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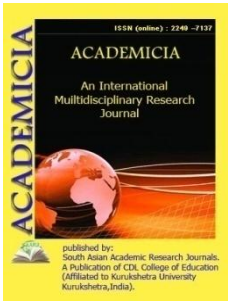

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REVIEW ON ENVIRONMENTALLY FRIENDLY FERTILIZERS

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ABSTRACT

Fertilizer is essential for maintaining soil fertility, boosting yields, and enhancing the quality of harvest. However, a substantial amount of fertilizer is wasted, raising agricultural costs, squandering energy, and damaging the environment, all of which pose difficulties to modern agriculture's long-term viability. Environmentally friendly fertilizers (EFFs) have indeed been created to satisfy the needs of increasing yields without harming the environment. EFFs are fertilizers that slow or even stop the flow of nutrients into the soil, thus reducing pollution caused by nutrient loss. The majority of EFFs are used as coated fertilizers. In this article, we look at current research on the materials in use in EFFs and their environmental impact. The following are the main results discussed in this review: 1) EFF coatings may act as a physical barrier to limit urea contact in water and soil, lowering the rate of urea hydrolysis and reducing nitrogen oxide (NO_x) and nitrogen dioxide (N_2) emissions. 2) EFFs may boost the amount of organic matter in the soil. 3) hydrogel/superabsorbent coated EFFs may buffer soil acidity or alkalinity, resulting in an optimum pH for plants; and 4) hydrogel/superabsorbent coated EFFs can improve soil water retention and holding capacity. Finally, EFFs play an essential role in improving nutrient efficiency and decreasing pollution in the environment.

KEYWORDS: *Agriculture, Environmentally friendly, Nutrient releases, Sustainability, Soil.*

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