

SYAHRU RAMADHANI. 0811020055. Comparative Effectiveness of Moringa Seed Flour (*Moringa oleifera* Lamk), Poly Aluminium Chloride (PAC), and Alum as Coagulant for Clear Water. TA. Supervisor: Dr. Ir. A. Tunggul Sutan Haji, MT and Dr. Ir. J. Bambang Rahadi W., MS.

SUMMARY

Rural areas unserved water from the taps generally use ground water (wells), river water, rain water, springs, and others. So that when droughts are common water quality used is not eligible drinking water is not even suitable for drinking because of murky mud. Although infectious disease-causing bacteria can be killed by cooking water to a boil, many harmful substances, especially heavy metals, can not be eliminated in this way.

The research objective was to compare the effectiveness of moringa seed flour coagulant, Poly Aluminium Chloride (PAC), and alum to purify water. Experimental design used was Completely Randomized Design (CRD) with a single factor consisting of four treatments, namely; moringa seed flour adding 500 mg/L water sample, PAC 250 mg/L water sample, alum 20 mg/L water sample, and the sample without coagulant (control). Each treatment was repeated three times. Analysis of the diversity of the results will be done by statistical tests, followed by LSD test to see the difference between treatments.

Raw water obtained from the Brantas river water in the Oro-Oro Dowo Malang. The water sample is introduced into a glass beaker three each of one liter. Coagulant is added and then stirred with a Jar Test and deposited. The parameters tested were the level of turbidity, color, and TSS (Total Suspended Solid). The results showed moringa seed flour can reduce the turbidity of 95.39%, 75.07% of the color levels, and cause an increase in TSS at 170.270%. PAC can reduce the turbidity of 99.95%, 91.73% of the color levels, and TSS at 55.528%. Alum can reduce turbuditas by 93.44%, 87.55% of the color levels, and TSS at 93.366%, while the most effective type of coagulant to purify water is PAC.

Key Word : Moringa Seed Flour, Poly Aluminium Chloride (PAC), Alum, River Water, Coagulan