

A Review on Coated Value Added Phosphatic Fertilizers for Better Environment

adnan Muhammad¹, Shakeel Ahmad¹, Muhammed Imran¹, and Khuram Mubeen¹

¹Muhammad Nawaz Shareef University of Agriculture

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Abstract

Abstract Plants utilize only up to 25% of the applied phosphatic fertilizers and 75% of the applied phosphatic fertilizers become unavailable due to two major reactions, the adsorption on mineral surface and the precipitation reactions. More and more fertilizers have to be applied exogenously. More energy is required for fertilizer production and transportation by the factories which influence our environment badly. The fixed fertilizers prevails in the environment, causing ecosystem imbalances. More over, phosphatic fertilizers are expensive than nitrogenous and potassic fertilizers, hence need to be managed. There are different techniques to improve fertilizer utilization by plants, however value addition of fertilizers such as surface modifications of fertilizers proved to be more fruitful because these manipulate the supply of nutrients with crop demand. These may slow down, control or stabilize the release of nutrients from the fertilizers by reducing the direct contact of the soil with fertilizer particles. It may become a tool for sustainable production, minimizing the remaining of synthetic chemicals in the environment, by more plants utilization. This paper is an effort to highlight the production processes, different coating materials used, how these value added fertilizers release nutrients in distilled water and in soil and their impact on crop. In the later part of this article, challenges for their adoptions will be discussed. Keywords: Coated fertilizers; Fertilizer use efficiency; Slow release fertilizers; Value addition. Alternate Keywords: Phosphorus utilization enhancement; Phosphorus availability approaches; Uptake techniques; Nutrient use efficiency

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Authors

Muhammad Adnan^{*1,2}, Shakeel Ahmad¹, Muhammad Imran¹, Khuram Mubeen³

Affiliations

¹ Department of Soil & Environmental Sciences, Muhammad Nawaz Shareef University of Agriculture. Multan. Punjab Province. Pakistan

² Agricultural Mechanization Research Institute. Multan. Punjab Province. Pakistan

³ Department of Agronomy, Muhammad Nawaz Shareef University of Agriculture. Multan. Punjab Province. Pakistan

*Corresponding authors:

Dr. Shakeel Ahmad

Phone: 092-300-5060781

E-mail: shakeel.ahmad@mnsuam.edu.pk

Muhammad Adnan

Phone: 092-323-88661807

E-mail: 2019-uam-3706@mnsuan.edu.pk

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