PENGARUH KONSENTRASI AGAR-AGAR DAN WAKTU PENAMBAHAN *Lactobacillus plantarum* TERHADAP SIFAT KIMIA, FISIK DAN TINGKAT KESUKAAN TAPE BERAS PROBIOTIK

INTISARI

Tape merupakan salah satu makanan tradisional produk fermentasi yang digemari oleh masyarakat Indonesia. Bahan baku tape pada umumnya digunakan beras ketan. Harga beras ketan relatif mahal, maka perlu dicari bahan baku alternatif, jenis beras Ciherang yang memiliki kadar amilosa sedang. Untuk meningkatkan sifat lengket dari tape dan sebagai pangan probiotik, maka berturut-turut perlu ditambah dengan agar-agar dan bakteri asam laktat *Lactobacillus plantarum*. Tujuan penelitian ini menentukan konsentrasi agar-agar dan waktu penambahan *Lactobacillus plantarum* yang baik pada pembuatan tape beras Ciherang probiotik yang disukai panelis.

Rancangan percobaan yang digunakan dalam penelitian ini adalah rancangan acak lengkap faktorial dengan dua faktor, faktor pertama yaitu perlakuan konsentrasi agar-agar (0,5 %, 1,25 % dan 2 %), dan faktor kedua yaitu waktu penambahan bakteri asam laktat (0 jam, 12 jam dan 24 jam). Tape beras Ciherang probiotik yang dihasilkan dianalisa kadar air, kadar gula reduksi, kadar alkohol, pH, jumlah yeast, jumlah bakteri asam laktat dan tingkat kesukaannya. Hasil yang diperoleh dilakukan analisa varian pada tingkat kepercayaan 95 %. Apabila terdapat beda nyata pada masing-masing perlakuan dilanjutkan uji *Duncan Multiple Range Test* (DMRT).

Hasil penelitian menunjukkan bahwa konsentrasi agar-agar dan waktu penambahan *Lactobacillus plantarum* berpengaruh signifikan terhadap kadar air, pH, jumlah yeast, dan jumlah bakteri asam laktat, tetapi tidak berpengaruh signifikan terhadap kadar gula reduksi, kadar alkohol dan tingkat kesukaan. Tape beras probiotik yang paling disukai adalah dengan perlakuan konsentrasi agar-agar 1,25 % dan waktu penambahan *Lactobacillus plantarum* 24 jam. Tape beras pada perlakuan tersebut memiliki kadar air 63,18 %, kadar gula reduksi 18,60 %, kadar alkohol 0,85 %, pH 5,06, jumlah yeast $2,6x10^6$ cfu/g, jumlah bakteri asam laktat $3,2x10^8$ cfu/g.

Kata kunci: Tape beras, beras Ciherang, agar-agar, *Lactobacillus plantarum*

THE EFFECT OF AGAR-AGAR POWDER CONCENTRATION AND SUPPLEMENTATION TIME OF *Lactobacillus plantarum* ON CHEMICAL AND PHYSICAL PROPERTIES, AND PREFERENCE LEVEL OF PROBIOTIC RICE TAPE

ABSTRACT

Tape is one of the traditional food fermentation products favored by the people of Indonesia. The raw material of tape in general is glutinous rice. The price of glutinous rice is relatively expensive, so need to look for alternative raw materials, in the kind of Ciherang rice that has moderate amylose levels. To enhance the sticky nature of tape and as a probiotic food, then successive need to be coupled with agar-agar and lactic acid bacteria *Lactobacillus plantarum*. The purpose of this research determines the concentration of agar-agar and the addition of *Lactobacillus plantarum* is good on the manufacture of rice tape Ciherang probiotic that is liked panelist.

The experimental design used in this research is a complete randomized design (RAL) factorial with two factors, factor one which is the concentration treatment of agar-agar (0,5%, 1,25% and 2%), and factor two which is the time of adding lactic acid bacteria (0 hours, 12 hours and 24 hours). Ciherang rice tape produced probiotics analysed moisture content, reduced sugar levels, alcohol levels, pH, yeast count, number of lactic acid bacteria and its preference levels. The results of the variant analysis are conducted at the 95 % confidence level. If there is a real difference in each treatment continues test *Duncan Multiple Range Test* (DMRT).

The results showed that the agar concentration and the time of addition of *Lactobacillus plantarum* had a significant effect on moisture content, pH, the number of yeast, and the number of lactic acid bacteria, but did not have a significant effect on reducing sugar content, alcohol content and preference level. The most preferred probiotic rice tape is with the treatment of agar-agar concentrations of 1,25% and the addition time of Lactobacillus plantarum 24 hours. Rice tape on the treatment has a moisture content of 63,18%, reduction sugar content of 18,60%, alcohol content of 0,85%, pH 5,06, the number of yeast 2, $6x10^6$ cfu/g, the number of lactic acid bacteria 3, $2x10^8$ cfu/g.

Keywords : Rice tape, Ciherang rice, agar-agar, *Lactobacillus plantarum*