

# KARAKTERISTIK FISIKOKIMIA YOGHURT DARI JENIS SUSU YANG BERBEDA DENGAN PENAMBAHAN *Carboxy methyl cellulose* (CMC)

## ABSTRAK

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Penelitian dengan judul “Karakteristik Fisikokimia Yoghurt Dari Jenis Susu Yang Berbeda Dengan Penambahan *Carboxy methyl cellulose* (CMC)” bertujuan untuk mengkaji pengaruh interaksi antara jenis susu yang berbeda dan penambahan CMC terhadap karakteristik fisikokimia yoghurt. Materi penelitian yang digunakan adalah susu sapi segar, susu UHT *low fat*, susu UHT *full fat*, *starter* yoghurt, CMC. Penelitian dilakukan secara eksperimen menggunakan Rancangan Acak Lengkap pola faktorial 3x3. Faktor pertama yaitu jenis susu (susu sapi segar, susu UHT *low fat*, susu UHT *full fat*) dan faktor kedua adalah level CMC 0; 0,3; 0,6%. Setiap perlakuan diulang sebanyak 3 kali. Variabel yang diukur meliputi pH, total asam tertitrasi, viskositas, sineresis, WHC, kadar air dan total padatan yoghurt. Hasil penelitian menunjukkan rata-rata pH yoghurt susu sapi segar, susu UHT *low fat*, susu UHT *full fat* sebesar 5,11; 4,90; 4,89. Rataan total asam tertitrasi yoghurt susu sapi segar, susu UHT *low fat*, susu UHT *full fat* sebesar 1,33; 1,40; 1,71%. Rataan viskositas yoghurt susu sapi segar, susu UHT *low fat*, susu UHT *full fat* sebesar 1133,49; 1406,09; 1637,62 cP. Sineresis yoghurt susu sapi segar, susu UHT *low fat*, susu UHT *full fat* sebesar 21,30; 14,99; 11,92%. Rataan WHC yoghurt susu sapi segar, susu UHT *low fat*, susu UHT *full fat* sebesar 46,81; 51,68; 76,13%. Rataan kadar air yoghurt susu sapi segar, susu UHT *low fat*, susu UHT *full fat* sebesar 87,38; 89,98; 87,91%. Rataan total padatan yoghurt susu sapi segar, susu UHT *low fat*, susu UHT *full fat* sebesar 12,62; 10,02; 12,09%. Hasil analisis menunjukkan interaksi penambahan CMC dan jenis susu yang berbeda berpengaruh sangat nyata ( $P < 0,01$ ) terhadap pH, total asam tertitrasi, viskositas, sineresis dan WHC yoghurt. Faktor jenis susu maupun penambahan CMC berpengaruh sangat nyata ( $P < 0,01$ ) terhadap kadar air dan total padatan yoghurt. Kesimpulan, penambahan CMC pada yoghurt dengan jenis susu yang berbeda dapat mempertahankan pH dan total asam tertitrasi, menurunkan sineresis, serta meningkatkan viskositas dan WHC. Namun menghasilkan kadar air dan total padatan yang sama.

*Kata kunci : jenis susu, CMC, yoghurt, karakteristik fisikokimia*

# PHYSICOCHEMICAL CHARACTERISTICS OF YOGHURT FROM DIFFERENT TYPES OF MILK WITH THE ADDITION OF *Carboxy methyl cellulose* (CMC)

## ABSTRACT

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The study entitled "Physicochemical Characteristics Of Yoghurt From Different Types Of Milk With The Addition Of *Carboxy methyl cellulose* (CMC)" aims to examine the influence of interactions between different types of milk and the addition of CMC on the physicochemical characteristics of yoghurt. The research materials used are fresh cow's milk, *low fat* UHT milk, *full fat* UHT milk, *starter* yoghurt, CMC. The study was conducted experimentally using a Complete Randomized Design of 3x3 factorial patterns. The first factor is the type of milk (fresh cow's milk, *low fat* UHT milk, *full fat* UHT milk) and the second factor is CMC level 0; 0,3; 0,6%. Each treatment is repeated 3 times. Variables measured include pH, total titrated acid, viscosity, syneresis, WHC, moisture content and total yoghurt solids. The results showed that the average pH of fresh cow's milk yoghurt, *low fat* UHT milk, *full fat* UHT milk was 5.11; 4.90; 4.89. The average total titrated acid of fresh cow's milk yoghurt, *low fat* UHT milk, *full fat* UHT milk was 1,33; 1,40; 1,71%. The average viscosity of fresh cow's milk yoghurt, *low fat* UHT milk, *full fat* UHT milk is 1133,49; 1406,09; 1637,62 cP. Sineresis yoghurt fresh cow's milk, UHT *low fat* milk, UHT *full fat* milk of 21,30; 14,99; 11,92%. WHC average fresh cow's milk yoghurt, *low fat* UHT milk, *full fat* UHT milk was 46,81; 51,68; 76,13%. The average water content of fresh cow's milk yoghurt, *low fat* UHT milk, *full fat* UHT milk is 87,38; 89,98; 87,91%. The average total solids of fresh cow's milk yoghurt, *low fat* UHT milk, *full fat* UHT milk were 12,62; 10,02; 12,09%. The results of the analysis showed that the interaction of the addition of CMC and different types of milk had a very noticeable effect ( $P < 0,01$ ) on pH, total titrated acid, viscosity, syneresis and WHC yoghurt. Milk type factors and the addition of CMC have a very noticeable effect ( $P < 0,01$ ) on the moisture content and total solids of yoghurt. In conclusion, the addition of CMC to yoghurt with different types of milk can maintain pH and total titrated acid, lower syneresis, and increase viscosity and WHC. But it produces the same moisture content and total solids.

*Keywords* : type of milk, CMC, yoghurt, physicochemical characteristics