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Pusa hydrogel: A Superabsorbent for Soil Moisture Conservation to Enhance Crop Productivity

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Abstract

In view of the fast depletion of ground water reserves, uncertainty of rains and growing food demands due to human population explosion, efficient use of water available for crops has become highly relevant. In recent years, the use of superabsorbent polymers (saps) has been viewed as an innovative tool to improve water use efficiency in agricultural operations. Pusa Hydrogel, an indigenous superabsorbent hydrogel technology, has been developed for improving water use efficiency of agricultural and horticultural crops. They can absorb a minimum of 400 times of their dry weight of pure water and gradually release it according to the needs of the crop plant. So, it is used as soil moisture conservator and reduces number of irrigation. Because of their neutral ph, they do not affect nutrient availability, soil chemical composition, action of other agro chemicals, viz. fertilizers, herbicides, fungicides, insecticides, etc. Pusa hydrogels are found to improve the physical properties of soils. Increase in porosity results in improvement in seed germination and rate of seedling emergence, root growth and density, and reduced soil erosion due to reduction in soil compaction. It also increases biological/microbial activities in the soil, which increase oxygen/air and nutrient availability in root zone of the plant. So, ultimately it is helpful for increasing crop productivity.

Keywords: Crop productivity, *Pusahy drogel*, soil moisture conservator and nutrient availability