

DP 11

Effect of some food hydrocolloids on the rheological properties of typical soft ice cream

Seyed M. A. Razavi*, Mohammad H. Haddad Khodaparast, Maryam Bahram Parvar
Department of Food Science and Technology, Ferdowsi University of Mashhad (FUM),
Khorasan, P.O. Box 91775 – 1163, Iran

*Email: S.Razavi@UM.ac.Ir

Objectives: To study effect of 2 novel hydrocolloids viz., Balangu seed gum (BSG) and palmate-tuber salep (PTS) with corresponding CMC on the rheological characteristics of a typical soft ice cream

Methodology: Ice creams mixes were formulated to contain 10% milk fat, 15% sugar, 11% MSNF and 0.3-0.5% selected hydrocolloids as stabilizers. Rheological properties of mixes were measured using the Bohlin rotational viscometer, which were subjected to a programmed shear rate logarithmically increasing from 14.2 to 501.7 s⁻¹.

Results and conclusion: The power law models well described the flow behavior of mixes with high correlation coefficient (r). The flow behavior index was in the range of 0.450-1.154, while consistency coefficient varied from 0.051 to 6.822 Pa.sⁿ. All mixes showed pseudoplastic behavior except the mix containing 0.3% PTS with a slightly dilatant characteristics. An increase in concentration was accompanied an increase in pseudoplasticity and consistency coefficient.