DETERMINATION OF MINIMUM FOOD PRESERVATIVE COMBINATION LEVELS FOR FRUIT JUICES

A dissertation submitted to the
Faculty of Animal Science and Export Agriculture of
Uva Wellassa University
in partial fulfillment of the requirements for the award of the degree of
Bachelor of Science in Export Agriculture

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2013

ABSTRACT

Higher levels of food preservatives than the maximum permitted levels are used by the food manufactures. These permitted levels of food preservatives published by the Sri Lankan Food Act are higher than the international standards thus Sri Lankan products are failed at the export market. Higher levels of food preservatives may cause health hazards. This study was conducted to find out the minimized levels of preservative combinations for preservation of fruit juices while minimizing the risk to human health. Concentration series of Sodium metabisulphite, Potassium sorbate and Potassium benzoate solutions were prepared and filter sterilized. Disk diffusion method was preformed to investigate the minimum inhibitory concentration against *Lactobacillus acidophilus, Aspergillus niger, Staphylococcus aureus, and Saccharomyces spp.* Two preservative combinations were produced by combining minimum inhibitory concentrations of Sodium metabisulphite with potassium sorbate and Sodium metabisulphite with potassium benzoate. These two preservative combinations were allocated for mango juice, wood apple juice, mix fruit juice, lime juice and guava juice which were produced in both laboratory and the fruit juice manufacturing unit. Total plate count and yeast and mould were enumerated to investigate the efficiency and effectiveness of preservative combinations. Better preservation is achieved at 25 mg/kg of Sodium metabisulphite, 150 mg/kg of Potassium sorbate and 120 mg/kg of Potassium benzoate. The investigated combinations of preservatives are efficient in preservation of fruit juices. These two preservative combinations can be recommended to apply in fruit juice manufacturing where all the requirements of good manufacturing practices are implemented.

Key words: Preservatives, maximum permitted level, disk diffusion method, filter sterilization, enumeration