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Surviving a Drought

Many regions of the U.S. are frequently affected by drought. During these conditions superabsorbent polymers can benefit the soil and ecosystem by absorbing up to 1,000 times their mass in liquids; over time, the polymer release the liquid into the immediate surroundings. My study examined the effects of the physical size of superabsorbent polymers on the growth of grass in drought conditions. This experiment had a control and two experimental groups consisted of 30 samples each of soil, soil with 30g saturated fine grit polymer, and soil with 30g of saturated medium grit polymer. The samples were watered every 4 days with 40 ml of water (4 cm of rainfall) until the grass was established, and then watering stopped to simulate drought conditions. While the large polymer samples exhibited greater growth and less runoff ($p < .01$) than the control, the small polymer group did not show significant difference in growth or runoff from either the control or large polymer groups. Findings from this study demonstrate that medium grit polymer will help the soil retain more moisture over time during a drought. Applications of these results can help in the agriculture business, farming, as well as everyday gardening by adding polymers to the soil admixture.