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Leveraging microbial wealth from rural resources for environmentally safe food production

Kavya Dashora, Perminder Kaur, Mansi Mishra, Ayushi Srivastava and Vinayak D Fasake
Center for Rural Development and Technology – IIT Delhi, India

To produce the food for meeting the requirement of growing population, the farmers are using unguarded quantity of chemical pesticides. This has a very serious impact on toxicity at underground water level, flowing water bodies, harvested food and other components of ecosystem. Economically, this increases the input cost of the farming, making it a non-profitable source of livelihood. To address this challenge, a study was conducted at Centre for Rural Development and Technology, Indian Institute of Technology, Delhi, India which included the basic rural resources like cow dung and cow urine for enhancing the soil health and systemic acquired resistance (SAR) in plants. Two samples of fresh cow dung were collected from indigenous cow (Gir variety). One of them was graze fed and other was stall fed. 50 gm of cowdung was taken and serially diluted to 10^{-6} . Similarly fresh cow urine and commercial cow urine distillate were taken from Gir variety of cow and it was also serially diluted 10^{-6} . The cow dung at different dilutions were applied to soil by soil drenching method and cow urine was applied by soaking the seed of susceptible tomato variety. It was seen that the use of cow dung and cow urine not only enhanced soil microbial activity but also helped in increasing systemic acquired resistance in selected tomato plants. The cowdung from graze fed cow variety showed better results as compared to stall fed variety. This study highlights a very encouraging non chemical pest management method obtained through rural resources. The input cost can be significantly reduced by using the cattle resources which are otherwise used for non-wood fuel for rural cook stoves.

kdashora@rdat.iitd.ac.in