Nano-DAP fertilizer with high phosphate uptake efficiency in agronomic application

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Di-ammonium Phosphate (DAP) is a commonly used fertilizer with the source of both Nitrogen and Phosphorous along with 18 other micronutrients. In collaboration with the International Advanced Research Centre for Powder Metallurgy and New Materials (ARCI), a team from the University of Hyderabad, led by Dr. Rahul Kumar, first developed an industrially viable dry method to generate chemically stable and ~5000 times smaller nano-diammonium phosphate (n-DAP) fertilizer. Subsequent testing of both types of fertilizers on tomato and wheat seedlings demonstrated an extraordinary superiority of nano-DAP fertilizer over the conventional granular DAP (c-DAP). By testing four different procedures for the nano-DAP dispersal, the team even recommends the best method of its application.

In the lab-scale experiments, the reduced quantity of nano-DAP fertilizer input than c-DAP promoted the early seedlings growth and development in both crops. It also led to enhanced phosphate uptake efficiency in these seedlings. Based on these promising results in the lab-scale experiments, the research team is now planning to test the efficacy of nano-DAP on tomato plants under field conditions. *Read more (https://herald.uohyd.ac.in/uoh-arci-team-develops-nano-dap-fertilizer-with-enhanced-agronomic-use-efficiency/)*

Technology Developed