

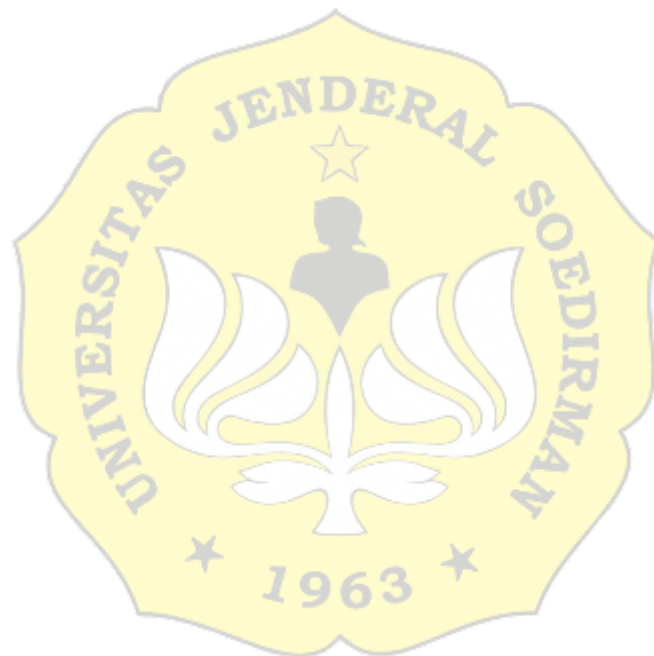
RINGKASAN

GALANG BUDHI SETIAWAN. “Pengaruh perbedaan temperatur dan lama waktu inkubasi terhadap total *yeast*, kadar etanol dan pH kefir rendah lemak”. Penelitian dilaksanakan mulai tanggal 15 Desember sampai 23 Desember 2015 bertempat di Laboratorium Teknologi Hasil Ternak Fakultas Peternakan dan Laboratorium Kimia Organik FMIPA Universitas Jenderal Soedirman, Purwokerto. Penelitian ini bertujuan untuk mempelajari pengaruh perbedaan temperatur dan lama waktu inkubasi untuk mendapatkan total *yeast*, kadar etanol dan pH kefir rendah lemak. Metode Penelitian yang digunakan yaitu metode eksperimen dengan menggunakan Rancangan Acak Lengkap (RAL) Pola Faktorial. Terdapat enam kombinasi perlakuan dengan 4 kali ulangan. Peubah yang diukur yaitu total *yeast*, kadar etanol dan pH. Data yang diperoleh dianalisis menggunakan analisis variansi dan jika $F_{hitung} > F_{tabel}$ maka dilanjutkan dengan uji lanjut BNJ (beda nyata jujur).

Hasil penelitian kefir rendah lemak bahwa perbedaan temperatur dan lama waktu inkubasi tidak memiliki interaksi berpengaruh nyata terhadap total *yeast* dan kadar etanol, akan tetapi berpengaruh nyata pada faktor lama waktu inkubasi terhadap kadar etanol. Variabel pH menghasilkan interaksi yang berpengaruh sangat nyata. Rataan total *yeast* dengan temperatur ruang + lama waktu inkubasi 16 jam, temperatur ruang + lama waktu inkubasi 20 jam, temperatur ruang + lama waktu inkubasi 24 jam, temperatur terkontrol (31°C) + lama waktu inkubasi 16 jam, temperatur terkontrol (31°C) + lama waktu inkubasi 20 jam dan temperatur terkontrol (31°C) + lama waktu inkubasi 24 jam secara berurutan yaitu 9,4 (logCFU/ml), 9,4 (logCFU/ml), 9,8 (logCFU/ml), 9,7 (logCFU/ml), 9,8 (logCFU/ml) dan 9,9 (logCFU/ml). Sedangkan rata-rata nilai kadar etanol dan pH secara berurutan adalah 1,14%, 1,3%, 1,4%, 1,14%, 1,2%, 1,4% dan 4,7 4,0, 3,9, 4,4, 3,9, 3,7.

Kesimpulan hasil penelitian menunjukkan bahwa temperatur terkontrol dan lama waktu inkubasi selama 24 jam mampu menghasilkan total *yeast* sebanyak 9,9 logCFU/ml, kadar etanol 1,4 % dan pH 3,7. Karakteristik kefir tidak banyak

dipengaruhi oleh faktor temperatur dan faktor lama waktu inkubasi sehingga dapat direkomendasikan untuk menggunakan temperatur terkontrol dan lama waktu inkubasi selama 24 jam dalam proses pembuatan kefir susu karena produk yang dihasilkan mengandung asam laktat yang lebih tinggi. Produk yang semakin asam maka semakin lama masa simpan.



SUMMARY

GALANG BUDHI SETIAWAN. “The effect of different temperature and duration of incubation on yeast total, etanol contents and pH of low fat kefir”. Conducted from 15 until 23 of december 2015 at Animal Product Technology Laboratory, Animal Science Faculty and Organic Chemistry Laboratory of Math and Natural Science Faculty of Jenderal Soedirman University, Purwokerto. Aim of the research was to study the effect of different temperature and time of long incubation to yield yeast total, etanol contents and pH of low fat kefir. This experimental research used a Completely Randomized Design (CRD) of Factorial design in which there were six combined treatments and four replications. The variable measured were yeast total, etanol contents and pH. Data resulted were analyzed by analysis of variance, if $F_{\text{calculate}} > F_{\text{table}}$, then continued by Honestly Significant Difference (HSD).

Result of research showed that the different of temperature and time of long incubation were no affect toward yeast total and etanol contents, but highly significant effect on time of long incubation towards etanol contents. pH have a highly significant effect. The average of yeast total in room temperature + 16 hours incubation, room temperature + 20 hours incubation, room temperature + 24 hours incubation, controled temperature (31°C) + 16 hours incubation, controled temperature (31°C) + 20 hours incubation dan controled temperature (31°C) + 24 hours incubation sequantially were 9,4 (logCFU/ml), 9,4 (logCFU/ml), 9,8 (logCFU/ml), 9,7 (logCFU/ml), 9,8 (logCFU/ml) and 9,9 (logCFU/ml). While the average value of etanol contents and pH sequantially are 1,14%, 1,3%, 1,4%, 1,14%, 1,2%, 1,4% and 4,7, 4,0, 3,9, 4,4, 3,9, 3,7.

This research concludes that the controlled temperature and 24 hours incubation could yield yeast total 9,9 logCFU/ml, etanol contents 1,4 % and pH 3,7. The characteristic of kefir was less affected by the temperature factor and length of incubation therefore it could be recommended to use the controlled temperature and 24 hours incubation in the process of kefir production, because

the product contains high lactic acid. The higher acidity of a product, the longer its storing ability.

