



“Gheorghe Asachi” Technical University of Iasi, Romania



COATING FERTILIZER GRANULES WITH BIODEGRADABLE MATERIALS FOR CONTROLLED FERTILIZER RELEASE

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Abstract

Biodegradable chitosan was used to cover fertilizer granules with an inert, impermeable layer in order to obtain a material with controlled release properties. The process was performed in a laboratory drum granulator. Prepared materials were characterized with available analytical methods (XRD, optical microscopy). The layer thickness of the obtained materials was in the range of 0.047 – 0.5425 mm. The degree of nutrients' release (0.64-0.965 within five hours) were determined with standardized method. Exponential, sigmoidal and power equations were used to describe the kinetics of nutrients' release.

Key words: biodegradable materials, controlled release fertilizers, granulation

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