ABSTRACT

Maria Nike Janeta (03420070043)

THE EFFECT OF FERMENTATION TIME AND HEATING TOWARD ACIDITY LEVEL OF NIRA AREN VINEGAR (ArengapinnataMerr)

The time of acetic acid fermentation affects final characteristic of vinegar. The increasing of fermentation time will increase the acetic acid content until the fermentation stopped. Acetic acid bacteria that used in this fermentation are Acetobacteraceti and Acetobacterxylinum, both bacteria can produce acetic acid by oxidizing alcohol. The minimum total of acetic acid contained in vinegar is 4g/100 ml. Acetic acid bacteria can oxidize the alcohol into acetic acid. Alcohol content that reach 5-6 % through alcoholic fermentation will be used by acetic acid bacteria to produce acetic acid. The aim of this research are to study the effect of bacteria types are Acetobacteraceti and Acetobacterxylinum toward acidity level of niraaren vinegar, to study the effect of fermentation time toward acidity level of niraaren vinegar, and to study the effect of heating toward acidity level of niraaren vinegar. The highest acetic acid content was obtained from 40 days fermentation. The longer fermentation time will decrease the acetic acid content, which caused by over oxidation that convert acetic acid become carbon dioxide and water. Vinegar needs heating process in order to stop fermentation process and increase shelf life. Vinegar that being heated at 100 °C for 15 minutes has the highest acetic acid content so that the heating at 100 °C for 15 minutes is chosen as the best one. Microbes that grow in the vinegar usually can not survive in high temperatures. The temperature and the heating time must consider the acetic acid content, besides the amount of microbes. This is due to the heating process to maintain flavor and aroma of acid in vinegar is a high value.

Keywords: Acetobacter aceti, Acetobacter xylinum, fermentation time, heating, the acetic acid content.

Reference: 57 (1959-2010)