Pectin Feeds the Seeds: The Effect of Extracted Pectin on Various Seed Growth Mediums in Relation to Soil Moisture Retention and Plant Growth

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The purpose of this experiment was to analyze the effect of Extracted Pectin (XP) on various seed growth mediums. Brassica oleracea seeds were planted in Black Clay, Lactuca sativa seeds were planted in Sand, and Solanum lycopersicum seeds were planted in Loam. Each medium was fortified with XP alongside a control that did not contain XP. Each medium was watered once. Data was collected on soil moisture levels and various statistics on plant growth. Topsoil with Ejote Silvestre seeds was also analyzed. It was hypothesized that if various seed growth mediums were fortified with XP, then soil moisture retention and plant growth would increase. The hypothesis was confirmed, however, the difference between Sand XP and Control Sand for plant growth was negligible. Notwithstanding this exception, mediums that included XP exhibited increased levels of soil moisture, increased plant growth in height, surface area of leaves, greater wet weight, dry weight, and plant water retention at harvest. This experiment proved that including XP in various seed growth mediums increased soil moisture levels and plant growth, although Sand growth differences were negligible. Therefore, XP should be introduced into areas that experience periods of drought to enhance crops. As an added environmental benefit, XP is considered a waste product and is recycled. Further research includes placement variation of XP in the medium to allow roots easy accessibility to XP thereby amplifying moisture retention and plant growth.

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