

## Modifikasi Sifat Fisik Yogurt Susu Kambing dengan Penambahan Microbial Transglutaminase dan Sumber Protein Eksternal

<b>Title</b>	Modifikasi Sifat Fisik Yogurt Susu Kambing dengan Penambahan Microbial Transglutaminase dan Sumber Protein Eksternal
<b>Author Order</b>	4 of 6
<b>Accreditation</b>	2
<b>Abstract</b>	<p>Penelitian ini bertujuan untuk mempelajari sifat fisik yogurt susu kambing yang dimodifikasi dengan enzim mTGase dan sumber protein eksternal. Sifat fisik yang diamati meliputi sineresis spontan (wheyng-off), sineresis, water holding capacity (WHC) dan viskositas. Materi yang digunakan yaitu susu segar kambing etawah, kultur starter yogurt, enzim mTGase, susu skim bubuk, dan whey protein concentrate (WPC). Rancangan percobaan yang digunakan adalah rancangan acak lengkap dengan 4 perlakuan dan 5 kali ulangan. Perlakuan terdiri atas kontrol yaitu susu kambing segar, penambahan mTGase sebanyak 0,03% (w/w), mTGase dan susu skim 1% (w/w), mTGase dan whey protein concentrate 1% (w/w). Susu dikondisikan selama 24 jam pada refrigerator (10°C) sebelum difermentasi menjadi yogurt. Parameter yang diuji berupa wheyng-off, sineresis, water holding capacity, dan viskositas yang diukur 1 jam setelah yogurt dikeluarkan dari refrigerator. Hasil penelitian menunjukkan bahwa enzim mTGase secara signifikan menyebabkan penurunan sineresis, peningkatan WHC, dan viskositas, namun tidak menyebabkan perbedaan yang signifikan pada wheyng-off yogurt. Kombinasi mTGase dan sumber protein eksternal menurunkan sineresis secara signifikan, namun tidak berpengaruh signifikan terhadap wheyng-off, WHC, dan viskositas yogurt. Kombinasi mTGase + WPC 1% menghasilkan kualitas fisik yogurt yang tidak jauh berbeda dengan kombinasi mTGase + skim 1% terhadap semua parameter yang diukur. Berdasarkan hasil penelitian, dapat disimpulkan bahwa sifat fisik yogurt susu sapi dapat dimodifikasi dengan enzim mTGase saja atau kombinasi dengan sumber protein eksternal. Manfaat penelitian ini adalah memberikan informasi penggunaan enzim mTGase yang dikombinasikan dengan WPC atau susu skim 1% ternyata dapat meningkatkan kualitas fisik yogurt.</p> <p>Modification of Physical Properties of Goat Milk Yogurt by Addition of Microbial Transglutaminase Enzyme and External Protein Sources</p> <p>The purpose of this research was to study the modification of the physical properties of goat milk yogurt with the addition of the enzyme transglutaminase (mTGase) and external protein. The benefit of this research was to provide information on methods to improve the quality of yogurt in terms of the physical properties of yogurt. The research used fresh goat milk, dry starter culture, mTGase enzyme, skimmed milk powder, and whey protein concentrate (WPC). A completely randomized design with 4 treatments and 5 replications was used as research design. The treatments were fresh goat milk as control, fresh goat milk with 0.03% w/w mTGase, mTGase and 1% w/w skim milk, mTGase and 1% w/w whey protein concentrate. The milk was stored for 24 hours in a refrigerator (10°C) prior to fermentation process. Wheyng-off, syneresis, water holding capacity and viscosity were then measured at an hour after yogurt was removed from the refrigerator. The results showed that mTGase significantly reduced syneresis, increased WHC, and viscosity, but had no significant effect on wheyng-off. The combination of mTGase + external protein sources significantly reduced syneresis, but the effect on wheyng-off, WHC and yogurt were not significantly detected. The combination of mTGase + 1% WPC had similar characteristics as mTGase + 1% skim milk. In conclusion, the physical characteristics of yogurt from goat milk could be modified by mTGase enzyme or in combination with external protein sources. The use of mTGase enzyme in combination with WPC or skim milk improves the physical characteristics of yogurt.</p>
<b>Publisher Name</b>	Faculty of Animal and Agricultural Sciences, Diponegoro University
<b>Publish Date</b>	2020-05-10
<b>Publish Year</b>	2020
<b>Doi</b>	DOI: 10.17728/jatp.6396
<b>Citation</b>	
<b>Source</b>	Jurnal Aplikasi Teknologi Pangan
<b>Source Issue</b>	Vol 9, No 2 (2020): Mei 2020
<b>Source Page</b>	77-82

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<b>Url</b>	<a href="https://ejournal2.undip.ac.id/index.php/jatp/article/view/6396/3979">https://ejournal2.undip.ac.id/index.php/jatp/article/view/6396/3979</a>
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