

ABSTRAK

UJI CERNA PATI RESISTEN DARI BIJI ALPUKAT SEBAGAI KANDIDAT PREBIOTIK YANG DIFERMENTASI OLEH BAKTERI *Streptomyces* sp. AB 8 DAN VARIASI PEMANASAN BERTEKANAN-PENDINGINAN

Oleh

Siti Inah

Biji alpukat memiliki kandungan pati yang cukup tinggi sebesar 23% yang berpotensi dimanfaatkan sebagai sumber pati resisten. Salah satu metode yang umum digunakan dalam modifikasi pati resisten yaitu metode kombinasi fermentasi dilanjutkan dengan pemanasan bertekanan-pendinginan. Oleh sebab itu penelitian ini bertujuan untuk mengetahui pengaruh perlakuan fermentasi bakteri *Streptomyces* sp. AB 8 dan variasi jumlah siklus pemanasan bertekanan-pendinginan dalam upaya meningkatkan pati resisten biji alpukat, serta uji cerna oleh *Lactobacillus* sp.. Penelitian diawali *pretreatment* biji alpukat terlebih dahulu. Selanjutnya dilakukan tahap fermentasi oleh *Streptomyces* sp. AB 8. Kemudian dilanjutkan dengan pemanasan bertekanan-pendinginan dengan 0, 1, 2 dan 3 siklus. Pati hasil modifikasi dianalisis kadar amilosa dan amilopektin, serta kadar pati resisten. Lalu diuji cerna oleh *Lactobacillus* sp. dengan melihat zona jernih di sekitar koloni. Hasil penelitian menunjukkan perlakuan S1 dan S2 menghasilkan kadar pati resisten terbaik yaitu sebesar 7,5% dan 7,4% dengan indeks enzimatis hasil uji cerna sebesar 2,48 cm dan 1,65 cm, dibandingkan dengan perlakuan S0 dan S3. Pati resisten yang dihasilkan dengan 1 kali siklus pemanasan bertekanan-pendinginan lebih efektif dan efisien dibandingkan dari S2, walaupun secara statistik sama. Berdasarkan hasil tersebut perlakuan fermentasi oleh *Streptomyces* AB 8 dan variasi pemanasan bertekanan-pendinginan menunjukkan pengaruh terhadap hasil peningkatan kadar pati resisten biji alpukat.

Kata kunci: Biji alpukat, Fermentasi, *Lactobacillus* sp., Pati resisten, Pemanasan bertekanan-pendinginan, *Streptomyces* sp. AB 8

ABSTRACT

DIGESTION TEST OF RESISTANT STARCH FROM AVOCADO SEED AS A PREBIOTIC CANDIDATE FERMENTED BY *Streptomyces* sp. AB 8 BACTERIA AND AUTOCLAVING-COOLING VARIATIONS

By

Siti Ina

Avocado seeds have a high starch content of 23% which has the potential to be used as a source of resistant starch. One method commonly used in the modification of resistant starch is the combination method of fermentation followed by autoclaving-cooling. Therefore this study aims to determine the effect of the bacterial fermentation treatment *Streptomyces* sp. AB 8 and variations in the number of autoclaving-cooling cycles in an effort to increase resistant starch in avocado seeds, as well as indigestion tests by *Lactobacillus* sp. The research began with pre-treatment of avocado seeds. Furthermore, the fermentation stage was carried out by *Streptomyces* sp. AB 8. Then proceed with autoclaving-cooling with 0, 1, 2 and 3 cycles. Starch modified results were analyzed for amylose and amylopectin levels, as well as resistant starch levels. Then tested for digestibility by *Lactobacillus* sp. by looking at the clear zone around the colony. The results of the research show treatment S1 and S2 produce rate starch resistant the best results were 7.5% and 7.4% with the enzymatic digestibility index of 2.48 cm and 1.65 cm, compared to the S0 and S3 treatments. Resistant starch produced by 1 cycle of autoclaving-cooling is more effective and efficient than S2, although statistically the same. Based on these results the fermentation treatment by *Streptomyces* AB 8 and variations in autoclaving-cooling showed an effect on the results of increasing the levels of resistant starch in avocado seeds.

Keywords : *Autoclaving-cooling, Avocado seed, Fermentation, Lactobacillus sp., Resistant starch, Streptomyces sp. AB 8*