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Review Paper on Pesticides Levels in Fruits and Vegetables

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Abstract: *This project aims to develop a comprehensive and user-friendly system for monitoring pesticide levels and environmental conditions in fresh fruits and vegetables, ensuring food safety and quality. The core of the system is an Arduino Uno microcontroller integrated with various sensors, including pesticide detection sensors, a DHT11 sensor for monitoring temperature and humidity, and a methane gas sensor to detect harmful gases. An ESP8266 module enables wireless data transmission to a laptop for real-time monitoring and analysis. A servo motor, controlled via an H-bridge, automates sample positioning, while a camera provides visual documentation of the produce. The system is powered by a stable power supply and features an LCD display for real-time readings and a buzzer for audible alerts when harmful levels are detected. This versatile, portable, and affordable setup is suitable for markets, households, and agricultural sectors, ensuring healthier consumption and improved public awareness of contamination risks.To add automation, a servo motor controlled by an H-bridge is used for sample positioning, increasing the system's efficiency. A camera captures real-time images of the produce, aiding in visual inspection and documentation. An LCD display provides immediate feedback on sensor data, and a buzzer alerts users to unsafe conditions. The system is powered by a reliable power supply and designed for portability, making it suitable for diverse applications, including households, markets, and agricultural storage facilities. With its user-friendly interface, this project ensures healthier consumption and promotes awareness about pesticide contamination and storage conditions, contributing to public health and food quality*

Keywords: Pesticide detection, Arduino Uno, DHT11 sensor, Methane gas sensor, ESP8266, H-bridge, Servo motor

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