

MANGO TREE SPRAYING DRONE USING INFRARED FREQUENCY

ANGELICA P. BOA¹, LORENCE JOSHUA C. DE CLARO², SEBASTIAN P. VALDEZ³

angelica.boa@g.batstate-u.edu.ph¹, lorencejoshua.declaro@g.batstate-u.edu.ph²

sebastian.valdez@g.batstate-u.edu.ph³

Batangas State University, Lemery Campus

Rajah Matanda St., Bagong Sikat, Lemery, Batangas, Philippines

ABSTRACT

In today's world, modern devices were introduced to help the people adapt in an easier, fancier, and comfortable way of living. Unmanned aerial vehicle and drones are always used as equipment for military and nationwide security purposes. In this study, drone transformed into a more complex operation that sustains the health of the crops and nurture its commercial purposes. The proponents developed the Mango Tree Spraying Drone using Infrared Frequency. It eliminates the pests that reside within the mango trees controlled via infrared frequency to instruct the device's movements, targets, and flight pattern and serve as an alternative for manual spraying. Through 3D sketching and presentation, drone's function is guaranteed, and is successful to operate its purpose by ascending to air while carrying the loaded solutions. It accumulates the drone's ascending time interval of 12 seconds that can last up to 30 minutes before it runs out of battery power. It has efficiency in movement and adaptability within the environment. With the help of its flight control panel and the camera sensor, the drone can spray at an efficient level. The proponents adjusted the container's volume to withstand the pressure of the wind and the weight of the drone while flying. Major electronic components were tested to see if it is durable enough to withstand for long term use. Lastly, manual was developed to help the future users, readers, and researchers in utilizing the device in its secured operation. The Mango Tree Spraying Drone using Infrared Frequency was proven helpful for the farmers and future researchers. Its functions, efficiency and durability were also proven to be working and in good condition. For its enhancement: the following were recommended: have a larger battery supply for the drone and customize the device to be used for other types of trees for spraying.

Keywords: Mango Tree, Spraying Drone, Infrared Frequency