RINGKASAN

LINA MARIYANA. Kadar Asam Laktat, *Free Fatty Acid*, dan Bilangan Asam *Concentrated Yoghurt* Lemak Rendah dengan Penambahan Inulin atau Pati Ubi Jalar. Penelitian dilaksanakan mulai tanggal 7 sampai 17 Desember 2015 di Laboratorium Teknologi Hasil Ternak Fakultas Peternakan, Universitas Jenderal Soedirman, Purwokerto. Penelitian ini bertujuan untuk mempelajari pengaruh penggunaan susu penuh, susu lemak rendah, dan susu lemak rendah dengan penambahan karbohidrat yang berbeda (inulin dan pati ubi jalar) pada pembuatan *concentrated yoghurt* terhadap kadar asam laktat, *free fatty acid* dan bilangan asam. Materi yang digunakan dalam penelitian ini, yaitu susu sapi lemak penuh, susu sapi lemak rendah, kultur starter kering yang terdiri atas bakteri *Lactobacillus bulgaricus, Streptococcus thermophilus*, dan *Lactobacillus acidophilus*, inulin dan pati ubi jalar. Penelitian eksperimental ini menggunakan Rancangan Acak Lengkap (RAL) dengan 4 perlakuan. Perlakuan terdiri atas P0 = *concentrated yoghurt* lemak penuh, P1 = *concentrated yoghurt* lemak rendah, P2 = *concentrated yoghurt* lemak rendah + 2% inulin, dan P4 = *concentrated yoghurt* lemak rendah + 2% pati ubi jalar. Setiap perlakuan diulang sebanyak 5 kali. Peubah yang diukur pada penelitian ini, yaitu kadar asam laktat, *free fatty acid* dan bilangan asam. Data yang diperoleh dianalisis menggunakan analisis variansi dan dilanjutkan dengan uji *contras orthogonal*. Hasil penelitian menunjukan bahwa *concentrated yoghurt* lemak penuh memiliki kadar asam laktat, *free fatty acid* dan bilangan asam yang lebih rendah dibandingkan kelompok *concentrated yoghurt* lemak rendah sedangkan perlakuan lain menunjukan hasil yang sama. Rataan kadar asam laktat dan *free fatty acid concentrated yoghurt* yang berasal dari susu lemak penuh, susu lemak rendah, susu lemak rendah + inulin, dan susu lemak rendah + pati ubi jalar secara berurutan, yaitu1,93%; 2,18%; 2,25%; 2,19%; dan 6,23% ; 6,95%; 7,02%; 6,57%; dan bilangan asam, yaitu 12,37%; 13,80%; 13,94%; dan 13,04%. Kesimpulan dari penelitian, yaitu inulin lebih sesuai sebagai pengganti lemak dibandingkan pati ubi jalar dalam pembuatan *concentrated yoghurt* lemak rendah.

SUMMARY

LINA MARIYANA. Lactic Acid Content, Free Fatty Acid and Acidity Value of Low Fat Concentrated Yoghurt with Addition of Inulin or Sweet Potato Starch. The experimental was conducted from December 7th to 17th, 2015 at Laboratory of Animal Products Technology, Animal Science Faculty, Jenderal Soedirman University, Purwokerto. This research aimed to study the effect of full fat milk, low fat milk, and low fat milk with addition of different carbohydrates (inulin and sweet potato starch) in concentrated yoghurt on lactic acid content, free fatty acid and acidity value. The materials used were full fat cow's milk, low fat cow's milk, dried starter culture (*Lactobacillus bulgaricus, Streptococcus thermophilus,* and *Lactobacillus acidophilus*), inulin and sweet potato starch. This research was done experimentaly by using a completely randomized design (CRD) with five treatments. Treatments consisted of P0 = full fat concentrated yoghurt, P1 = low fat concentrated yoghurt, P2 = low fat concentrated yoghurt + 2% inulin, and P3 = low fat concentrated yoghurt + 2% sweet potato starch. Each treatment was repeated 5 times. Variables measured were lactic acid content, free fatty acid and acidity value. Data were analyzed using analysis of variance and then continued by orthogonal contrast. Results showed that concentrated yoghurt from full fat milk had lactic acid value, free fatty acid, and acidity value were lower than low fat concentrated yoghurt groups, meanwhile other contrasts were remain similar.The average of acid lactic content and free fatty acid of concentrated yoghurts produced by full fat, low fat, and low fat + inulin or sweet potato starch were 1,93%; 2,18%; 2,25%; 2,19%; and 6,23% ; 6,95%; 7,02%; 6,57%, respectively, and acidity values were 12,37%; 13,80%; 13,94%; 13,04%, respectively. In conclusion, inulin is more suitable than sweet potato starch as fat replacer in low fat concentrated yoghurt.