The Effect of Plant Extracts on Seed Germination

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To determine the effect of certain plant extracts on the rate of seed germination, several types of seeds were planted in water-based extracts of walnut shells, orange peels, and cornhusks. A pilot study was conducted to identify seeds with a high percentage of germination within 16 days. 100 poppy, cumin, mustard, and Bermuda grass seeds were each placed in separate zippered plastic bags on paper towels soaked in tap water. The percentage of seeds that germinated in each bag was determined. Poppy, mustard, and cumin seeds had high percentages of germination; since Bermuda grass seeds had a low percentage, they were eliminated from further study. 100 poppy, mustard, and cumin seeds were then placed in separate zippered plastic bags on paper towels soaked in different plant extracts. Each type of seed was cultured separately with each of the three types of extracts. The percentage of germinated seeds was determined. The orange peel extract had the greatest effect on reducing the percentage of germination of the cumin seeds (100% reduction) and poppy seeds (91% reduction). Therefore, the orange extract is a potential economical, plant-derived herbicide. There was little effect on the mustard seeds (5% reduction); therefore, the effect of the orange peel extract is seed specific.

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