

ABSTRAK

ANGGITA SAFITRI. Penelitian dilakukan untuk mengetahui pengaruh lama penyimpanan berbeda pada suhu dingin (4-8°C) terhadap nilai pH, viskositas dan warna kefir susu-kolostrum sapi. Penelitian dilaksanakan pada tanggal 6-19 Januari 2020 di Laboratorium Teknologi Hasil Ternak, Fakultas Peternakan, Universitas Jenderal Soedirman, Purwokerto. Penelitian kefir susu-kolostrum sapi dilakukan dengan menggunakan 3 liter susu sapi, 3 liter kolostrum sapi dan 300 gram biji kefir. Penelitian dilakukan dengan membuat kefir presentase 50% susu sapi, 50% kolostrum sapi dan 5% biji kefir dengan lama inkubasi 24 jam pada suhu ruang. Kefir yang telah diinkubasi selama 24 jam kemudian disaring untuk memisahkan biji kefir dan kefir, selanjutnya kefir dipisahkan menjadi 5 perlakuan yaitu P0 (hari ke 0), P1 (hari ke 3), P2 (hari ke 6), P3 (hari ke 9) dan P4 (hari ke 12). Sampel yang digunakan pada setiap perlakuan yaitu 300 ml dan disimpan ditoples yang berbeda pada refrigerator dengan suhu 4-8°C. Semua perlakuan dilakukan pengukuran nilai pH, viskositas dan warna kefir. Metode yang dilakukan menggunakan metode eksperimen dengan Rancangan Acak Lengkap (RAL) yang dilakukan 4 kali ulangan. Data yang diperoleh selanjutnya dianalisis menggunakan analisis variansi dan dilakukan uji lanjut orthogonal polinomial. Hasil analisis menunjukkan bahwa lama penyimpanan berbeda pada suhu dingin (4-8°C) berpengaruh sangat nyata terhadap nilai pH kefir ($P < 0,01$) dengan rata-rata nilai pH 5,44 dan persamaan garis $Y = 4,75 + 0,702X + (-0,11)X^2 + 0,004X^3$, berpengaruh nyata terhadap viskositas kefir ($P < 0,05$) dengan rata-rata 253,02 CP dan persamaan garis $Y = 175,53 + 59,33X + (-10,34)X^2 + 0,52X^3$, dan tidak berpengaruh nyata terhadap warna kefir (*lightness*, *redness*, dan *yellowness*) ($P > 0,05$). Hasil dari percobaan lama penyimpanan berbeda pada suhu dingin (4-8°C) terhadap kefir didapatkan dengan pengukuran nilai pH dengan rata-rata P0 4,74±0,03, P1 6,05±0,41, P2 5,86±0,19, P3 5,49±0,08, dan P4 5,04±0,09. Rata-rata hasil pengukuran variabel lain yaitu viskositas dengan nilai P0 172,85±36,84 CP, P1 285,175±34,25 CP, P2 255,15±53,34 CP, P3 260,50±59,72 CP, dan P4 291,43±43,64 CP. Rata-rata hasil pengukuran variabel warna dibedakan menjadi 3 yaitu *lightness* dengan nilai rata-rata P0 69,78±5,25, P1 64,33±1,66, P2 67,43±4,01, P3 67,00±0,70, P4 65,98±2,07. *Redness* dengan rata-rata P0 -3,1±0,46, P1 -2,40±0,07, P2 -3,05±0,15, P3 -2,88±0,60, P4 -2,60±0,32 dan *yellowness* P0 13,23±2,61, P1 11,78±1,55, P2 11,95±1,63, P3 11,43±0,98, P4 10,85±1,48. Kesimpulan dari penelitian ini lama penyimpanan berbeda kefir susu-kolostrum sapi yang disimpan dalam suhu refrigerator (4-8°C) dapat menyebabkan perubahan nilai pH dan viskositas, namun menghasilkan warna yang relatif sama.

Kata Kunci : Kefir, Susu, Kolostrum, Lama Penyimpanan, pH, Warna, Viskositas

ABSTRACT

ANGGITA SAFITRI. This study was conducted to determine effect of different storage times on cold temperature (4-8°C) on pH, viscosity and color of milk-colostrum kefir of cows. The study was conducted on January 6-19, 2020 at the Laboratory of Animal Products Technology, Faculty of Animal Science, Jenderal Soedirman University, Purwokerto. The materials of study used 3 liter of cow's milk, 3 liter of cow's colostrum and 300 gram of kefir grain. The study used mixing of kefir by 50% of cow's milk, 50% of cow's colostrum and 5% of kefir grain with 24-hour incubation time at room temperature. Kefir products that have been incubated for 24 hours were filtered to separate kefir and kefir grains, then kefir was separated into 5 treatments P0 (day 0), P1 (day 3), P2 (day 6), P3 (day 9) and P4 (day 12). Sample that was used in each treatment was 300 ml and was stored in different jars in a refrigerator at 4-8°C. All treatment was measured for pH, viscosity and color of kefir. The method of study used an experimental method with Completely Randomized Design (CRD) which was carried out 4 replications. The data obtained were further analyzed by analysis of variance, then orthogonal polynomial for further test. The results of the analysis showed that the different storage times at cold temperatures (4-8°C) had very significant effect ($P < 0,01$) at the pH of kefir value with an average of 5,44 and the line equation of $Y = 4,75 + 0,702X + (-0,11)X^2 + 0,004X^3$, then had significant effect ($P < 0,05$) at the viscosity of kefir with an average of 253,02 CP and the line equation of $Y = 175,53 + 59,33X + (-10,34)X^2 + 0,52X^3$, and had no significant effect ($P > 0,05$) at colors of kefir (lightness, redness, and yellowness). The results obtained of the pH average value were P0 4,74±0,03, P1 6,05±0,41, P2 5,86±0,19, P3 5,49±0,08, and P4 5,04±0,09. The average results of viscosity were P0 172,85±36,84 CP, P1 285,175±34,25 CP, P2 255,15±53,34 CP, P3 260,50±59,72 CP, and P4 291,43±43,64 CP. Then the average of colors results were divided into 3 names (lightness, redness, and yellowness). Lightness had average value of P0 69,78±5,25, P1 64,33±1,66, P2 67,43±4,01, P3 67,00±0,70, P4 65,98±2,07. Redness had average value of P0 -3,1±0,46, P1 -2,40±0,07, P2 -3,05±0,15, P3 -2,88±0,60, P4 -2,60±0,32 and then yellowness had average value of P0 13,23±2,61, P1 11,78±1,55, P2 11,95±1,63, P3 11,43±0,98, P4 10,85±1,48. The conclusion from this study was the different storage times of milk-colostrum kefir of cows stored in refrigerator temperatures (4-8°C) could cause changes in pH and viscosity values, but produce relatively similar in colors.

Keywords : Kefir, Milk, Colostrum, Storage Time, pH, Color, Viscosity