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*Assessing the Viability of Household Food Scraps as an Alternative to Traditional Fertilizer*

Synthetic fertilizers wreak havoc on the environments around them and often produce less healthy food than their natural counterparts. If they could be replaced with cheaper, but still effective, natural fertilizers, everyone would benefit. The essential function of fertilizer is to provide nutrients for plants. Thus, the question being investigated is: Can natural substances, like those that could be found in household waste, be turned into effective replacements for synthetic forms of fertilizer? To answer this question, four groups of plants were planted in equal conditions, but with different fertilizers. The different groups were synthetic fertilizer only, mixture of natural fertilizer and synthetic fertilizer, natural fertilizer only, and no fertilizer. The natural fertilizer was a ground mixture of several substances determined to be rich in Nitrogen, Phosphorus, and Potassium: the three essential nutrients for plants. Growth in each test group was measured and compared weekly until the plant life cycle ended. It was found that plants containing amounts of natural fertilizer grew less than those with only synthetic fertilizer, but those with a mixture of both fertilizers were comparable to only synthetic. The conclusion that can be drawn from this is that perhaps the viable goal is not to replace synthetic fertilizer, but to reduce its usage by replacing some of it with a natural version. The lackluster growth of only natural fertilizer plants suggests that there are issues with at least the mixture used and perhaps others that prevent total nourishment from natural sources.