



## **PENGGUNAAN GELLING AGENT UNTUK MENINGKATKAN STABILITAS FISIK YOGHURT WIJEN (*Sesamum indicum*)**

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### INTISARI

Yoghurt wijen merupakan salah satu alternatif diversifikasi pengolahan wijen. Kekurang mampuan membentuk gel susu wijen, memerlukan kajian penambahan *gelling agent*. Pada penelitian ini dikaji penggunaan alginat, karagenan, pektin dan kombinasinya. Tujuan penelitian ini adalah (1) Menentukan jenis dan konsentrasi *gelling agent* (alginat, karagenan, pektin atau kombinasinya) yang sesuai untuk memperbaiki sifat fisikokimia yoghurt wijen, (2) Mengetahui pengaruh proses fermentasi terhadap aktivitas antioksidan. Susu wijen didapat dari hasil ekstraksi wijen dan air sebesar 1:5 difermentasi menggunakan kultur bakteri *Streptococcus thermophilus* dan *Lactobacillus bulgaricus* pada suhu 37°C selama 24 jam dengan penambahan 7% sukrosa dan 0,6% *gelling agent*. Analisis yang dilakukan pada penelitian ini adalah perubahan pH, *titratable acidity*, total bakteri asam laktat, viskositas, WHC, indeks stabilitas, aktivitas pemerangkapan DPPH dan total senyawa fenol. Hasil analisis menunjukkan bahwa penambahan *gelling agent* dan kombinasinya tidak mempengaruhi pH yoghurt wijen yang dihasilkan, tetapi mempengaruhi nilai *titratable acidity*. *Titrateable acidity* tertinggi terdapat pada yoghurt wijen dengan penambahan karagenan, alginat+karagenan dan alginat+pektin. Total bakteri asam laktat pada yoghurt wijen mengalami peningkatan 1-2 log cfu/ml setelah diinkubasi selama 24 jam. Yoghurt wijen dengan penambahan *gelling agent* alginat+karagenan memiliki viskositas, water holding capacity, dan indeks stabilitas terbaik (2536 cp, 63,50% dan 1). Susu wijen yang telah difermentasi 24 jam memiliki aktivitas antioksidan dan total fenol lebih besar dibandingkan dengan sebelum fermentasi.

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Kata kunci : yoghurt wijen, fermentasi, *Lactobacillus bulgaricus*, *Streptococcus thermophilus*, Karagenan, alginat, pektin



## UTILIZATION OF GELLING AGENT TO INCREASE PHYSICAL STABILITY OF SESAME YOGHURT (*Sesamum indicum*)

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### ABSTRACT

Sesame yoghurt is one of the alternatives diversification sesame processing. Lack of ability to form gel, required studies on the additional of gelling agent. In this study examined the use of alginate, carrageenan, pectin and its combination. The objectives of this study are: (1) to determine variety and concentration of gelling agent (alginate, carrageenan, pectin or its combination) according to the physicochemical properties of sesame yoghurt and, (2) to determine the fermentation process effect on antioxidant activity. Sesame milk obtained from an extract of sesame and water 1:5 which fermented using *Streptococcus thermophilus* and *Lactobacillus bulgaricus* at 37°C for 24 hours with the addition of 7% sucrose and 0,6% gelling agent. The analysis conducted is changing pH, titratable acidity, total lactic acid bacteria, viscosity, WHC, index stability, antioxidant activity and total phenolic compound. The results showed that sesame yoghurt with the addition of gelling agent and its combination did not effect the pH but effect on titratable acidity value. The highest titratable acidity was found in fermented sesame milk with the addition of carrageenan, alginate + carrageenan and alginate + pectin. After 24 hour fermentation, the total lactic acid bacteria in sesame yoghurt was increased to 1-2 log cycle. The best viscosity was yielded by the sesame yoghurt with addition of gelling agent alginate + carrageenan, which its water holding capacity and physical stability was around 2536 cp, 63.50% and 1%, respectively. Greater antioxidant activity and total phenolic compound was shown by the sesame milk after 24 hour fermentation.

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Keywords: sesame yoghurt, fermentation, *Lactobacillus bulgaricus*, *Streptococcus thermophilus*, carrageenan, alginate, pectin