

SUPERABSORBENT POLYMERS WITH THE FUNCTION OF CONTROLLED RELEASE

KRATOCHVÍLOVÁ Romana, KLUČÁKOVÁ Martina, SEDLÁČEK Petr, POŘÍZKA Jaromír,
STRÍTEŽSKÁ Sára

Brno University of Technology, Brno, Czech Republic, EU

Abstract

The aim of our research is to develop superabsorbent polymer based on acrylic acid which can be used as a delivery vehicle for the controlled-extended release of different types of fertilizers. There was considered usage of synthetic fertilizer and biofertilizer as well because of new trend of soil depollution. A six series of polyacrylic acid gel derivatives has been prepared. NPK fertilizer was added as a main active ingredient in combination with a different content of lignohumate addition, acrylamide addition and initial dosage of NPK. The mechanisms of phosphorus and potassium release from hydrogel carriers were observed together with their swelling properties. Both experiments were carried out together in an environment of demineralized water for five days. Total content of potassium and phosphorus in surrounding water were determined by ICP - OES technology every day.

Keywords: Superabsorbent polymer, controlled release, fertilizer

Author did not supply full text of the paper/poster.