

RINGKASAN

MILZAM HAFIDHUDDIN QISTHI. “Kadar Air pH dan Tingkat Kekerasan Keju dengan Lama pasteurisasi dan Penyimpanan Berbeda”. Penelitian dilaksanakan pada tanggal 21 April 2016 sampai 13 Mei 2016 di Laboratorium Teknologi Hasil Ternak, Fakultas Peternakan Universitas Jenderal Soedirman. Tujuan penelitian ini untuk mengetahui interaksi antara lama pasteurisasi dan lama penyimpanan berbeda serta pengaruh lama pasteurisasi dan lama penyimpanan berbeda terhadap kadar air, pH dan tingkat kekerasan keju. Penelitian ini menggunakan metode Rancangan Acak Lengkap pola faktorial 3x3 dengan 2 faktor utama. Sebagai faktor pertama adalah lama pasteurisasi dan faktor kedua lama penyimpanan. Setiap faktor yang diujikan terdiri dari 3 taraf yaitu lama pasteurisasi terdiri dari H1: 30 menit, H2: 60 menit, dan H3: 90 menit, serta lama penyimpanan terdiri dari W1: 0 hari, W2: 10 hari, dan W3: 20 hari. Variabel yang diamati pada penelitian ini adalah kadar air, pH dan tingkat kekerasan keju. Data yang diperoleh dianalisis menggunakan analisis variansi, perlakuan yang berpengaruh nyata diuji dengan uji orthogonal polynomial. Hasil analisis variansi menunjukkan bahwa interaksi antara lama pasteurisasi dan lama penyimpanan tidak berpengaruh nyata terhadap semua variabel ($P > 0,05$). Lama pasteurisasi berpengaruh nyata ($P < 0,05$) terhadap pH akan tetapi tidak berpengaruh nyata terhadap kadar air dan tingkat kekerasan keju. Lama penyimpanan berpengaruh sangat nyata ($P < 0,01$) terhadap semua variabel yang diujikan. Rataan kadar air tertinggi diperoleh pada W1 sebesar 59,91 % dan kadar air terendah pada W3 sebesar 19,12 %. Berdasarkan uji orthogonal polynomial pengaruh lama penyimpanan terhadap kadar air diperoleh persamaan kuadratik $Y = 59,911111 - 5,490833X + 0,17279444X^2$ dengan koefisien determinasi (r^2) sebesar 0,997. Rataan pH tertinggi dihasilkan 4,73 (W1) nilai pH terendah 4,14 (W3). Hasil uji orthogonal polynomial lama pasteurisasi diperoleh persamaan linier $Y = 4,166667 + 0,0046296X$ dan r^2 sebesar 0,132 sedangkan lama penyimpanan diperoleh persamaan linier $Y = 4,7388889 - 0,02944444X$ dengan r^2 sebesar 0,5941. Rataan tingkat kekerasan tertinggi dihasilkan W1 yaitu 0,01039 mm/gr/dtk dan terendah dihasilkan oleh W3 yaitu 0,5363 mm/gr/dtk. Uji orthogonal polynomial lama penyimpanan terhadap tingkat kekerasan keju persamaan kuadratik $Y = 0,05363333 - 0,00599778X + 0,00019178X^2$ dengan r^2 sebesar 0,9791. Lama pasteurisasi meningkatkan pH keju sedangkan lama penyimpanan menurunkan kadar air, pH dan meningkatkan kekerasan keju.

Kata kunci: keju, pasteurisasi, penyimpanan, kadar air, pH dan tingkat kekerasan

SUMMARY

MILZAM Hafidhuddin QISTHI. “The Effects of Different Durations of Pasteurization and Storage on the Moisture, pH and Firmness Level of Cheese”. This research, which had been conducted from April 21 to May 13 2016 at Livestock Product Technology Laboratory, Faculty of Animal Husbandry, Jenderal Soedirman University, aimed to determine the effects of different durations of pasteurization and storage as well as of their interaction on the moisture, pH and firmness levels of cheese. This experiment was designed within a completely randomized design factorial 3x3 with two main factors each of which consisted of three levels. The first factor, which was the pasteurization durations, consisted of H1: 30 minutes, H2: 60 minutes, and H3: 90 minutes, while the second factor, which was the storage durations, consisted of W1: 0 days, W2: 10 days, and W3: 20 days. The variables were the levels of moisture, pH, and firmness of cheese. Data were analyzed by using an analysis of variance, and orthogonal polynomial test was used for significant treatments. The analysis of variance showed that the interaction between pasteurization and storage durations did not significantly effect ($P>0,05$) on all of the variables. The pasteurization durations had a significant effect ($P<0,05$) on pH level, but not ($P>0,05$) on the moisture and firmness level of cheese. The storage duration highly and significantly affect ($P<0.01$) all of the variables. The highest average of the moisture levels was obtained at W1 and the lowest one was at W3, which were, respectively, 59,91% and 19,12%. Based on orthogonal polynomial test, the storage duration effects on the moisture levels formed a quadratic equation $Y = 59,911111 - 5,490833X + 0,17279444X^2$ with coefficient of determination (r^2) = 0,997. The highest average of the pH levels was obtained at W1 and the lowest one was at W3, which were, respectively 4,73 and 4,14. The orthogonal polynomial test on the pasteurization durations formed a linear equation $Y = 4,166667 + 0,0046296X$ with $r^2 = 0,1322$ while on the storage durations formed an linier equation linier $Y = 4.7388889 - 0.02944444X$ with $r^2 = 0,5941$. The highest average of the firmness levels of cheese was obtained at W1 and the lowest one was at W3, which were, respectively 0,01039 mm/g/sec and 0,5363 mm/g/sec. The orthogonal polynomial test on the storage durations on the firmness level of cheese formed an quadratic $Y = 0,05363333 - 0,00599778X + 0,00019178X^2$ with $r^2 = 0,9791$. This research concludes that pasteurization durations can increase the pH levels of cheese, while storage duration can decrease the moisture levels, pH levels, and increase the firmness level.

Keywords: cheese, pasteurization, storage, moisture, pH and firmness