Analyzing the Effects of Anionic Polyacrylamide on Row Crop Health and Emergence

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Anionic polyacrylamide (PAM), a soil flocculant and erosion stabilizing polymer, can be used in irrigation to help promote soil quality and reduce the amount of water needed to efficiently irrigate crops. This experiment was conducted to analyze growth, health, and emergence rates of common row crops under ideal conditions with applications of polyacrylamide. Corn, cotton, grain sorghum, and soybeans were planted in microplots containing a commonly used soil complex in row crop production (Routon-Dundee-Crevasse Complex). These initial plots were irrigated with water containing PAM at rates of 0, 5, and 10 mg/L twice throughout the first four weeks of growth. Emergence data was taken over a two week period after planting. After the first four weeks of growth were over, every plant was evaluated for height and number of leaves produced with PAM. The experiment was repeated to further determine the effects of PAM on corn, sorghum, and soybeans. PAM significantly improved plant emergence rates and the overall health of crops in comparison with the control. Plants under PAM treatment generally produced a higher number of leaves and grew taller through more vigorous, early season growth.

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