

## ABSTRACT

Manual spraying of pesticides and herbicides to crops and weed inhibitors onto the field are quite laborious work to humans. Manual trimming of selected unwanted plants or harvested crops from the field is also difficult. The management of pest insects is the critical component of agricultural production especially in the fertigation based farm. Almost agricultural plants are damaged, weakened, or killed by insect pests especially. These results in reduced yields, lowered quality, and damaged plants or plant products that cannot be sold.. It is because the pesticide is a hazardous component that can be affected human health in the future if it exposed during manual spraying method especially in a closed area such as in the greenhouse. Our project proposes flexible, Remote Controlled, semi-automated spraying robot with some Degrees of Freedom in spatial movement, The robot is designed to spray pesticide/insecticide directly onto individual lesions minimizing wastage or excess chemical spraying, hence making the system cost effective and also environment friendly. It is designed to cut down undesired plants selectively by remotely controlling the start and stop of the mowing system. The flexible sprayer can be flexibly controlled in the greenhouse and outdoor environment such as open space farms. Besides, the proposed pesticide sprayer also can be used for various types of crops such as tomato, pineapples, vegetables and etc. Alternatively, it also serves the purpose of maintaining lawns and sports field made of grass. The same system can be used for water spraying and mowing the grass to desired levels, leading to proper maintenance of the field.

**Keywords:** pesticides, fertigation, adjustable robotic spraying, ultrasonic sensors