

## **ABSTRACT**

Forest fires are one of the natural disasters that often occur in Indonesia. One of the causes of forest fires is the dry condition of peatlands. Dry peatlands burn easily because they have low water content. Automatic soil watering with peat moisture control is one of the efforts to prevent forest fires. This system uses sensors to measure the soil moisture level. If the moisture level drops below a certain limit, the system will water the soil automatically. This research aims to implement automatic soil watering with peatland moisture control. This research was conducted using a soil moisture sensor, temperature sensor, microcontroller, and fuzzy logic. Based on testing the accuracy of the tool against three parameters using sensors and compared with measuring instruments, the measurement results for soil moisture averaged 7.12%, air humidity averaged 7.03%, and temperature averaged 0.81%.

**Kata Kunci:** *soil watering, soil moisture, peatland, forest fire.*