

Pradita Denia Abrista. 080710116, 2011. The Effect of Cellulose Diacetate From Pineapple Fiber to The Mechanical Properties of Tapioca Starch Based *Edible Plastic*. This script is under guidance Drs. Siswanto, M.Si and Jan Ady, S.Si, M.Si, Apt. Department of Physics. Faculty Science and Tecnology, Airlangga University, Surabaya.

ABSTRACT

The research by title of “The Effect of Cellulose Diacetate From Pineapple Fiber to The Mechanical Properties of Tapioca Starch Based Edible Plastic” has been conducted. The purpose of study is to improve the characterization of mechanical properties in edible plastic made from tapioca starch with the addition of cellulose-diacetate from pineapple fiber as a substitute of plastic-based packaging. Edible plastic was made with hydrolysis method with the comparison of 50gr of tapioca starch in 50 ml solvent. pH value used in solvent was 7. The composition of edible plastic were 7.5 gram of hydrolysis product, 100ml aquades, 45 ml of 96% ethanol, 1.2 ml glycerol and cellulose diacetate from pineapple fiber varies from 0,2%, 0,4%, 0,6%, 0,8%, 1%. In general, the plastics produced were stable enough with the power of stretch between 89,33-115,83 kgf/cm² and elasticity between 49,6-60%. These edible plastic made from pineapple fiber could react to form some new clusters which are CO-CH₂ and P-H.

Keywords : edible plastic, tapioca, pineapple fiber, tensile strength, elasticity and FT-IR.