

Nurvina Maulidina. NPM 22.03.3.1.1.00092. *Resistant Starch* dari Pati Talas (*Colocasia esculenta* L.) Melalui Modifikasi Kimia Dengan Metode Hidrolisis Asam. Di bawah bimbingan Dr. Supriyanto, S.TP., M.P. dan Dr. Darimiyya Hidayati, S.TP., M.P.

ABSTRAK

Pati resisten (*resistant starch*/RS) merupakan salah satu komponen pangan fungsional yang bermanfaat bagi kesehatan karena tidak dapat dicerna di usus halus. Pati talas (*Colocasia esculenta* L.) berpotensi dikembangkan sebagai sumber pati resisten melalui metode hidrolisis asam. Penelitian ini bertujuan untuk mengetahui pengaruh variasi konsentrasi HCl terhadap sifat fisikokimia dan kadar *resistant starch* pati talas termodifikasi. Penelitian menggunakan Rancangan Acak Lengkap (RAL) non-faktorial dengan perlakuan konsentrasi HCl 0% (kontrol), 1%, 3%, dan 5%. Parameter yang diamati meliputi *swelling power*, kelarutan, viskositas, kadar *resistant starch*, dan daya cerna pati. Data dianalisis menggunakan ANOVA dan dilanjutkan uji DMRT pada taraf signifikansi 5%. Hasil penelitian menunjukkan bahwa perlakuan hidrolisis asam memberikan pengaruh nyata ($p < 0,05$) terhadap seluruh parameter pengamatan. Peningkatan konsentrasi HCl menyebabkan nilai *swelling power*, viskositas, dan daya cerna pati menurun, sedangkan kelarutan dan kadar *resistant starch* meningkat. Perlakuan HA5% menghasilkan kadar *resistant starch* tertinggi sebesar 74,50% dan daya cerna pati terendah sebesar 77,23%. Berdasarkan hasil penelitian, modifikasi pati talas menggunakan metode hidrolisis asam berpotensi menghasilkan pangan fungsional dengan kandungan *resistant starch* tinggi dan indeks glikemik rendah.

Kata kunci: pati talas, hidrolisis asam, *resistant starch*, daya cerna pati, pangan fungsional.

Nurvina Maulidina. NPM 22.03.3.1.1.00092. Resistant Starch from Taro (*Colocasia esculenta* L.) Starch through Chemical Modification by Acid Hydrolysis. Under the guidance of Dr. Supriyanto, S.TP., M.P. dan Dr. Darimiyya Hidayati, S.TP., M.P.

ABSTRACT

*Resistant starch (RS) is one of the functional food components that has health benefits because it cannot be digested in the small intestine. Taro starch (*Colocasia esculenta* L.) has the potential to be developed as a source of resistant starch using the acid hydrolysis method. This study aimed to determine the effect of different HCl concentrations on the physicochemical properties and resistant starch content of modified taro starch. The study used a non-factorial Completely Randomized Design (CRD) with HCl concentration treatments of 0% (control), 1%, 3%, and 5%. The parameters observed were swelling power, solubility, viscosity, resistant starch content, and starch digestibility. Data were analyzed using ANOVA followed by Duncan's Multiple Range Test (DMRT) at a 5% significance level. The results showed that acid hydrolysis treatment had a significant effect ($p < 0.05$) on all observed parameters. Increasing HCl concentration decreased swelling power, viscosity, and starch digestibility, while solubility and resistant starch content increased. The HA5% treatment produced the highest resistant starch content of 74.50% and the lowest starch digestibility of 77.23%. Based on the results, modified taro starch produced through acid hydrolysis has the potential to be developed as a functional food ingredient with high resistant starch content and a low glycemic index.*

Keywords: taro starch, acid hydrolysis, resistant starch, starch digestibility, functional food.