

ABSTRACT

EFFECT OF ADDITIONAL *Saccharomyces cerevisiae* ON THE CHEMICAL CONTENT AND BETA-GLUKAN OF TEMPE GEMBUS

By

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Saccharomyces cerevisiae is a type of yeast that can synthesize beta glucan in its cell wall. Beta-glucan can provide health effects, including preventing the occurrence of coronary heart disease due to free radicals in the body. This study aims to determine the effect of the addition of *Saccharomyces cerevisiae* on the chemical and beta-glucan content of gembus tempe. This research was conducted using a single factor Completely Randomized Block Design (RAKL) method (inoculum type) with 6 levels, tempeh yeast (RAPRIMA) (K1), *S. cerevisiae* (K2), *R. oligosporus* (K3), Tempe yeast (RAPRIMA) + *S. cerevisiae* (K4), *R. oligosporus* + Fermipan (K5), *R. oligosporus* + *S. cerevisiae* (K6). Observation parameters include beta-glucan content, fat content, protein content, ash content, water content, and carbohydrate content. The data obtained were analyzed statistically using the Barlett and Tukey test and then continued with the ANOVA test and the BNT test at the 5% level. The results showed that the fermentation process and the addition of *S. cerevisiae* inoculum had an effect on increasing protein content, ash content, water content, and beta-glucan content, while fat content and carbohydrate content decreased. The use of the type of inoculum with the best interaction was found in a mixture of *R. oligosporus* and *S. cerevisiae* which produced tempeh with beta-glucan content of 0.69%, protein 6.98%, ash 0.48%, water 83.98%, carbohydrates 8.12%, and 0.47% fat.

Keywords: Tempeh gembus, *Saccharomyces cerevisiae*, *Rhizopus oligosporus*, Beta-glucan.

ABSTRAK

PENGARUH PENAMBAHAN *Saccharomyces cerevisiae* TERHADAP KANDUNGAN KIMIA DAN BETA-GLUKAN TEMPE GEMBUS

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Saccharomyces cerevisiae adalah jenis khamir yang dapat mensintesis beta-glukan pada dinding selnya. Beta-glukan dapat memberikan efek kesehatan antara lain mencegah terjadinya penyakit jantung koroner akibat radikal bebas dalam tubuh. Penelitian ini bertujuan untuk mengetahui pengaruh penambahan *Saccharomyces cerevisiae* terhadap kandungan kimia dan beta-glukan tempe gembus. Penelitian ini dilakukan menggunakan metode Rancangan Acak Kelompok Lengkap (RAKL) faktor tunggal (jenis inokulum) dengan 6 taraf, ragi tempe (RAPRIMA) (K1), *S. cerevisiae* (K2), *R. oligosporus* (K3), Ragi tempe (RAPRIMA) + *S. cerevisiae* (K4), *R. oligosporus* + Fermipan (K5), *R. oligosporus* + *S. cerevisiae* (K6). Parameter pengamatan meliputi kadar beta-glukan, kadar lemak, kadar protein, kadar abu, kadar air, dan kadar karbohidrat. Data yang diperoleh dianalisis secara statistik dengan menggunakan uji Barlett dan Tukey lalu dilanjutkan dengan uji ANOVA dan uji BNT pada taraf 5%. Hasil penelitian menunjukkan bahwa proses fermentasi dan penambahan inokulum *S. cerevisiae* berpengaruh terhadap peningkatan kadar protein, kadar abu, dan kadar air, dan kadar beta-glukan, sedangkan kadar lemak dan kadar karbohidrat menurun. Penggunaan jenis inokulum dengan interaksi terbaik terdapat pada campuran *R. oligosporus* dan *S. cerevisiae* yang menghasilkan tempe dengan kandungan beta-glukan sebesar 0,69%, protein 6,98%, abu 0,48%, air 83,98%, karbohidrat 8,12%, dan lemak 0,47%.

Kata kunci: Tempe gembus, *Saccharomyces cerevisiae*, *Rhizopus oligosporus*, Beta-glukan.