ABSTRACT

Making a drink tea qualified requires processing and making a complex, one of them is mixing mineral waters with tea. This process takes a long time because there are many steps taken such as the entry of mineral water, heating, stirring, and revenue cider tea. Hence, this process requires a method of optimation to get the optimal time. In parameter that influential on this process is a time, a discharge of water, and volume. Research is done to be able to know a time, a discharge of water, and volume optimal with water use of the machine maker of water tea scale laboratory and methods simplex as a method of optimation.

Design of the machine maker of water tea scale laboratory consisting of six tank that serves as water storage white, mixing tea, storage cider tea, mixing sugar, water storage sugar, and storing tea sweetened. The sensor used to determine the water turbidity the tea is LDR which situated on a tank mixing tea and refractometer to determine levels of sugar in water tea. All actuator and censorship controlled by microcontroller ATMEGA16 and methods simplex as reckoning data optimal.

Base on the results of testing, data obtained to turbidity and the sugar content is 17 ADC and 8.4 % by using the method simplex. Testing compared with the parameters obtained from tea a reference to the value of 27 ADC and 8.4 % sugar levels. Details time for the granting of the color of the tea is TP_1 = 17.11 s and TV_1 = 12.09 s and phase the granting of a sweet taste is TV_2 = 33.84 s and TV_3 = 19.19 s.

Keywords : the maker of water tea, turbidity, sugar content, tea a reference, method simplex