sweet tamarind, and is used in dishes across the Subcontinent-the south of Vindhyas, all along the east and west coasts. A substitute could be lime. But the complexity of flavour is just not the same.

These different souring agents are used in different ways through the length and breadth of the country making for distinct dishes, even when the main ingredients remain the same.

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CHECK YOUR PROGRESS

Describe the concept of Souring agents.
List and briefly describe at least five souring agents used in Indian cuisine.
Describe tomato used as a souring agent in Indian cuisine.
Describe Kachampuli Vinegar used as a souring agent in Indian cuisine.
Describe Kachri Powder used as a souring agent in Indian cuisine.
Describe Pomegranate Seeds used as a souring agent in Indian cuisine.
Describe Yoghurt or Curd used as a souring agent in Indian cuisine.
Describe Kokum used as a souring agent in Indian cuisine.
Describe Amchoor used as a souring agent in Indian cuisine.
Describe Tamarind used as a souring agent in Indian cuisine.
Describe the concept of curd.
Explain the concept of yoghurt.
Elaborate on vingegar and their various types**.**

4.03 COLORING AGENTS

(https://en.wikipedia.org/wiki/Food_coloring)

Food coloring

Fig 4.09: The addition of food coloring, such as beta-carotene, gives margarine its yellow color.

Food coloring, or color additive, is any dye, pigment or substance that imparts color when it is added to food or drink. They come in many forms consisting of liquids, powders, gels, and pastes. Food coloring is used both in commercial food production and in domestic cooking. Food colorants are also used in a variety of non-food applications including cosmetics, pharmaceuticals, home craft projects, and medical devices.

Purpose of food coloring

People associate certain colors with certain flavors, and the color of food can influence the perceived flavor in anything from candy to wine. Sometimes the aim is to simulate a color that is perceived by the consumer as natural, such as adding red coloring to glacé cherries (which would otherwise be beige), but sometimes it is for effect, like the green ketchup that Heinz launched in 1999. Color additives are used in foods for many reasons including:

- To make food more attractive, appealing, appetizing, and informative
- Offset color loss due to exposure to light, air, temperature extremes, moisture and storage conditions
- Correct natural variations in color
- Enhance colors that occur naturally
- Provide color to colorless and "fun" foods
- Allow consumers to identify products on sight, like candy flavors or medicine dosages

History of artificial food colorants

The addition of colorants to foods is thought to have occurred in Egyptian cities as early as 1500 BC, when candy makers added natural extracts and wine to improve the products' appearance. During the Middle Ages, the economy in the European countries was based on agriculture, and the peasants were accustomed to producing their own food locally or trading within the village communities. Under feudalism, aesthetic aspects were not considered, at least not by the vast majority of the generally very poor population. This situation changed with urbanization at the beginning of the Modern Age, when trade emerged—especially the import of precious spices and colors. One of the very first food laws, created in Augsburg, Germany, in 1531, concerned spices or colorants and required saffron counterfeiters to be burned.

With the onset of the industrial revolution, people became dependent on foods produced by others. These new urban dwellers demanded food at low cost. Analytical chemistry was still primitive and regulations few. The adulteration of foods flourished. Heavy metal and other inorganic element-containing compounds turned out to be cheap and suitable to "restore" the color of watered-down milk and other foodstuffs, some more lurid examples being:

- Red lead (Pb_3O_4) and vermillion (HgS) were routinely used to color cheese and confectionery.
- Copper arsenite ($CuHAsO_3$) was used to recolor used tea leaves for resale. It also caused two deaths when used to color a dessert in 1860.

Sellers at the time offered more than 80 artificial coloring agents, some invented for dyeing textiles, not foods.

Many color additives had never been tested for toxicity or other adverse effects. Historical records show that injuries, even deaths, resulted from tainted colorants. In 1851, about 200 people were poisoned in England, 17 of them fatally, directly as a result of eating adulterated lozenges. In 1856, mauveine, the first synthetic color, was developed by Sir William Henry Perkin and by the turn of the century, unmonitored color additives had spread through Europe and the United States in all sorts of popular foods, including ketchup, mustard, jellies, and wine. Originally, these were dubbed 'coal-tar' colors because the starting materials were obtained from bituminous coal.

Many synthesized dyes were easier and less costly to produce and were superior in coloring properties when compared to naturally derived alternatives. Some synthetic food colorants are diazo dyes. Diazo dyes are prepared by coupling of a diazonium compound with a second aromatic hydrocarbons. The resulting compounds contain conjugated systems that efficiently absorb light in the visible parts of the spectrum, i.e. they are deeply colored. The attractiveness of the synthetic dyes is that their color, lipophilicity, and other attributes can be engineered by the design of the specific dyestuff. The color of the dyes can be controlled by selecting the number of azo-groups and various substituents. Yellow shades are often achieved by using acetoacetanilide. Red colors are often azo compounds. The pair indigo and indigo carmine exhibit the same blue color, but the former is soluble in lipids, and the latter is water-soluble because it has been fitted with sulfonate functional groups.

Regulation

History of regulation

Concerns over food safety led to numerous regulations throughout the world. German food regulations released in 1882 stipulated the exclusion of dangerous minerals such as arsenic, copper, chromium, lead, mercury and zinc, which were frequently used as ingredients in colorants. In contrast to today, these first laws followed the principle of a negative listing (substances not allowed for use); they were already driven by the main principles of today's food regulations all over the world, since all of these regulations follow the same goal: the protection of consumers from toxic substances and from fraud. In the United States, the Pure Food and Drug Act of 1906 reduced the permitted list of synthetic colors from 700 down to seven. The seven dyes initially approved were Ponceau 3R (FD&C Red No. 1), amaranth (FD&C Red No. 2), erythrosine (FD&C Red No. 3), indigotine (FD&C Blue No. 2), Light Green SF (FD&C Green No. 2), Naphthol yellow 1 (FD&C Yellow No. 1), and Orange 1 (FD&C Orange No. 1). Even with updated food laws, adulteration continued for many years and this, together with more recent adverse press comments on food colors and health, has continued to contribute to consumer concern about color addition to foodstuffs.

In the 20th century, the improvement of chemical analysis and the development of trials to identify the toxic features of substances added to foods led to the replacement of the negative lists by lists of substances allowed to be used for the production and the improvement of foods. This principle is called a positive listing, and almost all recent legislations are based on it. Positive listing implies that substances meant for human consumption have been tested for their safety, and that they have to meet specified purity criteria prior to their approval by the corresponding authorities. In 1962, the first EU directive (62/2645/EEC) approved 36 colorants, of which 20 were naturally derived and 16 were synthetic. This directive did not list which food products the colorants could or could not be used in. At that time, each member state could designate where certain colors could and could not be used. In Germany, for example, quinoline yellow was allowed in puddings and desserts, but tartrazine was not. The reverse was true in France. This was updated in 1989 with 89/107/EEC, which concerned food additives authorized for use in foodstuffs.

Current regulation

While naturally derived colors are not required to be certified by a number of regulatory bodies throughout the world (including the U.S. FDA), they still need to be approved for use in that country. Food colorings are tested for safety by various bodies around the world and sometimes different bodies have different views on food color safety.

FDA's permitted colors are classified as subject to certification or exempt from certification in Code of Federal Regulations - Title 21 Part 73 & 74, both of which are subject to rigorous safety standards prior to their approval and listing for use in foods.

Certified colors are synthetically produced and are used widely because they impart an intense, uniform color, are less expensive, and blend more easily to create a variety of hues. There are nine certified color additives approved for use in the United States. Certified food colors generally do not add undesirable flavors to foods.

Colors that are exempt from certification include pigments derived from natural sources such as vegetables, minerals, or animals. Nature derived color additives are typically more expensive than certified colors and may add unintended flavors to foods. Examples of exempt colors include annatto, beet extract, caramel, beta-carotene, turmeric and grape skin extract. This list contains substances which may have synthetic origins, such as nature identical beta-carotene.

In the United States, FD&C numbers (which indicate that the FDA has approved the colorant for use in foods, drugs and cosmetics) are given to approved synthetic food dyes that do not exist in nature, while in the European Union, E numbers are used for all additives, both synthetic and natural, that are approved in food applications. The food colors are known by E numbers that begin with a 1, such as E100 (turmeric) or E161b (lutein). The safety of food colors and other food additives in the EU is evaluated by the European Food Safety Authority. Color Directive 94/36/EC, enacted by the European Commission in 1994, outlines permitted natural and artificial colors with their approved applications and limits in different foodstuffs. This is binding to all member countries of the EU. Any changes have to be implemented into their national laws within a given time frame. In non-EU member states, food additives are regulated by their national authorities, which usually, but not in all cases, try to harmonize with the laws adopted by the EU. Most other countries have their own regulations and list of food colors which can be used in various applications, including maximum daily intake limits.

Permitted colorants

E.U.

E numbers 102-143 cover the range of artificial colors. For an overview of currently allowed additives see here . Some artificial dyes approved for food use in the EU include:

E104: Quinoline Yellow

E122: Carmoisine

E124: Ponceau 4R

E131: Patent Blue V

E142: Green S

U.S.

In the US, the following seven artificial colorings are generally permitted in food (the most common in bold) as of 2016. The lakes of these colorings are also permitted except the lake of Red No. 3.

FD&C Blue No. 1 – Brilliant Blue FCF, E133 (blue shade)

FD&C Blue No. 2 – Indigotine, E132 (indigo shade)

FD&C Green No. 3 – Fast Green FCF, E143 (turquoise shade)

FD&C Red No. 3 – Erythrosine, E127 (pink shade, commonly used in glacé cherries)

FD&C Red No. 40 – Allura Red AC, E129 (red shade)

FD&C Yellow No. 5 – Tartrazine, E102 (yellow shade)

FD&C Yellow No. 6 – Sunset Yellow FCF, E110 (orange shade)

Two dyes are allowed by the FDA for limited applications:

Citrus Red 2 (orange shade) - allowed only to color orange peels.

Orange B (red shade) - allowed only for use in hot dog and sausage casings (not produced after 1978, but never delisted)

Many dyes have been delisted for a variety of reasons, ranging from poor coloring properties to regulatory restrictions. Some of these delisted food colorants are:

FD&C Red No. 2 – Amaranth, E123

FD&C Red No. 4

FD&C Red No. 32 was used to color Florida oranges.

FD&C Orange Number 1 was one of the first water-soluble dyes to be commercialized, and one of seven original food dyes allowed under the Pure Food and Drug Act of June 30, 1906.

FD&C Orange No. 2 was used to color Florida oranges.

FD&C Yellow No. 1, 2, 3, and 4

FD&C Violet No. 1

Global harmonization

Since the beginning of the 1960s, JECFA has promoted the development of international standards for food additives, not only by its toxicological assessments, which are continuously published by the WHO in a "Technical Report Series", but furthermore by elaborating appropriate purity criteria, which are laid down in the two volumes of the "Compendium of Food Additive Specifications" and their supplements. These specifications are not legally binding but very often serve as a guiding principle, especially in countries where no scientific expert committees have been established.

In order to further regulate the use of these evaluated additives, in 1962 the WHO and FAO created an international commission, the Codex Alimentarius, which is composed of authorities, food industry associations and consumer groups from all over the world. Within the Codex organization, the Codex Committee for Food Additives and Contaminants is responsible for working out recommendations for the application of food additives, the General Standard for Food Additives. In the light of the World

Trade Organizations General Agreement on Tariffs and Trade (GATT), the Codex Standard, although not legally binding, influences food color regulations all over the world.

Natural food dyes

Natural food colors can make a variety of different hues

Carotenoids (E160, E161, E164), chlorophyllin (E140, E141), anthocyanins (E163), and betanin (E162) comprise four main categories of plant pigments grown to color food products. Other colorants or specialized derivatives of these core groups include:

Annatto (E160b), a reddish-orange dye made from the seed of the achiote

Caramel coloring (E150a-d), made from caramelized sugar

Carmine (E120), a red dye derived from the cochineal insect, Dactylopius coccus

Elderberry juice (E163)

Lycopene (E160d)

Paprika (E160c)

Turmeric (E100)

Blue colors are especially rare. One feasible blue dye currently in use is derived from spirulina.

To ensure reproducibility, the colored components of these substances are often provided in highly purified form. For stability and convenience, they can be formulated in suitable carrier materials (solid and liquids). Hexane, acetone, and other solvents break down cell walls in the fruit and vegetables and allow for maximum extraction of the coloring. Traces of these may still remain in the finished colorant, but they do not need to be declared on the product label. These solvents are known as carry-over ingredients.

Criticism and health implications

Widespread public belief that artificial food coloring cause hyperactivity in children originated with Benjamin Feingold a pediatric allergist from California, who proposed in 1973 that salicylates, artificial colors, and artificial flavors cause hyperactivity in children; however, there is no evidence to support broad claims that food coloring causes food intolerance and ADHD-like behavior in children.:452 It is possible that certain food coloring may act as a trigger in those who are genetically predisposed, but the evidence is weak.

After concerns were expressed that food colorings may cause ADHD-like behavior in children, the collective evidence do not support this assertion. The US FDA and other food safety authorities to regularly review the scientific literature, and led the UK Food Standards Agency (FSA) to commission a study by researchers at Southampton University of the effect of a mixture of six food dyes (Tartrazine, Allura Red, Ponceau 4R, Quinoline Yellow WS, Sunset Yellow and Carmoisine (dubbed the "Southampton 6")) on children in the general population. These colorants are found in beverages. The study found "a possible link between the consumption of these artificial colours and a sodium benzoate preservative and increased hyperactivity" in the children; the advisory committee to the FSA that evaluated the study also determined that because of study limitations, the results could not be extrapolated to the general population, and further testing was recommended". The U.S. FDA

did not make changes following the publication of the Southampton study, but following a citizen petition filed by the Center for Science in the Public Interest in 2008, requesting the FDA ban several food additives, the FDA reviewed the available evidence, and still made no changes.

The European regulatory community, with an emphasis on the precautionary principle, required labelling and temporarily reduced the acceptable daily intake (ADI) for the food colorings; the UK FSA called for voluntary withdrawal of the colorings by food manufacturers. However, in 2009 the EFSA re-evaluated the data at hand and determined that "the available scientific evidence does not substantiate a link between the color additives and behavioral effects" for any of the dyes.

CHECK YOUR PROGRESS

Explain the concept of coloring agent
Describe the purpose of food coloring.
Elaborate the history of food coloring.
Discuss the need of regulation of food colorants.
Explain the history of regulation in food colorants.
What is the status of food colorants regulation in US?
What is the need for global harmonization of the regulation of the food colorants?
Explain the natural food colorants.
Explain why artificial colorants have been criticized.

4.04 THICKENING AGENTS

https://en.wikipedia.org/wiki/Thickening_agent

A thickening agent or thickener is a substance which can increase the viscosity of a liquid without substantially changing its other properties. Edible thickeners are commonly used to thicken sauces, soups, and puddings without altering their taste; thickeners are also used in paints, inks, explosives, and cosmetics.

Thickeners may also improve the suspension of other ingredients or emulsions which increases the stability of the product. Thickening agents are often regulated as food additives and as cosmetics and personal hygiene product ingredients. Some thickening agents are gelling agents (gellants), forming a gel, dissolving in the liquid phase as a colloid mixture that forms a weakly cohesive internal structure. Others act as mechanical thixotropic additives with discrete particles adhering or interlocking to resist strain.

Thickening agents can also be used when a medical condition such as dysphagia causes difficulty in swallowing. Thickened liquids play a vital role in reducing risk of aspiration for dysphagia patients.

Food thickeners frequently are based on either polysaccharides (starches, vegetable gums, and pectin), or proteins. A flavorless powdered starch used for this purpose is a fecula (from the Latin faecula, diminutive of faex, "dregs"). This category includes starches as arrowroot, cornstarch, katakuri starch, potato starch, sago, tapioca and their starch derivatives. Vegetable gums used as food thickeners include alginin, guar gum, locust bean gum, and xanthan gum. Proteins used as food thickeners include collagen, egg whites, and gelatin. Sugars include agar and carrageenan. Other thickening agents act on the proteins already present in a food. One example is sodium pyrophosphate, which acts on casein in milk during the preparation of instant pudding.

Different thickeners may be more or less suitable in a given application, due to differences in taste, clarity, and their responses to chemical and physical conditions. For example, for acidic foods, arrowroot is a better choice than cornstarch, which loses thickening potency in acidic mixtures. At (acidic) pH levels below 4.5, guar gum has sharply reduced aqueous solubility, thus also reducing its thickening capability. If the food is to be frozen, tapioca or arrowroot are preferable over cornstarch, which becomes spongy when frozen.

Many other food ingredients are used as thickeners, usually in the final stages of preparation of specific foods. These thickeners have a flavor and are not markedly stable, thus are not suitable for general use. However, they are very convenient and effective, and hence are widely used.

Functional flours are produced from specific cereal variety (wheat, maize, rice or other) conjugated to specific heat treatment able to increase stability, consistency and general functionalities. These functional flours are resistance to industrial stresses such as acidic pH, sterilisation, freeze conditions, and can help food industries to formulate with natural ingredients. For the final consumer, these ingredients are more accepted because they are shown as "flour" in the ingredient list.

Flour is often used for thickening gravies, gumbos, and stews. It must be cooked in thoroughly to avoid the taste of uncooked flour. Roux, a mixture of flour and fat (usually butter) cooked into a paste, is used for gravies, sauces and stews. Cereal grains (oatmeal, couscous, farina, etc.) are used to thicken soups. Yogurt is popular in Eastern Europe and Middle East for thickening soups. Soups can also be thickened by adding grated starchy vegetables before cooking, though these will add their own flavour. Tomato puree also adds thickness as well as flavour. Egg yolks are a traditional sauce thickener in professional cooking; they have rich flavor and offer a velvety smooth texture but achieve the desired thickening effect only in a narrow temperature range. Overheating easily ruins such a sauce, which can make egg yolk difficult to use as a thickener for amateur cooks. Other thickeners used by cooks are nuts (including rehan) or glaces made of meat or fish.

Many thickening agents require extra care in cooking. Some starches lose their thickening quality when cooked for too long or at too high a temperature; on the other hand, cooking starches too short or not hot enough might lead to an unpleasant starchy taste or cause water to seep out of the finished product after cooling. Also, higher viscosity causes foods to burn more easily during cooking. As an alternative to adding more thickener, recipes may call for reduction of the food's water content by lengthy simmering. When cooking, it is generally better to add thickener cautiously; if over-thickened, more water may be added but loss of flavour and texture may result.

Gelling agents are food additives used to thicken and stabilize various foods, like jellies, desserts and candies. The agents provide the foods with texture through formation of a gel. Some stabilizers and thickening agents are gelling agents.

Typical gelling agents include natural gums, starches, pectins, agar-agar and gelatin. Often they are based on polysaccharides or proteins.

Examples are:

Alginic acid (E400), sodium alginate (E401), potassium alginate (E402), ammonium alginate (E403), calcium alginate (E404) - polysaccharides from brown algae

Agar (E406, a polysaccharide obtained from red algaes)

Carrageenan (E407, a polysaccharide obtained from red seaweeds)

Locust bean gum (E410, a natural gum polysaccharide from the seeds of the Carob tree)

Pectin (E440, a polysaccharide obtained from apple or citrus-fruit)

Gelatin (E441, made by partial hydrolysis of animal collagen)

Commercial jellies used in East Asian cuisines include the glucomannan polysaccharide gum used to make "lychee cups" from the konjac plants, and aiyu or ice jelly from the Ficus pumila climbing fig plant.

Food thickening can be important for people facing medical issues with chewing or swallowing, as foods with a thicker consistency can reduce the chances of choking, or of inhalation of liquids or food particles, which can lead to aspiration pneumonia.

Some Thickening Agents used in Indian Cuisine

(http://www.yourarticlelibrary.com/home-science/cooking-home-science/list-of-top-7-thickening-agents-used-in-indian-cooking/86814)

List of top seven thickening agents used in Indian cooking:- 1. Onion Pastes 2. Nut Pastes 3. Seed Pastes 4. Masala Pastes 5. Lentils 6. Dairy Products 7. Vegetable Purees.

1. Onion Pastes:

Both fried onion paste and boiled onion paste help provide thickness to the gravies. They indeed help to add base or body to the dish apart from acting as colouring agents too.

2. Nut Pastes:

Various types of nuts ground into a fine paste are used in thickening for Indian gravies. These are probably the influence of Mughal rulers and hence, mostly found in Mughlai kormas and curries often referred to as Indian royal cuisine. There are many of the nut pastes, such as cashew nut, almond, and coconut. Apart from these, sometimes for special gravies, pistachio paste can also be used in thickening of gravy.

3. Seed Pastes:

Many kinds of seeds are used in paste form to provide thickening to curries and dishes. For example, poppy seed paste, chironjee paste, char magaz paste. Many other seeds such as sesame seeds are used in paste that also acts as a thickening agent. Mustard seeds are also used in the form of paste that acts as thickening and flavouring agents in many Bengali dishes.

4. Masala Pastes:

Many types of dry masalas and wet masala pastes are used in the thickening of the dishes in Indian cuisine.

5. Lentils:

Many Indian preparations use lentils for thickening purposes. It is used in various forms around India as shown in Table 26.11.

6. Dairy Products:

Many types of dairy products, such as cream, etc., are used in Indian cooking to thicken some gravies, especially in Mughlai cuisine. Such use of dairy products is more prevalent in hotels and restaurants, and is rarely done in home style food. This is probably the influence of Western cooking.

7. Vegetable Purees:

Certain vegetable pastes, such as fresh turmeric, ginger, and garlic pastes, are also used for thickening of curries. Some green leafy vegetable pastes, such as spinach, fenugreek, etc. are used in thickening curries and dishes.

CHECK YOUR PROGRESS

Explain the concept of thickening agents.
Describe the various substances used as food thickening agents.
Elaborate the care to be taken while using food thickeners.
Discuss the need of regulation of food colorants.
Explain the concept of gelling agents and mention various examples.
Describe the use of Masala paste as thickening agent in Indian cuisine.
Discuss the use of Nut Pastes as thickening agent in Indian cuisine.
Elaborate the use of Seed Pastes as thickening agent in Indian cuisine.
Explain the use of Lentils as thickening agent in Indian cuisine.
Elaborate the use of as Dairy Products thickening agent in Indian cuisine.
Describe the use of Vegetable Purees as thickening agent in Indian cuisine.
Discuss the use of Onion Pastes as thickening agent in Indian cuisine.

4.05 TENDERING AGENTS

Tenderizing the meat

https://www.thebalance.com/homemade-meat-tenderizer-1388329

Unfortunately, cheap cuts of meat are often tough cuts of meat, but that's nothing a little tenderizing can't fix. Here's how to make a cheap and easy meat tenderizer.

What You Do:

Just add a tablespoon or two of white vinegar to your cooking liquids; and your roasts, stew meats and steaks will come out tender and juicy every time. Another option is to pierce your meat all over with a fork; then, soak it in vinegar for an hour or two before you cook it.

Whichever method you choose, be sure to cook your meat in a non-reactive pan or dish. Cast iron and some other metals can react unfavorably with the acid in tenderizer. Coated non-stick pans or glass baking dishes are ideal.

Why This Works:

The acetic acid in the vinegar breaks down meat fibers, making them more tender and flavorful.

Other Things You Can Use to Tenderize Meat

If you don't have any white vinegar on hand, or would prefer to use something else, you can also use wine, citrus juice (lemon, lime, orange), tomato sauce, beer, pineapple juice, soda, coffee, tea, buttermilk, yogurt or any other type of vinegar (apple, balsamic, red wine, white wine, etc). The acid

in these foods will tenderize the meat just like the white vinegar. So, choose a tenderizer with a flavor that appeals to you and compliments the dish that you're making.

Other Ways to Tenderize Meat

If you want to tenderize meat without adding any sort of flavor to it, here are several other options that you can employ:

- Use a Meat Mallet: You can pound the meat with a mallet to tenderize it before cooking. This has the added benefit of flattening the meat out, so that it cooks faster. If you don't have an actual meat mallet among your kitchen equipment, you can use something heavy like a cast iron pan or a rolling pin instead. Just be sure to sanitize whatever you use afterwards.
- Cook the Meat in a Crockpot, Pressure Cooker or Roasting Pan: Cooking meat for a long time is a great way to make it fall-apart tender, but you have to use a cooking method that locks in moisture, or your meat will come out dry. That makes crockpots, pressure cookers and lidded roasting pans ideal for cooking tough cuts to perfection. And since they're all relatively hands-off cooking methods, they're perfect for busy days.
- Marinade: If you're trying to avoid using a flavored meat tenderizer because you plan to flavor the meat later, using a marinade offers the best of both worlds. Marinades typically contain an acid to tenderize the meat (likely one of the tenderizers covered above), along with other ingredients to enhance flavor. You can buy ready-made marinades, but they're actually really easy to make yourself.

Marination

https://en.wikipedia.org/wiki/Marination

Marination is the process of soaking foods in a seasoned, often acidic, liquid before cooking. The origin of the word alludes to the use of brine (aqua marina) in the pickling process, which led to the technique of adding flavor by immersion in liquid. The liquid in question, the 'marinade', can be either acidic (made with ingredients such as vinegar, lemon juice, or wine) or enzymatic (made with ingredients such as pineapple, papaya or ginger). In addition to these ingredients, a marinade often contains oils, herbs, and spices to further flavor the food items.

It is commonly used to flavor foods and to tenderize tougher cuts of meat. The process may last seconds or days. Different marinades are used in different cuisines. For example, in Indian cuisine the marinade is usually prepared with a mixture of spices.

Tissue breakdown

In meats, the acid causes the tissue to break down, which allows more moisture to be absorbed and results in a juicier end product; however, too much acid can be detrimental to the end product. A break down the surface and turn the outer layer mushy. good marinade has a balance of acid, oil, and spice. If raw marinated meat is frozen, the marinade can Often confused with marinating, macerating is a similar form of food preparation.

Marinating safety

Raw pork, seafood, beef and poultry may contain harmful bacteria which may contaminate the marinade. Marinating should be done in the refrigerator to inhibit bacterial growth. Used marinade should not be made into a sauce unless rendered safe by boiling directly before use; otherwise,

Fig 4.10: Chicken in Marination

(Wikipedia)

fresh or set-aside marinade that has not touched meat should be used. The container used for marinating should be glass or food safe plastic. Metal, including pottery glazes which can contain lead, reacts with the acid in the marinade and should be avoided

Maceration (food)

https://en.wikipedia.org/wiki/Maceration_(food)

Fig 4.11: Maceration of dried fruit in rum and apple juice

In food preparation, maceration is softening or breaking into pieces using a liquid.

Raw, dried or preserved fruit or vegetables are soaked in a liquid to soften the food and/or absorb the flavor of the liquid into the food.

In the case of fresh fruit, particularly soft fruit such as strawberries and raspberries, they are often just sprinkled with sugar (and sometimes a small amount of salt) then left to sit and release their own juices. This process makes the food more flavorful and easier to chew and digest.

Maceration is often confused with marination, which is the process of soaking foods in a seasoned, often acidic, liquid before cooking.

Some herbal preparations call for maceration, as it is one way to extract delicate or highly volatile herbal essences "cold" and thus preserve their signature more accurately.

Sometimes a cooking oil is used as the liquid for maceration – especially olive or some other vegetable oil.

Maceration is the chief means of producing a flavored alcoholic beverage, such as cordials and liqueurs.

Maceration of byproducts from food processing plants sometimes involves the use of a chopper pump to create a "blended" slurry[weasel words] of food waste and other organic byproducts. The macerated substance, which can be described as a protein-rich slurry, is often used for animal feed, fertilizer, and for co-digestion feedstock in biogas plants.

Meat Mallet

https://en.wikipedia.org/wiki/Meat_tenderizer

Fig 4.12: A meat tenderizer in action.

A meat tenderizer, meat mallet, or meat pounder is a hand-powered tool used to tenderize slabs of meat in preparation for cooking. Although a meat tenderizer can be made out of virtually any object, there are three types manufactured specifically for tenderizing meat.

- The first, most common, is a tool that resembles a hammer or mallet made of metal or wood with a short handle and dual heads. One face of the tool is usually flat while the other has rows of pyramid-shaped tenderizers.
- The second form resembles a potato masher with a short handle and a large metal face that is either smooth or adorned with the same pyramid-shaped tenderizers as found in the first form.
- The third form is a blade tenderizer that has a series of blades or nails that are designed to puncture the meat and cut into the fibers of the muscle.

Tenderizing meat with the mallet softens the fibers, making the meat easier to chew and to digest. It is useful when preparing particularly tough cuts of steak, and works well when broiling or frying the meat. It is also used to "pound out" dishes such as chicken-fried steak, palomilla, or schnitzel, to make them wider and thinner.

CHECK YOUR PROGRESS

Explain the concept of food tendering agents.
Describe the various substances used as food tendering agents.
Elaborate the various ways to tender meat.
Discuss the concept of marination.
Explain the process of breaking down of tissues of meat during marination.
Describe the safety precautions while marinating meat.
Discuss the concept of Maceration of food.
Discuss the difference between Maceration and Marination of food.
Elaborate the use of meat mallet for tendering the meat.

4.06 FLAVORING AGENTS

https://en.wikipedia.org/wiki/Flavor

Flavor (American English) or flavour (British English) is the sensory impression of food or other substance, and is determined primarily by the chemical senses of taste and smell. The "trigeminal senses", which detect chemical irritants in the mouth and throat, as well as temperature and texture, are also important to the overall gestalt of flavor perception. The flavor of the food, as such, can be altered with natural or artificial flavorants which affect these senses.

Flavoring agents

A "flavorant" is defined as a substance that gives another substance flavor, altering the characteristics of the solute, causing it to become sweet, sour, tangy, etc.. A flavor is a quality of something that affects the sense of taste.

Of the three chemical senses, smell is the main determinant of a food item's flavor. Five basic tastes – sweet, sour, bitter, salty and umami (savory) are universally recognized, although some cultures also include pungency and oleogustus ("fattiness"). The number of food smells is unbounded; a food's flavor, therefore, can be easily altered by changing its smell while keeping its taste similar. This is exemplified in artificially flavored jellies, soft drinks and candies, which, while made of bases with a similar taste, have dramatically different flavors due to the use of different scents or fragrances. The flavorings of commercially produced food products are typically created by flavorists.

Although the terms flavoring and flavorant in common language denote the combined chemical sensations of taste and smell, the same terms are used in the fragrance and flavors industry to refer to edible chemicals and extracts that alter the flavor of food and food products through the sense of smell. Due to the high cost or unavailability of natural flavor extracts, most commercial flavorants are "nature-identical", which means that they are the chemical equivalent of natural flavors, but chemically synthesized rather than being extracted from source materials. Identification of components of natural foods, for example a raspberry, may be done using technology such as headspace techniques, so the flavorist can imitate the flavor by using a few of the same chemicals present.

Flavorants or flavorings

Flavorings are focused on altering the flavors of natural food product such as meats and vegetables, or creating flavor for food products that do not have the desired flavors such as candies and other snacks. Most types of flavorings are focused on scent and taste. Few commercial products exist to stimulate the trigeminal senses, since these are sharp, astringent, and typically unpleasant flavors.

Three principal types of flavorings are used in foods, under definitions agreed in the EU and Australia:

Natural flavoring substances These flavoring substances are obtained from plant or animal raw materials, by physical, microbiological, or enzymatic processes. They can be either used in their natural state or processed for human consumption, but cannot contain any nature-identical or artificial flavoring substances.

Nature-identical flavoring substances. These are obtained by synthesis or isolated through chemical processes, which are chemically and organoleptically identical to flavoring substances naturally present in products intended for human consumption. They cannot contain any artificial flavoring substances.

Artificial flavoring substances These are not identified in a natural product intended for human consumption, whether or not the product is processed. These are typically produced by fractional distillation and additional chemical manipulation of naturally sourced chemicals, crude oil, or coal tar. Although they are chemically different, in sensory characteristics they are the same as natural ones.

Most artificial flavors are specific and often complex mixtures of singular naturally occurring flavor compounds combined together to either imitate or enhance a natural flavor. These mixtures are formulated by flavorists to give a food product a unique flavor and to maintain flavor consistency between different product batches or after recipe changes. The list of known flavoring agents includes thousands of molecular compounds, and the flavor chemist (flavorist) can often mix these together to produce many of the common flavors. Many flavorants consist of esters, which are often described as being "sweet" or "fruity".

Chemical	Odor
Diacetyl, acetylpropionyl, acetoin	Buttery
Isoamyl acetate	Banana
Benzaldehyde	Bitter almond, cherry
Cinnamaldehyde	Cinnamon
Ethyl propionate	Fruity
Methyl anthranilate	Grape
Limonene	Orange

Ethyl decadienoate	Pear
Allyl hexanoate	Pineapple
Ethyl maltol	Sugar, cotton candy
Ethylvanillin	Vanilla
Methyl salicylate	Wintergreen
Manzanate	Apple

The compounds used to produce artificial flavors are almost identical to those that occur naturally. It has been suggested that artificial flavors may be safer to consume than natural flavors due to the standards of purity and mixture consistency that are enforced either by the company or by law. Natural flavors, in contrast, may contain impurities from their sources, while artificial flavors are typically more pure and are required to undergo more testing before being sold for consumption.

Flavors from food products are usually the result of a combination of natural flavors, which set up the basic smell profile of a food product, while artificial flavors modify the smell to accent it.

Unlike smelling, which occurs upon inhalation, the sensing of flavors in the mouth occurs in the exhalation phase of breathing and is perceived differently by an individual. In other words, the smell of food is different depending on whether one is smelling it before or after it has entered one's mouth.

Taste

While salt and sugar can technically be considered flavorants that enhance salty and sweet tastes, usually only compounds that enhance umami, as well as other secondary flavors, are considered and referred to as taste flavorants. Artificial sweeteners are also technically flavorants.

Umami or "savory" flavorants, more commonly called taste or flavor enhancers, are largely based on amino acids and nucleotides. These are typically used as sodium or calcium salts. Umami flavorants recognized and approved by the European Union include:

Glutamic acid salts This amino acid's sodium salt, monosodium glutamate (MSG), is one of the most commonly used flavor enhancers in food processing. Mono- and diglutamate salts are also commonly used.

Glycine salts Simple amino acid salts typically combined with glutamic acid as flavor enhancers

Guanylic acid salts Nucleotide salts typically combined with glutamic acid as flavor enhancers

Inosinic acid salts Nucleotide salts created from the breakdown of AMP, due to high costs of production, typically combined with glutamic acid as flavor enhancers

5'-ribonucleotide salts Nucleotide salts typically combined with other amino acids and nucleotide salts as flavor enhancers

Certain organic and inorganic acids can be used to enhance sour tastes, but like salt and sugar, these are usually not considered and regulated as flavorants under law. Each acid imparts a slightly different sour or tart taste that alters the flavor of a food.

Acetic acid Gives vinegar its sour taste and distinctive smell

Ascorbic acid Found in oranges and green peppers and gives a crisp, slightly sour taste, better known as vitamin C

Citric acid Found in citrus fruits and gives them their sour taste

Fumaric acid Not found in fruits, used as a substitute for citric and tartaric acid

Lactic acid Found in various milk or fermented products and give them a rich tartness

Malic acid Found in apples and gives them their sour/tart taste

Phosphoric acid Used in some cola drinks to give an acid taste

Tartaric acid Found in grapes and wines and gives them a tart taste

Color

The color of food can affect one's expectations of the flavor significantly. In one study, adding more red color to a drink increased the perceived sweetness, with darker colored solutions being rated 2–10% better than lighter ones, though it had 1% less sucrose concentration.

Restrictions and regulations

Regulations on natural flavoring

UK Food Law defines a natural flavor as:

> A flavouring substance (or flavouring substances) which is (or are) obtained, by physical, enzymatic, or microbiological processes, from material of vegetable or animal origin which material is either raw or has been subjected to a process normally used in preparing food for human consumption and to no process other than one normally so used

The U.S. Code of Federal Regulations describes a "natural flavorant" as:

> The essential oil, oleoresin, essence, or extractive, protein hydrolysate, distillate, or any product of roasting, heating, or enzymolysis, which contains the flavoring constituents derived from a spice, fruit, or fruit juice, vegetable or vegetable juice, edible yeast, herb, bark, bud, root, leaf, or any other edible portions of a plant, meat, seafood, poultry, eggs, dairy products, or fermentation products thereof, whose primary function in food is flavoring rather than nutritional

The European Union's guidelines for natural flavorants are slightly different. Certain artificial flavorants are given an E number, which may be included on food labels.

Dietary restrictions

Food manufacturers are sometimes reluctant to inform consumers about the source and identity of flavor ingredients and whether they have been produced with the incorporation of substances such as animal byproducts. Some flavor ingredients, such as gelatin, are produced from animal products.

Some, such as glycerin can be derived from either animal or vegetable sources. And some extracts, such as vanilla, may contain alcohol. Many Jews, Jains, Hindus, and Muslims adhere to religious dietary laws, and vegans to personal convictions, which restrict the use of animal byproducts and/or alcohol in foods unless subject to oversight and inspection by their respective religious authority or moral beliefs. In many Western countries, some consumers rely on a Jewish kosher pareve certification mark to indicate that natural flavorings used in a food product are free of meat and dairy (although they can still contain fish). The Vegan Society's Sunflower symbol (which is currently used by over 260 companies worldwide) can also be used to see which products do not use any animal ingredients (including flavorings and colorings).

Similarly, persons with known sensitivities or allergies to food products are advised to avoid foods that contain generic "natural flavors" or to first determine the source of the flavoring before consuming the food. Such flavors may be derived from a variety of source products that are themselves common allergens, such as dairy, soy, sesame, eggs, and nuts.

Flavor creation

Food and beverage companies may require flavors for new products, product line extensions (e.g., low fat versions of existing products), or changes in formula or processing for existing products. In 2011, about US$10.6 billion were generated with the sale of flavors; the majority of the flavors used are consumed in processed and packaged food.

Most flavors represent a mixture of aroma compounds, the raw material that is produced by flavor companies. In rare cases, a single synthetic compound is used in pure form. Artificial vanilla flavors vanillin and ethylvanillin are a notable exception, as well as the artificial strawberry flavor (ethyl methylphenylglycidate). The ubiquitous "green apple" aroma is based on hexyl acetate.

The flavor creation is done by a specially trained scientist called a "flavorist", whose job combines scientific knowledge of the chemical palette with creativity to develop new and distinctive flavors. The flavor creation begins when the flavorist receives a brief from the client. In the brief, the clients attempt to communicate exactly what type of flavor they seek, in what application it will be used, and any special requirements (e.g., must be all natural). The communication barrier can be quite difficult to overcome since most people are not experienced at describing flavors. The flavorist uses his or her knowledge of the available chemical ingredients to create a formula and compound it on an electronic balance. The flavor is then submitted to the client for testing. Several iterations, with feedback from the client, may be needed before the right flavor is found.

Additional work may also be done by the flavor company. For example, the flavor company may conduct sensory taste tests to test consumer acceptance of a flavor before it is sent to the client or to further investigate the "sensory space". The flavor company may also employ application specialists who work to ensure the flavor will work in the application for which it is intended. This may require special flavor delivery technologies that are used to protect the flavor during processing or cooking so that the flavor is only released when eaten by the end consumer.

Determination

Few standards are available or being prepared for sensory analysis of flavors. In chemical analysis of flavors, solid phase extraction, solid phase microextraction, and headspace gas chromatography are applied to extract and separate the flavor compounds in the sample. The determination is typically

done by various mass spectrometric techniques. A flavor lexicon can aid the development of objective language for food.

CHECK YOUR PROGRESS

Explain the concept of food flavoring agents.
Describe the various types of flavoring substances as defined by EU and Australia.
Elaborate the definition of Natural flavoring substances.
Elaborate the definition of Nature-identical flavoring substances.
Elaborate the definition of **Artificial flavoring substances**.
Distinguish between Natural flavoring substances and Nature-identical flavoring substances.
Why do some people believe that artificial flavors may be safer to consume than natural flavours.
Explain the concept of Umami flavor and umami Flavorants.
Discuss the Umami Flavorants recognized and approved by the European Union.
Elaborate the restrictions on Flavorants as per various regulations.
How does the UK regulation define natural Flavorants?
What is the definition of natural flavorant as per US FDA?
Explain the dietary regulations on artificial Flavorants.
Describe the concept of flavor creation.
Discuss the determination of standards for food Flavorants.

4.07 END QUESTIONS

The following questions should help you prepare for the End Examinations. These questions are for 5 marks each and should take you 11 minutes under examination conditions.

1. Describe the concept of Souring agents.
2. List and briefly describe at least five souring agents used in Indian cuisine.
3. Describe tomato used as a souring agent in Indian cuisine.
4. Describe Kachampuli Vinegar used as a souring agent in Indian cuisine.
5. Describe Kachri Powder used as a souring agent in Indian cuisine.
6. Describe Pomegranate Seeds used as a souring agent in Indian cuisine.
7. Describe Yoghurt or Curd used as a souring agent in Indian cuisine.
8. Describe Kokum used as a souring agent in Indian cuisine.
9. Describe Amchoor used as a souring agent in Indian cuisine.
10. Describe Tamarind used as a souring agent in Indian cuisine.
11. Describe the concept of curd.
12. Explain the concept of yoghurt.
13. Elaborate on vinegar and their various types**.**
14. Explain how vinegar is prepared.
15. Describe the features of apple cider vinegar.
16. Describe the features of Balsamic vinegar.
17. Describe the features of Cane Vinegar.
18. Describe the features of Chinese vinegar.
19. Describe the features of Black Rice vinegar.
20. Describe the features of Ladchen vinegar.
21. Describe the features of **Red Rice** vinegar.
22. Describe the features of White Rice Vinegar.

23. Describe the features of Coconut vinegar.
24. Describe the features of Date vinegar.
25. Describe the features of Flavored vinegar.
26. Describe the features of Fruit vinegar.
27. Describe the features of Grape vinegar.
28. Describe the features of **Lemon** vinegar.
29. Describe the features of Malt vinegar.
30. Describe the features of **Palm** vinegar.
31. Describe the features of **Rice** vinegar.
32. Describe the features of **White distilled** vinegar.
33. Describe the features of **Wine** vinegar.
34. Describe the features of **Red & White Wine** vinegar.
35. Describe the features of **Champaign** vinegar.
36. Describe the features of **Chianti** vinegar.
37. Describe the features of **Sherry** vinegar.
38. Describe the features of **Champaign** vinegar.
39. Describe the features of **Champaign** vinegar.
40. Explain the concept of coloring agent
41. Describe the purpose of food coloring.
42. Elaborate the history of food coloring.
43. Discuss the need of regulation of food colorants.
44. Explain the history of regulation in food colorants.
45. What is the status of food colorants regulation in US?
46. What is the need for global harmonization of the regulation of the food colorants?
47. Explain the natural food colorants.
48. Explain why artificial colorants have been criticized.
49. Explain the concept of thickening agents.
50. Describe the various substances used as food thickening agents.
51. Elaborate the care to be taken while using food thickeners.
52. Discuss the need of regulation of food colorants.
53. Explain the concept of gelling agents and mention various examples.
54. Describe the use of Masala paste as thickening agent in Indian cuisine.
55. Discuss the use of Nut Pastes as thickening agent in Indian cuisine.
56. Elaborate the use of Seed Pastes as thickening agent in Indian cuisine.
57. Explain the use of Lentils as thickening agent in Indian cuisine.
58. Elaborate the use of as Dairy Products thickening agent in Indian cuisine.
59. Describe the use of Vegetable Purees as thickening agent in Indian cuisine.
60. Discuss the use of Onion Pastes as thickening agent in Indian cuisine.
61. Explain the concept of food tendering agents.
62. Describe the various substances used as food tendering agents.
63. Elaborate the various ways to tender meat.
64. Discuss the concept of marination.
65. Explain the process of breaking down of tissues of meat during marination.
66. Describe the safety precautions while marinating meat.
67. Discuss the concept of Maceration of food.
68. Discuss the difference between Maceration and Marination of food.
69. Elaborate the use of meat mallet for tendering the meat.
70. Explain the concept of food flavoring agents.
71. Describe the various types of flavoring substances as defined by EU and Australia.

72. Elaborate the definition of Natural flavoring substances.
73. Elaborate the definition of Nature-identical flavoring substances.
74. Elaborate the definition of **Artificial flavoring substances**.
75. Distinguish between Natural flavoring substances and Nature-identical flavoring substances.
76. Why do some people believe that artificial flavors may be safer to consume than natural flavours.
77. Explain the concept of Umami flavor and umami Flavorants.
78. Discuss the Umami Flavorants recognized and approved by the European Union.
79. Elaborate the restrictions on Flavorants as per various regulations.
80. How does the UK regulation define natural Flavorants?
81. What is the definition of natural flavorant as per US FDA?
82. Explain the dietary regulations on artificial Flavorants.
83. Describe the concept of flavor creation.
84. Discuss the determination of standards for food Flavorants.

4.08 REFERENCES

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