

ABSTRACT

Cigarette butts are hazardous waste for the environment. The purpose of this study was to find a good natural pesticide formula from cigarette butts to be effective in eradicating pests. The research method uses the taguchi method to get the optimal combination of compositions. As for the orthogonal array, $L_9(3^4)$ is used with the waste factor of cigarette butts, kaffir lime leaves, boiled, and soaked. Data processing is carried out using ANOVA on the average value and signal to noise ratio (SNR) with consideration of smaller the better. Based on experimental research, the composition showed that to obtain the highest level of effectiveness results, a composite of 20 grams of cigarette butts was used, and 6 grams of kaffir lime leaves. As for the process or treatment using the boiling stage for 4 minutes, and soaking for 12 hours. Waste of cigarette butts and kaffir lime leaves can be an alternative to controlling pests on plants.

Keywords: *Cigarette butts, DOE, Pesticide, Taguchi method*