

# Division of Land and Water Management

## Personal Details



Dr. Manibhushan  
Principal Scientist (Computer Application in Agriculture)

Address : ICAR Research Complex for Eastern Region P.O. Bihar  
Veterinary College, Patna- 800014 (Bihar)

Email-ID: [manibhushan@icar.gov.in](mailto:manibhushan@icar.gov.in); [mani\\_patna2000@yahoo.com](mailto:mani_patna2000@yahoo.com)

## Research Interest

Computer programming, Database, Information System, Decision Support System, Optimization, Remote Sensing and Geographic Information System in agriculture

## Research Highlights

Development of decision support system for pressurized irrigation system, information system on package of practice of different crops and integrated farming system models, water resource database of Bihar, Jharkhand and West Bengal, land suitability maps for different crops of Madhubani, East Champaran and Purnea districts of Bihar, Land use and land cover maps of East and West Champaran, Evaluation and optimization of already developed model of integrated farming system at IACR-RCER, Patna, ICAR RCER FSRHPR, Ranchi.

## Memberships / Fellowships

1. Life member, Society for Upliftment of Rural Economy (SURE), Varanasi
2. Life member, Biospectra Research Journal, Ranchi (Jharkhand)
3. Life member of Society of Tropical Agriculture, New Delhi

## Technology Developed

1. Database on water resources
2. Decision Support System on PIS
3. Information System on package of practices of different crops
4. Land suitability maps for different crops of Madhubani, East Champaran and Purnea
5. Land use and land cover maps of East and West Champaran
6. Optimization model of IFS for getting maximum return

## Publication Details

### Research Papers

1. **Manibhushan**, Subash N., Kumar Abhay, Batta R.K., Kumar Sanjeev and Rahman A. 2006. Relational Database Management of Water Resources and Crop Production in Bihar State, International Journal of Tropical Agriculture, Vol.24 No. 3-4, 359-365.

2. **Manibhushan**, Kumar Abhay, Bhatnagar P.R. Batta R.K. and Das P.K.2007. Development of

Spatial and Attribute Databases for Water Resources Including Relational Database Properties  
International Journal of Tropical Agriculture, Vol. 25 No. 1-2, 283-293.

3. Kumar Sanjeev, Shivani, Singh V.P. and **Manibhushan**.2007.Soil-water-plant Relationship in Winter Maize as Affected by Different Tillage Methods and Irrigation in North Bihar, International Journal of Tropical Agriculture, Vol. 25 No. 1-2, 43-49.

4. Singh Anil Kumar, Verma V.S., Nigam H.K., **Manibhushan**, Chandra N. and Bharati R.C.2009. Growth, Development, Yield Attributes and Yield of Upland Rice (*Oryza sativa*) under Various Environmental Conditions and Genotypes, Environment and Ecology, Vol. 27 (2A): 880-884, 2009.

5. **Manibhushan**, Patel Nilanchal and Sahoo Gadadhar 2011. Artificial Neural Network: A tool for Classification of Land Use and Land Covers Using Satellite Images. *International Journal of Computer Science and Information Technology*. **4** :(2) 55-59.

6. Singh, A.K., **Manibhushan**, Meena, M.K. and Upadhyaya, A. (2012). Effect of Sulphur and Zinc on Rice Performance and Nutrient Dynamics in Plants and Soil of Indo Gangetic Plains, Journal of Agricultural Science; Vol. 4 No.11, pp. 162-170.

7. Singh, A.K., **Manibhushan**, Bhatt, B.P. and Upadhyaya, A. (2012). An Analysis of Oilseeds and Pulses Scenario in Eastern India during 2050-51, Journal of Agricultural Science; Vol. 5 No. 1, pp. 241-249.

8. **Manibhushan**, Patel, N., Sahoo, G. and Singh, A.K. (2013). Image Classification for Different Land Use and Land Covers Using Fuzzy Logic for Improvement of Accuracies, Journal of Agricultural Science; Vol.5 No. 3, pp. 278-283.

9. **Manibhushan**, Patel, N., Sahoo, G. and Singh, A.K. (2013). Image Classification for Different Land Use and Land Covers Using Fuzzy Logic for Improvement of Accuracies, Journal of Agricultural Science; Vol.5 No. 3, pp. 278-283.

10 **Manibhushan**, Patel Nilanchal and Sahoo Gadadhar. 2013. "Land use and land cover classification of individual and stacked satellite images using supervised maximum likelihood method", *Advances in Applied Research*, Vol.5, No.1, pp 9-13.

11. **Manibhushan**, Patel Nilanchal and Sahoo Gadadhar. 2013. " A Fuzzy Approach for Urban Land Use and Land Cover Classification to Enhance Producer's Accuracy", *International Journal of Tropical Agriculture*, Vol. 31, No. 1-2, pp 27-32.

12. **Manibhushan**, Sahoo Gadadhar and Patel Nilanchal. 2013. " Spectral Mixture Analysis- A Tool for Classification of Mixed Pixels of Satellite Images", *International Journal of Tropical Agriculture*, Vol. 31, No. 1-2, pp 33-37.

13. Singh, A.K., Bharati, R.C., Chandra, N., **Manibhushan** and Pedpati A. 2013. An assessment of faba bean (*Vicia faba* L.) current status and future prospect. African Journal of Agricultural Research, Vol. 8(50), pp 6634-6641.

14. Singh, A.K., Bhatt, B.P., Singh, K.M., Kumar Abhay, **Manibhushan**, Kumar Ujjwal, Chandra, Naresh and Bharati, R.C.2013. Dynamics of Powdery Mildew (*Erysiphe trifolii*) Disease of Lentil Influenced by Sulphur and Zinc Nutrition, Plant Pathology Journal, Vol. 12(2), pp 71-

77.

15. Singh, A.K., Bhatt, B.P. and **Manibhushan** 2013. " Occurrence of phytoplasma phyllody and witches' broom diseases of faba bean in Bihar" Journal of Environmental Biology, Vol. 34 No. 5 pp 837-840.

16. Singh AK, Kumar P and N Chandra.2013.Studies on yield production of mung bean (*Vigna radiate*) sown at different dates. J. Environ. Biol.34: 1007-1011. 3.

17. **Manibhushan**, Upadhyaya A, Singh A.K, Batta R.K, Singh Anil Kumar, Rahman A and Kumar Sanjeev 2014. Decision support system for design, layout and cost estimation of pressurized irrigation system, International Journal of Agricultural and Statistical Sciences, Vol. 10, No. 1, pp 231-236, ISSN: 0973- 1903.NASS Score-6.0.

18. **Manibhushan**, Sahoo Gadadhar, Patel Nilanchal and Kumar Sanjeev 2014. Land use and land cover classification using artificial neural network for improving accuracy, International Journal of Agricultural and Statistical Sciences, Vol. 10, Supplement 1, pp 27-31, ISSN: 0973-1903.NASS Score-6.0.

19. Anil Kumar Singh, Annitaa Pedapati and **Manibhushan** 2015. " Assessment of exchange of crop in view of change climate and International Treaties" Journal of Environmental Biology, Vol.36,309-317, pp 309-317. 2. ISSN: 0254-8704, NASS Score-7.1.

20. Singh S K, Kumar Ajay and **Manibhushan** 2015. " Productivity and economics of mentha (*Mentha arvensis*) okra-potato cropping system as influenced by irrigation and fertility levels under drip irrigation" Green Farming Vol. 6(1): pp 114-116. ISSN 0974-0775, NAAS Score: 4.79.

21. Singh A.K., **Manibhushan**, Chandra Naresh and Bhakta Narayan 2015. Extent and pattern of diversity in saffron germplasm of Indian Kashmir. Bangladesh Journal of Botany, Vol. 44(4): 635-642, ISSN:0253-5416, NAAS Score-6.13.

22 **Manibhushan**. (2016). Soil analysis including the status of ground water availability for increasing crop production. *International Journal of Tropical Agriculture*, 34 (5), 1399-1401. **NAAS Score-3.49**.

23. Anil kumar Singh, N.Bhakta and **Manibhushan**. 2017. "Diversity analysis of faba bean (*Vicia faba* L.) germplasm of Bihar using agro- morphological characteristics". Bangladesh Journal of Botany. 46(4): 1249-1257 (December). **NAAS Score: 6.23**

24. S.K.Singh, **Manibhushan** and Ajay Kumar. 2018. "Organic linsed (Tisi) farming: a step towards doubling farmer's income", Indian Farming. 68(01), 55-58. January, 2018.

**25. Manibhushan**. 2018. Spatial database management system for standing water resources using relational properties, *International Journal of Tropical Agriculture*, ISSN-0254-8755. Vol.36 No.4. NAAS Score: **3.49**.

26. **Manibhushan**, Anil Kumar Singh, S Mondal and N Chandra. 2019. Land suitability analysis based on soil properties and GIS for improving rice productivity in Bihar. India. Bangladesh Journal of Botany, 48(2): 221-227. **NAAS Score: 6.21**.

27. **Manibhushan** and Ahmed Akram. 2019. "Evaluation of integrated farming system model according to appropriate land allocation", *International Journal of Tropical Agriculture*, ISSN-0254-8755, Vol.37 No.4. 599-603, NAAS Score: **3.49**.

28. Ahmed Akram, Kumari Arti, **Manibhushan**, Mondal S. and PawanJeet.2019. "Use of IoT based irrigation scheduling for smart farming", *Krishisewa*, 18 June 2019.

29. Kumari Arti, Kumari Subha, Koley T.K., Ahmed Akram and **Manibhushan**, 2020. "Recent Advances in Irrigation Scheduling to enhance Agricultural Water Productivity", *Food and Scientific Reports*, Vol. 1, 8-10, ISSN 2582-5437, January 2020.

### **Books**

Singh AK, Bhakta N, Sangale UR, **Manibhushan**, Sundaram PK, Kumar S and Yasin JK. 2018. *Scientific Lentil Production*, ISBN: 978936200518. Society for Upliftment of Rural Economy Varanasi, XX +669 p.

### **Award and recognition**

1. I received **young scientist** award in national conference held on **24-26 October, 2013** on 'Recent Advances in Modern Biology & Sericulture for Women Empowerment and Rural Development' at Karnataka State Sericulture Research and Development Institute, Bengaluru, Karnataka.
2. I received SURE Associate Fellow of Society Award 2015 in the national conference held on **12-13 March, 2016** on "Rural Livelihood Security through Innovative Agri-entrepreneurship" at Central Potato Research Station, Patna.
3. Received **best research paper presentation award** in the International Conference on Agriculture, Horticulture and Plant Sciences from 25-26 June, 2016 at New Delhi organised by Academic Research Journals (IJTA), New Delhi.
4. Got **Senior Scientist award** given by Professional society namely MSET-ICCB (International Consortium of Contemporary Biologist) in an international conference entitled "Global Scenario of Life Science, Agriculture, Nursing and Medical Research for the welfare of Rural and Urban Folk (GOSLANRUF)" held during 03-05 December, 2017 at METAS Adventist College, Ranchi.
5. **Received Best research paper presentation award** given by the society of Tropical Agriculture, International Journal of Tropical Agriculture (IJTA) in 8<sup>th</sup> "International Conference on Agriculture, Horticulture and Food Science (ICAHFS)" from 29-30<sup>th</sup> December, 2018 at Hotel Hans, New Delhi
6. Received **outstanding scientist and best research paper award** given by the society of Tropical Agriculture, International Journal of Tropical Agriculture (IJTA) in 10<sup>th</sup> "International Conference on Agriculture, Horticulture and Food Science (ICAHFS)" from 21-22<sup>nd</sup> December, 2019 at Hotel Hans, New Delhi