**Team Singko**

**Short description:**

Our project is an Automated Mechanism and Monitoring System for Vermicomposting. It is an automated system that uses an array of sensors to detect and monitor the surrounding environment in a vermicompost bed; then displays the data via bluetooth through an android app and an LCD on the system. It has a ventilation system to maintain circulation of air for the worms and when there is inadequate moisture in the bed. It waters the pit via solenoid sprinkler system which in time stops when the appropriate level of moisture is achieved.

**Long Description:**

Our project aims to design and develop an efficient method of monitoring vermicompost production that is compact in size and easy to maintain. Using an array of sensors such as soil moisture sensor, ambient temperature sensor, humidity sensor. They are all controlled by an Arduino Mega 2560 in which the data received by the sensors are relayed through the microcontroller, then displays and sends the gathered data to an LCD screen and an android app via Bluetooth.

When the moisture level is inadequate, the microcontroller will then trigger a sprinkler system composed of solenoid valves to distribute water unto the pit; and when the appropriate amount of moisture is reached, the solenoid valves will close thus, stop watering the pit. The source of the water from a tank is also monitored by an ultrasonic sensor as a water level indicator, which measures the distance between it and the water through sound waves.

This project aims to solve the challenge of Organic farming, as vermicompost is a more organic fertilizer than commercial fertilizers used in crops. So our project could help contribute the process at the root, to provide adequate living environment for the worms (African Night Crawlers). In addition, it can also answer the challenge of crop monitoring, as vermicast can increase crop yields up to 16%, so providing quality vermicast can create quality yielding crops when it is applied. Due to the automated mechanism of the system, it lessens the labor of the cultivators because of the sprinkler system. Our prototype also has a ventilation system which helps the circulation of air in the vermicompost bed and also for the health of the worms. In conclusion, this project aims to solve problems of crop monitoring and organic farming by providing this monitored system for vermicompost.