# ABSTRACT

*Tea plants are plants that can grow optimally at 18-25 ° C, air humidity above 60%, solar irradiation intensity 70% and groundwater content more than 30%. The problem facing tea cultivation in Indonesia is the declining productivity of tea due to climate change and the management of gardens that are not well maintained. Field identification shows the condition of tea plants is about 60% old or damaged plants and low productivity of tea gardens which is only 50%. If the environmental conditions are not met, there will be a decrease in quality in the tea plant so that the tea plant is easy to die. Climate change can be addressed by planting protective trees because it can lower the air temperature around tea plantations and reduce soil drying. Thus, the planting of protective trees in tea plantations as an adaptation to climate change.*

*The solution to the problem of tea plant planting media needs is to design a portable drought level gauge based on memory module that serves to display soil moisture value, light intensity, temperature and air humidity on the tea plant planting media to assist users in managing tea plants and determining the location of protective tree planting.*

*The tool can measure the value of monitoring parameters as well as determine the environmental conditions of monitoring parameters with the help of if-else and produces a good accuracy average of each sensor of 99.20% for temperature and 99.52% for air humidity using SHT20 sensors, 97.40% for SEN0193 soil moisture sensors, and 98.83% for BH1750 light intensity sensors. The data will be displayed via LCD and stored into local storage and can be accessed through digital devices.*

***Keywords:*** *Tea Plant, Quality of Environmental Conditions, monitoring system, memory database, Protective Tree, if-else.*