Enhancing Production and Marketability of Vinca and Zinnia Through Experimental Design at the National Conservation Commission in Barbados

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Introduction:

Ornamental plant cultivation requires delicate temperature, humidity, nutrients, and environmental control to reach maximum production outcomes. This eleven-week experimental project concentrates on the seed propagation of Vinca *(Vincire)* and Zinnia *(Zinniinae)* aiming to investigate the environmental parameters influencing germination rates under a controlled lab environment, shade house, and outdoor environment with shade nets. Further, monitoring and measuring controlled factors such as sowing depth, soil substrates, and species selection. The results are collected and analyzed to provide suggestions on plant propagation.

Objectives:

The goal of this experimental project is to provide recommendations for optimized substrate selection and environmental conditions for the propagation of Vinca and Zinnia plants in Barbados, based on the experiment results for these plants.

Methods:

Methods used to capture the Vinca Mega Bloom Polka Dot and Vinca Bubble Gum were as follows: A total of 150 seeds from the company BallSeed, across both species, were separated into 3 trays for controlled lab, shadehouse, and outdoor environment accordingly (50 seeds per tray, 5 seeds per row, total 10 rows). For each tray, 25 seeds were planted at two different cultivation depths (surface and 1 cm). After 7 days of cultivation, we counted the number of seeds and put over the number of seeds planted to calculate the germination rate.

Methods used to capture the Zinnia Magellan Mix were as follows: A total of 288 seeds from the company BallSeed, propagated in three different soil substrates, in three environmental conditions as mentioned. The three soil types are potting mix (imported from Canada), sand and potting mix (1:1 ratio), and soil from the NCC (1:1:1:1 ratio of perlite, horse manure, peat moss, and soil). After 7 days, recorded the germination rate.

Results:

We concluded that both vinca and zinnia performed better in the controlled lab environment during germination. For vinca to obtain optimal propagation, sow seeds at ½ inch depth, and sterile conditions and soils before cultivation. For zinnia, use the mixture of potting mix and sand (1:1) for the growing media, sow seeds at ½ inch depth, and provide shade using a shade house but let the natural sun reach the plants to allow flowering stage development.

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Resources:

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