

## ABSTRACT

The purpose of this research was to design a herbal mosquito repellent device using Arduino. Specifically intended to develop an environmentally friendly device that repels mosquitoes using herbals that can be found locally and determine the effectiveness and efficiency of the device in terms of: Functional Suitability; Performance Efficiency; Compatibility; Usability; Reliability; Security; Maintainability, and Portability. When it came to environmental friendliness, herbal remedies outperformed chemical-based repellents. It was an environmentally beneficial and sustainable solution because using natural components lessened its negative effects on the environment. The project's goal was to lower the chance of getting diseases including dengue, malaria, the Zika virus, and others that are spread by mosquitoes. Implementing this device can significantly improve the health and well-being of residents in areas where mosquito-borne diseases are prevalent, possibly halting the spread of disease and enhancing quality of life. The Arduino Uno was the primary controller utilized to regulate the operations of the three primary components, which included the buzzer, water level indicator, and water level sensor. When the mosquito device needed to be refilled, a buzzer device let out a sound. Following a careful investigation and testing, the researchers discovered that neem tree, lemongrass, and oregano were good insect repellents. When the device was turned on, it took between thirty and sixty minutes to start working. Therefore, this capstone project acted as a model for upcoming technologies meant to address health and environmental issues in a comprehensive and long-lasting way.

*Keywords:* Arduino-based humidifier, herbal repellent, mosquito herbal repellent