



# **A STUDY ON PREPARATION AND PRESERVATION OF FERMENTED BEVERAGES FROM GRAPE, APPLE & BARLEY**

**Submitted by**

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Roll No: 01-15/04

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**A thesis submitted in the partial fulfillment of the requirements for the degree of  
Master of Science in Food processing and Engineering**

**Department of Food processing and Engineering  
Faculty of Food Science and Technology  
Chittagong Veterinary and Animal Sciences University  
Chittagong-4225, Bangladesh**

**DECEMBER 2016**

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**Himel Dutta**

**December, 2016**

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**This is to certify that we have examined the above Master's thesis and have found that is complete and satisfactory in all respects, and that all revisions required by the thesis examination committee have been made**

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**DECEMBER 2016**

## *Dedication*

I dedicate this small piece of work  
to my beloved parents

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Author

December, 2016

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## Abstract

The study focuses on fermented beverages production using grape, apple and barley. Fermentation is performed by *Saccharomyces cerevisiae* for grape and apple & fermentation of barley is done by using *Aspergillus kawachi*. During experiment growth of yeast cell, total solid contents and degree of liquor alcohol was considered critically. The various alcoholic compounds was analyzed with selective method of gas chromatography. Results obtained in the present study indicates that volume of all compounds like ethyl acetate ( $p < 0.01$ ) at 125  $\mu\text{mol/L}$ , propyl alcohol ( $p < 0.05$  and  $p < 0.01$ , respectively), isobutyl alcohol ( $p < 0.01$ ), isoamyl acetate decreased ( $p < 0.05$ ) at 4mg/l, isoamyl alcohol and ethyl formate ( $p < 0.01$  or 0.001) was increased with the function of time during fermentation. While during ageing process the contents of methyl acetate, ethyl acetate, isoamyl acetate and ethyl lactate was increased but isoamyl alcohol decreased. The levels of propylalcohol and isobutyl alcohol fell after short period of time. However, no significance effects of ageing process on methyl acetate, ethyl acetate, isobutyl alcohol, isoamyl alcohol and ethyl lactate ( $p > 0.05$ ) was observed. Whereas significance effects of ageing on the propyl alcohol and isoamyl acetate ( $p < 0.05$ ) was observed. Alcoholic compounds & ageing process is considered also affects color, flavor, aroma, consistency and overall acceptability. A shelf life study was carried out on all the fermented beverage product for 90days.