Aim 40 To Prepare Wine from the Fruit Juice using the Yeast

Introduction

Fermentation is an anaerobic process and chemical change is brought about by the action of enzyme. Alcoholic fermentation is the conversation of glucose into ethyl alcohol and CO_2 under anaerobic condition by yeast. The alcohol produced during the fermentation by yeast has a limited tolerance for alcohol and when a certain concentration is reached, the yeast cell die and fermentation ceases.

Requirements

Fruit juices (500 ml), culture of yeast, sucrose (20 g), BOD incubator water, distillation apparatus, conical flask, beaker autoclave etc.

Procedure

1) *Saccharomyees cerevisae* strain HAU21 is taken and 200 ml of black grape juice was first sterilized and then cooled down to room temperature. The pure culture of *S.cerevisiae* was inoculated under aseptic condition.
2) It was kept for 48 hours at 25^0C
3) Transfer inoculums to the production medium
4) 1 kg black grapes were crushed to make their juice. The juice was transferred to a 2 liters flask and add with some sugar (125 g). Then, the inoculum was transfer to production medium and the flask was plugged with cotton and kept at 15^0C for 6 days, after 6 days medium was taken and clear solution or wine was siphoned off from flask to a clear container so that the debris remain inside the original container. The wine which was taken

out was put in refrigerator for clarification. After 4-5 days remaining yeast cells settle down and clear wine was obtained and ready for use.

Discussion

Beer and wine are natural fermentation products where percentage of alcohol is limited by the tolerance of alcohol (6-9%) by the yeast cell. Fermentation terminate when the alcohol tolerance level of the yeast cell is over.

In 1857, Louis Pasteur discovered the sour taste of the wine was caused by acid producing micro-organism present in the grapes. This results in the birth of Pasteurization.

Grapes had been a perfect medium for the production of wine because of its high nutrient concentration, neutral acidity, high sugar concentration and the production of pleasant aroma and flavors. The alcohol percentage in wine varies from 10-14%. Fortified wine may have up to 22% by adding brandy.