Putting Pectin in Its Place: The Effect of Extracted Pectin Placement on a Shallow-rooted Seed in a Sand Growth Medium 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) placement on a shallow-rooted seed in a Sand growth medium. Extracted pectin was placed in a Sand growth medium with a Lactuca sativa seed at the Surface Sand level, Root Level, and Deep Sand level. A Sand growth medium without XP served as the Control. Each medium was watered once. Data was collected on soil moisture levels and various statistics on plant growth. It was hypothesized that if XP is placed at the Root Level, then soil moisture retention and plant growth will increase. The hypothesis was confirmed. Root Level Sand exhibited significantly increased levels of soil moisture and increased plant growth in height, surface area of leaves, wet weight, dry weight, and water retention at harvest. This experiment proved that including XP at Root Level for a shallow-rooted seed in a sand growth medium increased soil moisture levels and plant growth. The seed's roots could properly access the benefits of the pectin, thus resulting in stronger growth during periods of extended drought and thereby able to enhance crops. As an added environmental benefit, XP is considered a waste product and is recycled. Further research may include varying the soil medium and seed type to determine if the placement of XP, specifically at root level, among these mediums will continue to amplify soil moisture retention and plant growth.

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