

عنوان مقاله:

Application of Xanthan, Guar and Psyllium gum in Iranian yoghurt drink (doogh) to increase in stability by fluid gel technology

محل انتشار:

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خلاصه مقاله:

Doogh is a native fermented dairy drink in Iran and has an important share in beverage industry. Phase separation is an undeniable phenomenon which takes place in acidic dairy drinks involving Doogh. In this study fluid gel technology was used to improve the stability and suspending properties. Guar gum, Xanthan gum and psyllium gum were employed. Different gums concentrations (0.01, 0.03 and 0.05% w/w) and hydration temperature of hydrocolloids (70, 80 and 85) with total solids standardized as 5% (w/w) of final product were used. Hot hydrocolloid solutions were added to partial diluted Doogh while shearing it to produce fluid gel. Flow behavior, particle size distribution, microstructure and serum separation were measured. Guar causes a high apparent viscosity at low shear rates, with significant impact on the flow. It changes in the microstructure and particle size. Also, it reduced the volume of separated serum. Guar enhanced the stability through network formation and trapping of particles. Xanthan and psyllium also had an impact on the flow behavior and properties of colloidal particles, but were less effective than Guar. Xanthan and Psyllium particles increase doogh stability with developing a repulsive force, but larger particles were deposited. Yield stress was observed in the samples and the extrapolation method was based on the amount of Herschel-Blackley. In general, samples containing guar caused higher yield stress.

کلمات کلیدی:

doogh, phase separation, rheological properties, hydrocolloid, guar

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