Internet of Things (IoT) Framework highlights the significant role of IoT in modernizing the detection and management of RPW infestations. This integration facilitates precision agriculture techniques, which optimize crop management and enhance the accuracy and efficiency of RPW detection and control efforts. – This approach demonstrates the potential of advanced sensing technologies, such as distributed optical sensors and IoT frameworks, to enable early and cost–effective detection of RPW. – IoT–enabled smart monitoring and early warning systems for RPW detection integrate various sensors and data analytics to provide timely information about pest presence. This system uses accelerometer sensors and signal processing techniques to identify infestation fingerprints, providing early warnings .through web and mobile applications. 2.3