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Responsible use of nanofertilizers and nanocarriers in agriculture

ABSTRACT. Nanotechnology is a promising field in every aspect of modern life including agriculture. Nano-agriproducts like nanofertilizers and nanocarriers are becoming a cynosure due to their proposed role in precision agriculture. Nutrients mainly in their nanoforms are used as nanofertilizers and nanoporous materials are helpful for the controlled release of fertilizers, pesticides and semiochemicals. The use of these products is still in its infancy due to the harmful effects of their dissemination in the environment and probable health hazard to all the life forms including human beings. There is an urgent need to develop strict and legislative control strategies for the manufacture of nano-agriproducts in line with general nanomaterial safety guidelines; specific regulation is required for the agriproducts developed with the help of nanotechnology as their use is likely to greatly increase in the near future. Governmental and nongovernmental organizations should work together to augment the use of nanoproducts to enhance crop production.

Keywords: nanomaterials, nanotechnology, regulation

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