

PENGARUH PERBEDAAN JENIS SUSU DAN GARAM KALSIMUM TERHADAP KARAKTERISTIK FISIK DAN KIMIA WHEY KEJU SEGAR

Wisnu Syam Alamsyah
20/462772/PT/08689

INTISARI

Penelitian ini bertujuan untuk mengetahui perbedaan jenis susu (susu sapi dan susu kambing) dan sumber kalsium (klorida kalsium dan karbonat kalsium). Hasil penelitian menunjukkan bahwa perbedaan jenis susu menunjukkan perbedaan dalam komposisi nutrisi (protein, lemak, laktosa, mineral, dan komponen lainnya). Pembuatan keju menghasilkan limbah atau produk samping berupa *whey*. Perlakuan yang diberikan adalah dua jenis susu, garam kalsium (klorida kalsium dan karbonat kalsium), dan konsentrasi garam kalsium (0, 10, 20 mg/100ml susu). Karakteristik fisik dan kimia *whey* keju dianalisis menggunakan two way ANOVA, dan uji Duncan's Multiple Range Test. Kedua jenis susu dapat digunakan sebagai sumber pembuatan keju yang menghasilkan larutan *whey*. Volume *whey* sekitar 75-83% dari susu yang digunakan. Komposisi *whey* adalah: protein (susu sapi $2,84 \pm 0,19\%$ dan susu kambing $3,52 \pm 0,13\%$); kadar air (susu sapi $93,33 \pm 0,14\%$ dan susu kambing $91,78 \pm 0,74\%$); total padat (susu sapi $6,67 \pm 0,14\%$ dan susu kambing $8,22 \pm 0,74\%$). Kandungan laktosa dalam *whey* sekitar 3-4,5%. Kandungan abu dari *whey* sekitar 0,6-0,8%, di mana kandungan Ca sekitar 0,5-0,6%. Jenis susu berpengaruh secara signifikan ($P < 0,05$) terhadap: volume *whey*, pH, protein, kadar air, total padat, serta mineral, kalsium, dan laktosa. Tingkat garam kalsium berpengaruh secara signifikan ($P < 0,05$) terhadap: volume *whey*, mineral, dan kalsium. Perbedaan jenis susu, jenis dan konsentrasi garam kalsium memberikan pengaruh pada karakteristik fisik dan kimia *whey* keju segar.

Kata kunci: Susu kambing, Susu sapi, *Whey* keju, Garam kalsium, kualitas fisikokimia

EFFECTS OF DIFFERENT MILK TYPES AND CALCIUM SALTS ON THE PHYSICAL AND CHEMICAL CHARACTERISTICS OF FRESH CHEESE WHEY

Wisnu Syam Alamsyah
20/462772/PT/08689

ABSTRACT

This research aimed to determine the differences between types of milk (cow and goat milk) and source of calcium (calcium chloride and calcium carbonate). The result of research has showed that different types of milk explained differences in nutritional composition (protein, fat, lactose, minerals and other components). Cheese making produces waste or by-products in the form of whey. The treatments were two types of milk, calcium salts (calcium chloride and calcium carbonate) and calcium salt concentration (0, 10, 20 mg/100ml milk). The physical and chemical characteristics of cheese whey were analyzed using two way ANOVA and Duncan's Multiple Range Test. Both of milk can be used as a source of cheese making lead to produce whey solution. The volume of whey were about 75-83% of milk used. The composition of whey were: protein (cow $2.84 \pm 0.19\%$ and goat $3.52 \pm 0.13\%$); water content (cow $93.33 \pm 0.14\%$ and goat $91.78 \pm 0.74\%$); total solids (cow $6.67 \pm 0.14\%$ and goat $8.22 \pm 0.74\%$). The lactose content of whey were about 3-4.5%. The ash content of whey were about 0.6-0.8% in which the content of Ca were about 0.5-0.6%. The type of milk have influenced significantly ($P < 0.05$): volume of whey, pH, protein, water content, total solid, as well as mineral, calcium, and lactose. The level of calcium salt have influenced significantly ($P < 0.05$): volume of whey, mineral, and calcium. Differences in milk type, type and concentration of calcium salt influenced the physical and chemical characteristics of fresh cheese whey.

Keywords: Goat milk, Cow milk, Cheese whey, Calcium salt, physicochemical quality