

Format for Scientist/technical/Administrative staff profile

1. Name : Monoranjan Mohanty
2. Designation: Pr. Scientist
3. Education: MSc (Soil Science and Agricultural Chemistry), PhD (Soil Science)
4. Major research areas: Crop Simulation Modelling, Climate Change and Conservation Agriculture
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6. Professional experience:

- Optimization of puddling in rice for maximum yield benefits and minimizing the adverse effect on soil physical condition in vertisols
- Development of a new methodology for soil quality assessment in term of soil quality index (SQI) for rice-wheat system in vertisol of central India
- Modelling seedling emergence and growth of rice and wheat as influenced by tillage and residue management
- Enhancing soil water storage and water use efficiency of *rainfed* soybean in a Vertisol of central India through Subsoiling
- Integrated nutrient management in soybean-wheat cropping system in the state Madhya Pradesh
- Modelling N mineralization green manure and farmyard manure from subtropical central India
- Modelling soybean-wheat cropping system of central India for better N management using APSIM model
- Climate change impact on soybean, maize, chickpea and wheat productivity of Madhya Pradesh:- simulation approaches
- Root growth, architecture and modelling

7. Awards:

- (1) **Fellow (John Allwright, Year 2006) of Australian Council for International Agricultural Research (ACIAR)**, Canberra, Australia.
- (2) Awarded **Academy for the Advancement of Agricultural Sciences (AAAS) Junior Award 2006** from **Indian Society of Plant Physiology (ISPP)**, IARI, New Delhi for exceptional contribution in the field of **Soil Science** research.
- (3) **The Golden Jubilee Commemoration Young Scientist Awards 2008** from **Indian Society of Soil Science, New Delhi** for in recognition of the work “**Development and standardization of tillage and crop residue management practices for improving water storage and transmission characteristics, soil quality and productivity of Vertisols**”.
- (4) **The 2013 Fertilizer Association of India (FAI) Golden Jubilee Award for Excellence** for the best work done in the field of “**Nutrient Management in Wheat**” from FAI, New Delhi, India.

- (5) **Best poster** award for “*Characterizing rooting behaviour of chick pea under different tillage system*” by Nishant K. Sinha, **M. Mohanty**, J. Somasundram, R. Saha, R.K. Singh, K.M. Hati, R.S. Chaudhary and A. Subbrao under the theme of Global Agronomy - Agronomy beyond Borders in **3rd International Agronomy Congress** “Agriculture Diversification, Climate Change management and Livelihoods” was held on 27 to 29th November, 2012 at IARI, New Delhi.
- (6) International crop simulation modelling training on **Agro-ecosystem Production Simulator (APSIM) Model** during 24 to 25 October 2006, in Toowoomba, Queensland, Australia.
- (7) International crop simulation modelling training on **Agro-ecosystem Production Simulator (APSIM) Model** during 29 to 30 July 2008, in Toowoomba, Queensland, Australia
- (8) International training on “**Advance Course on Conservation Agriculture: Gateway for productive and sustainable cropping systems**” organized during 17-31 October 2013 at **Borlaug Institute for South Asia (BISA)**, Ludhiana India.

(a) Publications (Ten best publications):

- 1) **Mohanty, M.**, Probert, M.E., Sammi Reddy, K., Dalal, R.C., Subba Rao, A., Menzies, N.W., Simulating soybean–wheat cropping system: APSIM model parameterization and validation *Agriculture, Ecosystems & Environment* 152, 68-78.
- 2) **Mohanty, M.**, Sammi Reddy, K., Probert, M.E., Dalal, R.C., Subba Rao, A., Menzies, N.W., 2011. Modelling N mineralization from green manure and farmyard manure from a laboratory incubation study. *Ecological Modelling*, 222, 719–726.
- 3) **Mohanty, M.**, Painuli D.K., 2004. Modeling rice seedling emergence and growth under tillage and residue management in a rice-wheat system on a Vertisol in Central India. *Soil and Tillage Research*, 76, 167-174.
- 4) **Mohanty M.**, Painuli D.K., Mandal K.G., 2004. Effect of puddling intensity on temporal variation in soil physical conditions and yield of rice (*Oryza sativa* L.) in a Vertisol. *Soil and Tillage Research*, 76, 83-94.
- 5) **Mohanty, M.**, Painuli, D.K., Misra, A.K., Bandyopadhyay, K.K., Ghosh, P.K., 2006. Estimating impact of puddling, tillage and residue management on wheat (*Triticum aestivum*, L.) seedling emergence and growth in a rice-wheat system using nonlinear regression models. *Soil and Tillage Research*, 87(1), 119-130.
- 6) **Mohanty, M.**, Painuli, D.K., Misra, A.K., Ghosh, P.K., 2007. Soil quality effects of tillage and residue under rice-wheat system on a Vertisol in India. *Soil and Tillage Research*, 92, 243-250.
- 7) **Mohanty, M.**, Bandyopadhyay, K.K., Painuli, D.K., Ghosh, P.K., Misra, A.K., Hati, K.M., 2007. Water transmission characteristics of a Vertisol and water use efficiency of rainfed soybean (*Glycine max.* L.) under subsoiling and manuring. *Soil and Tillage Research*, 93, 420-428.
- 8) **Mohanty, M.**, Probert, M.E., Sammi Reddy, K., Dalal, R.C., Subba Rao, A., Menzies, N.W., 2011. Modelling N mineralization from high C:N ratio crop residues. *Agrochimica*, 54, (2), 1-15.
- 9) **Mohanty M.**, Painuli, D.K., 2004. Land preparatory tillage effect on soil physical environment and growth and yield of rice in a Vertisol. *Journal of Indian Society of Soil Science*, 51 (3), 223-228.
- 10) **Mohanty, M.**, Sinha, N.K., Sammi Reddy, K., Chaudhary, R. S., Dalal, R.C., Subba Rao, A., Menzies, N.W. 2013. How important is the quality of organic amendments in relation to mineral N availability in soils? *Agricultural Research*, 2, 99-110.