

Isolation of Acetic Acid Bacteria and Its Utilization For Vinegar Fermentation From Waste Fruit

Iman Santoso, author

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Abstrak

Among twenty one isolates, obtained from "aren" (*Aretga Rinnata*) vinegar, 10 isolates were identified as acetic acid bacteria, belong to genus *Acetobacter*. Isolates no. 12 was used as inoculum for vinegar fermentation. *Saccharomyces cerevisiae* (Y-17) was provided by University of Indonesia Culture Collection.

Two hundred fifty grams of pineapple (*Ananas comosus*) peel was boiled for 1.5 hours and then filtered to obtain the extract. Aquadest was added into substrate to obtain 1 litre of extract and then added with 15% or 20% castor sugar. Substrate was sterilised at 121°C for 10 minutes.

Fermentation was carried out in syrup bottle containing 540 ml substrate. Approximately 60 ml of starter containing mix-culture with different ratio of 1 day old *S. cer visiae* (106 cfu/ml) and 5 days old *Acetobacter* sp. no.12 {10 cfu/ml} was inoculated into the substrate. The ratio of yeast cells to bacteria were follow: (1:1); (2:1); (3:1} or (4:1). Fermentation was set up in room temperature (30 -- 32°C for 1 month. The concentration of acetic acid was titrated with standarised NaOH.

Result of this study showed that substrate with 15% sugar yielded (1.1 - 1.4)% acetic acid. The average acetic acid concentration from substrate with 20% sugar were (0.44 - 0.89%). It was concluded that substrate with 15% sugar gave higher concentration and the best ratio of starter was (1 : 1).