

**PENGARUH CARA MODIFIKASI PATI *TACCA* (*Tacca leontopetaloides*)
DENGAN ASAM, ENZIM, DAN PERLAKUAN *AUTOCLAVING COOLING*
TERHADAP KADAR PATI RESISTEN**

INTISARI

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Umbi tacca (*Tacca leontopetaloides*) mempunyai rasa yang pahit sehingga penggunaannya cukup terbatas, namun memiliki kadar amilosa yang cukup tinggi pada patinya sehingga dapat dimanfaatkan untuk meningkatkan kadar pati resisten sebagai pangan fungsional. Pati resisten memiliki banyak manfaat bagi kesehatan manusia. Penelitian ini bertujuan untuk meningkatkan kadar pati resisten dari pati tacca dengan perlakuan hidrolisis menggunakan asam sitrat, enzim pullulanase, siklus *autoclaving-cooling*, serta kombinasi diantara ketiganya. Mikrostruktur granula pati diamati menggunakan *Scanning Electron Microscope* (SEM). Kadar amilosa dan kadar pati resisten sampel ditentukan.

Hasil penelitian menunjukkan sampel dengan perlakuan kombinasi hidrolisis menggunakan asam, enzim, dan *autoclaving-cooling* memiliki kadar pati resisten tertinggi yang meningkat dari 4,09% menjadi 61,96%, kadar amilosa meningkat dari 31,62% menjadi 77,87%, memiliki korelasi yang sangat kuat antara peningkatan kadar amilosa dengan peningkatan kadar pati resisten serta terjadi perubahan mikrostruktur granula pati dari bentuk globula menjadi bentuk menyerupai kristal melalui pengamatan SEM.

Kata kunci:

pati resisten, hidrolisis asam sitrat, pullulanase, *autoclaving-cooling*, umbi tacca, *scanning electron microscope*

EFFECT OF MODIFICATIONS ON TACCA STARCH (*Tacca leontopetaloides*) BY ACID, ENZYME, AND AUTOCLAVING COOLING TREATMENT ON RESISTANT STARCH CONTENT

ABSTRACT

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Tacca root (*Tacca leontopetaloides*) has limited usage due to its bitter taste, but has a high amylose content in its starch which can be used as a functional food by increasing resistant starch content. Resistant starch has many benefits to human health. This research aims to increase resistant starch content of tacca starch by hydrolysis using citric acid, pullulanase, autoclaving-cooling treatment, and its combination. The structure of the granule starches in samples were examined using Scanning Electron Microscope (SEM). The amylose content and resistant starch content of the samples were determined.

The result showed that sample which was treated by combination of acid, enzymatic hydrolysis, and autoclaving-cooling treatment had highest resistant starch content which increased from 4,09% to 61,96%, amylose content from 31,62% to 77,87%, showed a very strong correlation between the increased amylose content and resistant starch content; and the microstructure of the starch granules have changed from globular shape into crystalline structure through SEM observation.

Keywords:

Resistant starch, citric acid hydrolysis, pullulanase, autoclaving-cooling, tacca starch, scanning electron microscope