

## **Abstract**

This project is intended to study the optimum formula of wood-apple wine production by using the factorial design. For the factorial design, it is divided into two steps; the first step is to determine the optimum ratio of wood-apple and water, and then the second step is continued to determine the optimum amount of used lemon fruits by using the obtained optimum ratio of wood-apple and water from the first step.

From the study, in the first step; the optimum ration between wood-apple and water for wine making is 1:5 that contains pH = 3.50, 13.7 % alcohol, 0.3168 % total acidity, 0.75 % reducing sugar. In the second step; The optimum amount of used lemon fruit in wine at 1:5 ratio of wood-apple and water for wine making is one lemon that contains pH = 3.48, 12.4 % alcohol, 0.3008 % total acidity, 0.75% reducing sugar.

According to the study of the optimum formula of wood-apple wine, the ratio at 1:5 of wood-apple and water with one lemon fruit adding is the most reasonable one that will be accepted for the panelists.