OXALIC ACID PLANT FROM BREAD FRUIT WITH NITRIC ACID OXIDATION PROCESS

Nama Mahasiswa: Mochammad Riza N. (2309 030 039)
Nama Mahasiswa: Rizky Pravitasari (2309 030 079)
Jurusan: D3 Teknik Kimia FTI-ITS
Dosen Pembimbing: Prof. Dr. Ir. Suprapto, DEA.

Abstract

Oxalic Acid Plant is planned to fulfill a requirement of oxalic acid for Indonesian. Oxalic Acid is an important chemical material generally used as a reagent for leather tanning industry, a metal cleaner, a whitening agent at textile and pulp industry.

Oxalic Acid product is made of bread fruit with a process as follows: (1) In the pre-treatment section, breadfruit starch containing 28% hydrolyzed into glucose; (2) In the reaction process, glucose is oxidized into oxalic acid, and then crystallized oxalic acid into oxalic acid dihydrate; (3) In the purification section, oxalic acid dihydrate dissolved back into the tank redisolvin, and then recrystalitation to separate impurities up to 90%; (4) Drying section, oxalic acid will be dried into the crystal 99.8%.

Capacity of production oxalic acid is 7000 ton/years need bread fruit 17300 ton/years, nitric acid 5.7 ton/years, sulphuric acid 28 ton/years and ferric sulphur 1.8 ton/years. This oxalic acid plant is operated continuously 24 hour/day and 330 day/years. Utility needs of 4553,365 m³/hour be used to sanitation water, boiler water, process water, and cooling water.

Keyword: Oxalic Acid, Bread Fruit, Nitric Acid Oxidation Process