

ABSTRACT

In this modern era, the issue of unwanted bird presence in specific areas has become a significant concern in various contexts, including agriculture, industry, and urban environments. In an effort to address this issue with an environmentally friendly and effective approach, an innovative system has been developed utilizing ultrasonic technology and solar power generation. Ultrasonic technology, which has proven to be an effective solution in repelling birds without harming them, is used as the main component in this system. High-frequency sound waves produced by ultrasonic technology have been proven effective in making birds feel uncomfortable and encouraging them to leave the protected area. The integration of solar power generation into this system enables independent operation without relying on external energy sources, making it an environmentally friendly and sustainable solution. The purpose of creating this device is to repel birds that often disturb farmers during sorghum cultivation in the fields. Before connecting the device components, the system design is first created, and the device design is designed using SketchUp software. The results of the testing show that this device successfully detects bird movements up to a maximum distance of 7 meters. The frequency used to repel bird pests ranges from 20 kHz to 40 kHz.

Keywords: Ultrasonic, Solar Power Harnessing, Bird Population Control