Preventing Pseudococcidae Infestation by Strategical Plant Placement Based Upon the Photosynthates, Alcohol Content, and Acidity Level of Solanum melongena, Abelmoschus esculentus Citrofortunella microcarpa, and Origanum vulgare

Camacho, Anica (School: Academy of Our Lady of Guam)

Mealybugs are a detriment to greenhouse, commercial farms, and residential gardens. Observing informally for a year the mealybugs behavior towards Solanum melongena, Abelmoschus esculentus, Origanum vulgare, and Citrofortunella macrocarpa, it was discerned that plant placement plays a role on infestation and activities of mealybugs. In order to support this assertion, one must analyze the behavior of mealybugs towards flowers with different percentages of sucrose and identify the total photosynthate brix of the four plants. This assertion can further be supported through analyzing the alcohol content and pH level of the four plants. Four tests were conducted looking at the behavior of five mealybugs per experiment. In all four tests, it was noted that 75% of mealybugs preferred the flower with a 40% sugar concentration. This experiment provided evidence that mealybugs are attracted to certain plants that have their preferred sugar percentage to acquire nutrients—which is the plant with 40% sugar. Interestingly, the mealybugs were not generally attracted to plants, which contained a high concentration of sugar (60% and 80%). The total alcohol content and photosynthate percentage, and pH analysis on the four plants support that mealybugs prefer stable levels of photosynthate and alcohol percentage, and acidity. The testing demonstrates mealybug's desire for stable environments. The testing also confirms that Origanum vulgare has a specific property in its sap that mealybugs are not attracted to. The utilization of a gas chromatography will likely assist in the determination of that specific property. This project demonstrates the great value that strategical plant placement holds in the prevention of Pseudococcidae infestation,

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