Citric Acid Plant from *Borassus flabellifer* L Used Submerged Fermentation Process With *Aspergillus Niger* Bactery

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**Abstract**

Citric acid is a weak organic acid compound, it’s found at leaf and fruit in citrus plant. This compound is a natural preservative, and used as an acid taste at food and soft drink. In biochemistry, citric acid is important as an intermediate in the citric acid cycle and as a metabolism of virtually all living organism. Citric acid can also be used as an environmentally benign cleaning agent, functioned as of antioxidants.

Process in this citric acid plant is submerged fermentation. Submerged fermentation process is selected because easy and relative minimum cost, if compared to other process. The submerged fermentation process has several phases, such as mold seeding, fermentation, precipitation, acidulation, decolorizes, and crystallization.

Operation citric acid plant with submerged fermentation process is located in Tuban, East Java. This plant is operated during 330 workday/years. The Operation system used semi-continue. The raw material used 884,020 kg/hour. Utility supply for citric acid plant needed 15,6 m$^3$/hour water sanitation, cooling water 3933,7 m$^3$/hour, water process 25,6 m$^3$/hour, boiler water 856,4 m$^3$/hour and make up water 6659,9 m$^3$/hour

**Keyword:** Citric Acid, Borassus flabellifer L, Submerged Fermentation, Aspergillus Niger