

ISSN 0254-8755

Volume 33

Number 3

July-September 2015

www.cajonline.org

INTERNATIONAL JOURNAL OF

# TROPICAL AGRICULTURE

## *IJTA*



SERIALS PUBLICATIONS (P) LTD.  
NEW DELHI (INDIA)

*National Academy of Agricultural Science  
(NAAS) Rating : 3.03*



51. Pattern of Genetic Diversity and Variability in Greengram (*Vigna Radiata* L. Wilczek) ..... 2251-2257  
Genotypes for Morpho-Physiological Traits and Seed Yield Under Rainfed Condition  
M. K. Sarma, R. K. Goswami, H. Choudhury, Mayuri Baruah  
P. Neog, D. Sharma and P. K. Sarma
52. Studies on Yield and Quality Improvement of Tomato through Organic Nutrition ..... 2259-2265  
P. H. Gourkhede, A. S. Dhawan and A. J. Tambe
53. Effect of Inmon Yield, Soil Properties and Nutrient Uptake of Tomato ..... 2267-2274.  
P. H. Gourkhede, A. S. Dhawan and A. J. Tambe
54. Inheritance of Biophysical traits in *rabi* Sorghum ..... 2275-2277  
Rekha Chittapur, Biradar B. D. & Salimth P. M.
55. Growth and Yield of Soybean Varieties as Influenced by Dates of Sowing ..... 2279-2281  
B. V. Asewar, Khazi G. S., Nayak S. K. and Hakimullah Azizi
56. Growth and Development Pattern of Soybean Genotypes Under Different Fertilizer ..... 2283-2287  
Levels and Spacings  
Khazi G. S., Narkehde W. N. and Garud H. S.
57. Effect of seed rate and different spacing on rice grain yield under aerobic situation ..... 2289-2292  
(*Oryza sativa* L.)  
K. T. Jadhav, S. K. Nayak, Khazi G. S. and N. U. Ambhore
58. Effect of Land Configuration and Nutrient Management on Productivity of Bt Cotton ..... 2293-2297  
W. N. Narkhede, S. K. Nayak, Khazi G. S. and B. H. Jaware
59. Effect of organic MANURES and inorganic fertilizers on FLOWERING AND FRUIT SET ..... 2299-2301  
of brinjal (*Solanum melongena* L.) Cv. Puneri Kateri  
M. G. Rakhonde, D. M. Naik and Garud H. S.
60. Yield and quality of brinjal (*Solanum melongena* L.) Cv. Puneri Kateri Influenced By organic ..... 2303-2305  
and inorganic fertilizers  
M. G. Rakhonde, D. M. Naik and Garud H. S.
61. Path Analysis Studies in Association with Quantitative and Qualitative Traits in Sorghum ..... 2307-2310  
Rekha Chittapur, Biradar B. D., G. M. Sajjanar & V. S. Vyakarnal
62. Soil Physical Environment in Long Term Fertilizer Experiment on Typic Haplusterts in ..... 2311-2314  
Sorghum-wheat Cropping Sequence  
Prajakta M. Metkari, Suresh S. Kharat and Papita H. Gourkhede
63. Soil Productivity as Influenced by Long Term Fertilization and Cropping System ..... 2315-2318  
Prajakta M. Metkari, Suresh S. Kharat and Papita H. Gourkhede
64. "Establishment of correlation between N fractions with soil properties in Soils of Tuljapur ..... 2319-2326  
tahsil of Osmanabad District"  
Narale S. H. and Gourkhede P. H.
65. "Study of correlation between S fractions with soil properties in Soils of Tuljapur tahsil of ..... 2327-2334  
Osmanabad District"  
Narale S. H., Gajbhiye B. R. and Gourkhede P. H.
66. Groundwater Development and Use in Agriculture in India ..... 2335-2343  
Ishita Singh
67. Studies on post - harvest deterioration in promising sugarcane clones ..... 2345-2347  
Sujatha T. and Jhansi K.
68. Isolation and Molecular Characterization of Indian Isolates of Nematode Trapping Fungi ..... 2349-2359  
Delisha Patel, Ramesh Pandit, Anju Kunjadia
69. Citrus improvement through selection and mutagenesis: Constraints and opportunities ..... 2361-2366  
A. A. Murkute and I. P. Singh
70. Yield gap analysis through Front Line Demonstration in Castor (*Ricinus communis* L.) ..... 2367-2371  
crop in Chitradurga districts of Karnataka  
Kumar Naik, A.H., Rudramuni, T., Hanumantha Naik, G and Chandrappa, D
- \* [ 71. Input Management for Sustainable Agricultural Systems ..... 2373-2377 ]  
Rajendra Madhav Wagh

## Input Management for Sustainable Agricultural Systems

Rajendra Madhav Wagh\*

**ABSTRACT:** Low input farming systems (LIFS) can be defined as those which maximize the use of on-farm inputs. Compared to farming systems heavily relying on off-farm bought inputs (thus high input farming systems or HIFS), LIFS will have a physical productivity limited by the maximum on-farm resources that can be mobilized. LIFS can then be associated with lower output. The paper addresses the issue why LIFS should be considered as a core option for India. Indeed, at the farm level, LIFS might have a higher efficiency than HIFS. In addition, from an environmental point of view, not only are LIFS able to reduce pollutions risks but allow producing positive amenities in terms of landscape and biodiversity as well. Despite these assets, the paper shows how, in the long term, the technical and economic competition between farming systems entails the advantage of HIFS upon LIFS.

More precisely, the inter-regional competition can be analyzed through a 'cerealization' process of the whole agriculture: more cereals produced upstream, with more incorporation into the livestock sector downstream. On-farm resources and closed nutrient cycles (LIFS) are progressively replaced by off-farm resources and opened cycles (HIFS). Developing LIFS at Indian scale needs radical changes in the policy. Notably, while decoupling has been thought as a way to promote LIFS, the analysis proposed shows that the competition mechanisms are likely to achieve the opposite results. A CAP reform targeted on LIFS evenly distributed on the Indian territory is what is at stake in order to reach a sustainable Indian agriculture.

**Key words:** Input Management, Sustainable Agricultural Systems, Input

### INTRODUCTION

The concept of two global commonalities—biological diversity and nutrient cycling among agro ecosystems is supported by the literature on ecosystems and their management anecdotal account of indigenous practices, and the rapidly emerging literature on agro ecology. Organic matter is the basis of all bio-geo chemical cycles. The fundamental issues concerning efficient use of organic matter are leakage of nutrients from agro ecosystems and the rates of decomposition. Organic matter and the nutrients it contains are lost from soils by run off and mineralization, both of which can be controlled by appropriate tillage practices. Loss of nutrients to mineralization is also controlled by assuring sufficient inputs of plant or animal material to maintain the soil organic matter (SOM) reserves. Legumes are important in maintaining SOM and increasing soil N suffer. In addition, they protect the soil from run off water and wind erosion and improve infiltration, agro forestry

systems use leguminous and other trees to provide alternative crops, produce animal forage and fuel, recycle nutrients for crop use and protect soil from wind and water erosion.

Plant biodiversity plays an important role in pest, disease, and weed management. Crop rotations are effective in controlling pests, diseases and weeds. Living mulches control weeds and minimize the need for herbicides; Increases in structural diversity within the crop canopy leads to greater diversity in insects and less damage from insect pests.

Integration of animals into Agro ecosystems offers further diversity and stability. Integration of animals facilitates nutrients movement and increases the opportunities for efficient nutrient management across the whole farm system. Animals increase overall net productivity of the farm and reduce environmental degradation by serving as alternatives to crops on the marginal areas of farms by utilizing crop residues as feed.

\* Assistant Professor, School of Agricultural Sciences Yashwantrao Chavan Maharashtra Open University, Dnyangangotri Near Gangapur Dam, Nashik-422222, Maharashtra, (India), E-mail: wagh\_rm@ycmou.digitaluniversity.ac