

THE EFFECT OF FERMENTATION TIME ON FIBER FRACTION AND
PHYSICAL QUALITY CONTENT OF SOYBEAN
[*Glycine max* (L.) Merr] STRAW

Achsanul Fikri Almuafik

NIM: 16022110

ABSTRACT*)

This study aims to determine the effect of fermentation time on fiber fraction and the physical quality content of soybean straw. This study start from 25 December 2017 - 30 January 2018 located in Jl. Kokosan 151, Sanggrahan, Condongcatur, Depok, Sleman and the Chemistry Laboratory of Mercu Buana University Yogyakarta. The study design used a Completely Randomized Design (CRD) unidirectional pattern consisting of 4 treatments with 3 replications, the treatment consisted of fermentation duration 0 days, 7 days, 14 days, and 21 days. The variables observed were the content of the fiber fraction, and the physical quality of soybean straw fermentation results. The results of the study were processed with Analysis of Variance (ANOVA) and if there were real differences, continued with Duncan's New Multiple Range Test (DMRT). The results of the analysis of variance content of soybean straw fiber fraction showed no significant differences ($P > 0.05$) in hemicellulose and cellulose content, and results were significantly different ($P < 0.05$) in lignin content. The results of analysis of variance in the physical quality of fermented soybean straw showed no significant differences ($P > 0.05$) in fungi and results were significantly different ($P < 0.05$) in pH, color, odor and texture. The results showed the average content of the fiber fraction as follows: Hemicellulose P0: 23.17%, P1: 22.39%, P2: 21.56% and P3: 19.61%, seluosa P0: 49.86%, P1: 48, 65%, P2: 43.98% and P3: 46, 59%, lignin P0: 12.04%, P1: 13.41%, P2: 16.31% and P3: 16.21%. The average physical quality test results are as follows: pH P0: 5,48, P1: 4,65, P2: 4,49 and P3: 4,34, color P0: 3, P1: 2, P2: 2,3 and P3: 2,5, odor P0: 1,1, P1: 2,7, P2: 2,4 and P3: 2,6, texture P0: 2,6, P1: 1,6, P2: 1,8 and P3: 2, fungi P0: 3, P1: 3, P2: 3 and P3: 3. The conclusion of this study is that soybean fermented with 7 days fermentation has the best results.

Keywords: Soybean Straw, Fiber Fraction, Physical Quality, Fermentation

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