

Motion Detecting Pesticide Spraying System

OBJECTIVE: To enable a cost effective & protective pesticide usage in the agriculture sector.

MATERIALS: Raspberry pi 4, Xiao S3 sense, arduino, water pumps, thin pipes, straws, batteries, card board, trays, mud, plants, water bowls, laptop, etc

PROCEDURE: In agricultural fields, farmers need to protect the crops from the invasion of the pesticides to get high yield of the food grains. Currently, they are using the high price powerful pesticides extensively, to protect the crops from the pest attacks. Extensive use of the pesticides is leading to the high expenses to the farmers which are over shooting the agricultural budget and affecting the profit to the farmers.

On other hand, excess usage of pesticides can cause damage to the soil. These pesticides pollute the soil by degrading the soil fertility by killing the soil micro flora and micro fauna, which are responsible to synthesize the natural soil bio-fertilizer.

In order to get rid off these above mentioned problematic affects of the pesticides. We have designed a solution to control the excessive usage of pesticides which can reduce the pesticide expenses of the farmers as well as we can reduce the fatal affects of excessive usage of pesticides on the soil health.

We have installed a motion detecting camera which captures the image of any pest and passes the signal to Xiao & Raspberry Pi. It provides the signal to the water pump which sprays the pesticide placed in a container. Thus, the usage of pesticide can be regulated on need basis in the specified locations of the agricultural field which reduces the pesticide purchase cost as well keeps control on the soil pollution.

RESULT: This unique method of necessity based usage of pesticides will be a cost control measure to the farmers and also protects the soil health from the pesticide pollution.