ROOFTOP FARMING (IDT - B2)

Problem Statement

Mosquito-borne diseases like dengue, malaria, and chikungunya spread due to mosquito breeding in stagnant water.
Manual detection is slow and unreliable, often allowing eggs to hatch into larvae within 48–72 hours of stagnation (Fiocruz & NIH studies). Conventional methods such as fogging or spraying are costly and harmful to the environment. Hence, there is a need for a low-cost, automated, and eco-friendly system that can detect stagnant water and prevent mosquito breeding automatically.
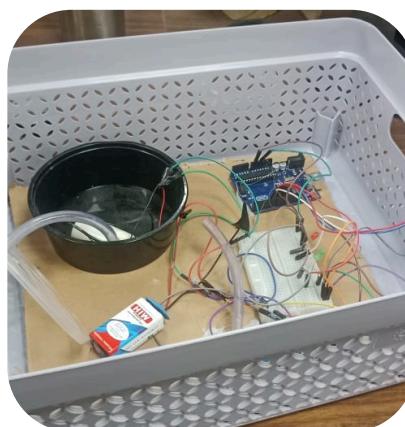
Project Team

INNOVATORS

Team Members

Ashish Kumar
IShashwat Srivastav
Saloni

Prachi Bhargava
Sanjeev Kumar
Suryansh Srivastava

Solution

The Automated Mosquito Breeding Detection and Termination System (AMBDTS) automatically detects stagnant water and prevents mosquito breeding through a smart and eco-friendly process. An ultrasonic sensor continuously monitors for water, and when detected, an Arduino starts a timer to measure how long the water remains undisturbed. Since mosquito eggs typically hatch into larvae within 48 to 72 hours, the system assumes that if water stays stagnant for 48 hours, simulated as 5 seconds in the prototype, larvae may have begun developing. The Arduino then activates a relay module that powers a peristaltic pump, which dispenses a measured amount of neem oil or soap solution to form a thin film over the water surface, preventing larvae from breathing. LEDs indicate detection and treatment, and the timer resets once the water is gone, providing a fully automatic and sustainable mosquito control solution This low-cost design reduces checks and helps limit the spread of mosquito-borne disease