

Dr. KARTHIKA M



Designation: Assistant Professor of Agronomy

Education: Ph.D. in Agriculture

Specialization: Agronomy

Research: Nutrient Management, Mechanisation

Scientific publications/Books/Conferences/Patents

1. Naik, B. M., Pandey, S. T., Bhatnagar, A., Chandra, S., Kumar, R., **Karthika, M.**, Reddy, K. S., & Pramanick, B. 2026. Biostimulant-based nutrient management for energy-efficient and low-carbon mustard cultivation: a life cycle assessment approach for sustainable development. *Scientific reports*. 16: 17500. <https://doi.org/10.1038/s41598-026-48219-6>
2. Naik, B. M., Pandey, S. T., Bhatnagar, A., Chandra, S., Kumar, R., **Karthika M.** Reddy, K. S., & Nandipamu, T. M. K. 2026. Optimizing nutrient application with vrikshayurveda-based herbal kunapajala concoctions: a sustainable solution for enhancing the productivity of Indian mustard (*Brassica juncea* L.). *Indian Journal of Traditional Knowledge* 25 (1): 63-73
3. **Karthika Muthumanickam**, Sanjay Kumar Chaudhary, Shiveshwar Pratap Singh, Rajan Kumar & Banavath Mahesh Naik. 2022. Combined application of chemical fertilizers, organics and foliar spray of zinc and iron on yield, quality and water productivity of aerobically grown rice (*Oryza sativa*) in calcareous soil. *Journal of Plant Nutrition* 46 (13): 2990-3001.
4. **Karthika Muthumanickam**, K Bhanu Rekha, Sudhanshu Kasbe, Madhavi A, Triveni, S and Rajiah, A. 2024. Soil enzymatic activity, nutrient dynamics and biplot analysis under varied plant population and nutrient management in machine-planted chickpea. *Current Science* 126 (10): 1273-1279.
5. **Karthika Muthumanickam**, K Bhanu Rekha, Sudhanshu Kasbe, Madhavi A, Triveni, S and Rajiah, A. 2024. Nodulation, yield and economics of machine planted chickpea (*Cicer*

- arietinum L.) under varied spacing and nutrient management. *Legume Research* 47 (10): 1737-1743.
6. **Karthika Muthumanickam**, K Bhanu Rekha, Sudhanshu Kasbe, Madhavi A, Triveni, S and Rajiah, A. 2023. The Planter performance under varied seed rate and nutrient management in chickpea. *Indian Journal of Agricultural Sciences* 93 (12): 1350–1355.
 7. **Karthika Muthumanickam**, K Bhanu Rekha, Sudhanshu Kasbe, Madhavi A, Triveni, S and Rajiah, A. 2025. Yield, weed dynamics and nutrient balance of machine-planted chickpea under varying seed rate and nutrient management. *Journal of food legumes* 38(1), 36-42.
 8. **Karthika Muthumanickam**, K Bhanu Rekha, Sudhanshu Kasbe, Madhavi A, Triveni, S and Rajiah, A. 2022. Impact of Seed Rate and Nutrient Management on Growth Analysis of Chickpea under Semi-Arid Zones. *International Journal of Environment and Climate Change* 12 (11): 1268-1276.
 9. **Karthika Muthumanickam**, K Bhanu Rekha, Sudhanshu Kasbe, Madhavi A, Triveni, S and Rajiah, A. 2022. Performance of machine planted chickpea (*Cicer arietinum* L.) as influenced by different seed rates and nutrient management practices in Southern Telangana zone. *The Journal of Research, PJTSAU* 50 (2): 75-83.
 10. **Karthika Muthumanickam**, Sanjay Kumar Chaudhary, Banavath Mahesh Naik & Soundharya N. 2025. Improving Nutrient Uptake and Protein Yield of Rice through Integrated Nitrogen Management and Foliar Fe and Zn Application in Calcareous Soils. *International Journal of Environmental & Agriculture Research* 11 (9): 1-7.
 11. **Karthika Muthumanickam**, Sanjay Kumar Chaudhary, Banavath Mahesh Naik & Soundharya N. 2025. Improving Nutrient Use Efficiency and Soil Fertility of Aerobic Rice (*Oryza sativa* L.) under Integrated Nutrient Management and Micronutrient Foliar Spray in Calcareous Soils. *Journal of Experimental Agriculture International* 47 (10): 320-340.
 12. Yazhini, Gunasekaran, Tamilselvan Ilakiya, Sivalingam Shanmugapriya, Dhakshinamoorthy Durgadevi, Ajaykumar Ramasamy, **Karthika Muthumanickam**, and Jeeva Kasiviswanathan Lekshmi. 2025 Phytogenic Nanoparticles: A Novel Strategy for Sustainable Crop Protection. *Plant Stress*. 18.
 13. Naik, B. M., Pandey, S. T., Bhatnagar, A., Chandra, S., Kumar, R., & **Karthika M.** 2023. Effect of vrikshayurveda based herbal kunapajala and their doses on mustard productivity. *Indian Journal of Oilseeds* 40 (Special Issue).
 14. Sekhar, C., Priyadharshini, M., Gayathri C, P., Lakshmi Priya, S & **Karthika, M.** 2023. An economic appraisal of cultivation of korai grass in Central Tamilnadu. *Horticulture International Journal* 7 (4): 127-137.
 15. Banavath Mahesh Naik, Mritunjay Kumar, **Karthika M**, S K Singh, Navnit Kumar and Nawal Kishor Ray. 2023. Co-implementation of tillage and precision nutrient management practices on crop yield of *kharif* maize (*Zea mays*). *Indian Journal of Agricultural Sciences* 93(10): 1061–1066.

16. Naik, B. M., Kumar, M., Singh, S. K., Karthika, M., & Roy, N. K. 2022. Combined effect of tillage and nutrient management practices on *kharif* maize (*Zea mays* L.) yield and chlorophyll content. *Journal of Crop and Weed* 18(2), 01–06.
17. Adilakshmi, G., Kumar, R., Varalakshmi, P., YN, M. B., & **Karthika, M.** 2021. Nutrient Content and Uptake by Grain and Straw of different rice Varieties at Different moisture Regimes under direct Seeded Condition. *The Pharma Innovation* 10 (5): 561-563.
18. Kumar, M., Naik, B. M., **Karthika, M.**, Kumar, N., & Kumar, A. 2019. Effect of Tillage and Nutrient Management Practices on Yield and Economics of Rice (*Oryza sativa*)–Maize (*Zea mays*) Cropping System in North Bihar. *International Journal of Current Microbiology and Applied Sciences* 8(3): 1365-1370.

Papers presented in Conference:

- Bhavitha Kokkula, **Karthika M**, Vamshi, O And Nirmitha M. Reframing Agricultural Sustainability Through Carbon-Smart Farming Paradigms. National Conference On Agricultural innovation, Sustainability & Leadership For Future India held during 26-28 Febraury, 2026 at Conference Hall, Valmiki Tiger Reserve (VTR), Manguraha, West Champaran, Bihar, India (Online). Pp. 27.
- **Karthika, M.** Evaluation of Planter Performance under Varied Seed Rate and Nutrient Management in Chickpea. International Conference on Rainfed Agriculture: Building Pathways for Resilience & Sustainable Livelihoods during 29-31, January 2025 at ICAR-CRIDA, Hyderabad. Pp. 1273-12766.
- **Karthika M**, Chaudhary S.K, Singh S.P, Kumar R. and Mahesh B. Quality and nutrient uptake of aerobic rice as influenced by integrated nutrient management and micronutrient foliar spray on calcareous soils. 5th International Conference in Hybrid Mode on Innovative and Current Advances in Agriculture & Allied Sciences, Himachal Pradesh University, Summer Hill, Shimla (H.P.), 12th -14th June 2022. pp. 189-190.
- **Karthika M**, Banavath Mahesh naik and B. Bhavana. Crop Simulation Modeling – A Tool of Risk Assessment and Adaptation Strategies Under Changing Climatic Scenario. National Conference on Food & Nutritional Security and Sustainable Agriculture during 15 and 16th April, 2022, Hyderabad. Pp. 217-218.
- **Karthika M**, S.K. Chaudhary, S.P. Singh and Banavath Mahesh Naik. “Performance of aerobic rice (*Oryza sativa* L.) under integrated nutrient management and micronutrients”. Agri-Innovations to Combat Food and Nutrition Challenges, 5th International Agronomy Congress, PJTSAU, Hyderabad, 23-27 November 2021, pp. 1519-1520.
- **Karthika M** and Banavath Mahesh Naik. “Agricultural Mechanization Innovation for Sustainable Agriculture for Farmers’ Prosperity”. Innovation and Agricultural Reforms for Farmers Prosperity, National Youth Convention, PJTSAU, Hyderabad, 20th – 21st February 2021, pp. 218.
- Banavath Mahesh Naik, **Karthika M** and K. Preethika Reddy. “Crop modelling for precise input management in agriculture”. National Webinar on “Approaches towards Development of Rural and Agriculture Sector in the present scenario”, JNKVV, College of Agriculture, Tikamgarh (M.P.), 8-9 May 2020, pp. 86.

- Banavath Mahesh Naik, Sunita T Pandey, **Karthika M** and Sreekanth Reddy K. “Liquid fermented organic manures (Herbal Kunapajala) and their doses to improve mustard productivity”. 4th International conference on Global Efforts on Agriculture, Forestry, Environment and Food Security (Climate Change and Its Impact), Tribhuvan University, Pokhara, Nepal, Vol 2, 17th -19th September, 2022, pp. 278-279.
- Banavath Mahesh Naik, **M. Karthika**, G. Rajitha and K. Sreekanth Reddy. “Resource conservation technology for improving crop productivity”. National Conference for Post Graduate Students on Multidimensional Approaches for Sustaining Food and Nutritional Security, Sri Venkateswara Agricultural College, Tirupati, 4th - 5th February 2021, pp. 72.
- Banavath Mahesh Naik, **Karthika M** and K Sreekanth Reddy. “Precision nutrient management in conservation agriculture-based maize improves the crop yields coupled with soil physical and biological properties”. Agri-Innovations to Combat Food and Nutrition Challenges, 5th International Agronomy Congress, PJTSAU, Hyderabad, 23-27 November 2021, pp. 1392-1393.

Popular articles:

- Ch. Sucharitha, Sriram Vaishnavi, **Karthika M** and Packialakshmi M. 2026. Agroforestry Systems in Telangana: Implications for Sustainable Land Management and Climate Resilience. *The Agriculture Magazine* 05(12): 32-34: ISSN: 2583-1755.
- **Karthika, M.**, Naik, B.M., Varsha, N., Joseph, B And Reddy, A.P.K. 2026. Biochar: A Zero-Waste And Carbon-Negative Resource With Vast Potential. *Agrimagazine* 03(04): 203-207: ISSN: 3048-8656.
- Varsha, N. **Karthika, M.**, Dhanshree B.J., Joseph, B And Reddy, A.P.K. 2026. Eco-Friendly Weed Control: The Science And Scope Of Bioherbicides. *Agrimagazine* 03(05): 562-566: ISSN: 3048-8656.
- **Karthika M** and Banavath Mahesh Naik. 2020. “Application of Crop Models in Agriculture”. Article id: 23840, *Agriculture and Food: e-Newsletters* 2(5): 683-685. ISSN: 2581 – 8317.
- **Karthika M** and Banavath Mahesh Naik. 2020. “Crop Simulation Modeling - A Tool of Risk Assessment and Adaptation Strategies Under Changing Climatic Scenario”. Article id: 30400, *Agriculture and Food: e-Newsletters* 2(7): 01-03. ISSN: 2581 – 8317.
- **Karthika M** and Banavath Mahesh Naik. 2020. “Automatic Irrigation System”. Article id: 32161, *Agriculture and Food: e-Newsletters* 2(10): 471-472. ISSN: 2581 – 8317.
- Banavath Mahesh Naik and **Karthika M**. 2020. “Conservation Tillage for Sustainable Agriculture Production and Eco-Safety”. Article id: 23414, *Agriculture and Food: e-Newsletters* 2(4): 357-360. ISSN: 2581 – 8317.
- Banavath Mahesh Naik and **Karthika M**. 2020. “Precision Agriculture in Indian Farming: Application of Remote Sensing and GIS”. Article id: 31158, *Agriculture and Food: e-Newsletters* 2(8): 435-437. ISSN: 2581 – 8317.
- Karthik, Preethika Reddy, G. Rajitha and **M. Karthika** .2020. Fertigation – A Modern Agricultural Technique. *Rythu Bhandhu* 10 (10): 22-23.

Book Chapters:

- K. Srikanth Reddy, G. Sreeja Reddy, C. M. Parihar, Panneerselvam Peramaiyan, K. Sreenivasa Reddy, Kiranmoy Patra, Ayan Sarkar, Alok Sinha, B. Mahesh Naik, And **M. Karthika**. 2025. Policies And Technological Intervention For Regenerative Agriculture And Carbon Credits To Achieve Carbon-Negative Agriculture. Springer. Pp 59-96.
- Bhavitha, M. Sanjana, **Karthika M** and Banavath Mahesh Naik. 2022. Alternate Crop Residue Management Systems for Doubling Farmers' Income. Integrated Publications, New Delhi. pp. 63-76. ISBN: 978-93-93502-40-7.
- **Karthika M** And Banavath Mahesh Naik. 2022. Nanotechnology In Agriculture: Applications, Challenges And Future Perspectives. Weser Books, Germany. Pp. 37-52. ISBN: 978-3-96492-318-9.
- **Karthika M**, Banavath Mahesh Naik, G. Sanketh And Bhavana B. 2022. Crop Modeling - A Tool Of Risk Assessment For Climate Change And Adaptation Strategies. Mahima Research Foundation And Social Welfare, Banaras Hindu University, Varanasi. Pp. 48-53. ISBN: 978-81-953029-3-2.
- Banavath Mahesh Naik And **Karthika M**. 2022. Integrated Farming System For Rural Livelihood Security And Sustainability Under Changing Climatic Scenario. Integrated Publications, New Delhi. Pp. 105-117. ISBN: 978-93-90471-49-2.
- Banavath Mahesh Naik, **Karthika M**, Bhavitha Kokkula and K Srikanth Reddy. 2022. Zero Budget Natural Farming (ZBNF) – Way Forward for Sustainability. Bright Sky Publications, New Delhi. pp. 45-57. ISBN: 978-93-92804-09-0.

Books:

- Packialakshmi M, Rajput NB, **Karthika M**, Naik BM, Dinesh GK, Chozhan K (2025) *An Introduction to Forestry*. Elite Publishing House.
- **Karthika M**, Naik B M, Sathya T And Srikanth Reddy, K. 2026. Agrochemicals: Science, Technology And Field Applications. Jaya Publishing House. Isbn: 978-93-48927-68-2.