

( ) , ( )

\*

( // : // : )

( ) ( )

HMP

HMP

/

( / )

HMP

( / )%

HMP

HMP

:

(Tuinier, *et al.*,

pH

.2002)

(Lucy *et al.*, 1999)

( )

( )

( )

(Kiani

*et al.*, 2008)

( )

( )

HMP

(Hans Trompt *et al.*, 2004)

(Syrbe *et*

(HMP)

HMP *al.*, 1998)

Koksoy & Kilic .

(2003a)

aminifar@ut.ac.ir :

\*

( )

( ) ( ) % /  
( / ) %  
( )

(1997) Parker *et al.*

(Koksoy & Kilic, 2003a)

(Sedlmeyer *et al.*,

.2003)

HMP

(Master sizer 2000 version 5.22, Malvern  
Instrument *Ltd.*, Malvern, UK.)

HMP

(Bob & cup, MCR 300, Anton-  
Shear stress- Shear )

Paar, Ausria)

% / ( / ) %  
( / )  
(

(rate

Minitab version 15  
%

Excel 2007

MEFI (Middle East Food  
Lille

HMP  
Ingredients S.A.L)  
Skensved

Merck

pH (pH=6.7)  
( ) /

HMP

HMP

( / ) HMP

HMP

pH (Dekruif, 1998; Holt, 1982)

/ /

HMP pH

(RW 20 DZM JANKE & KUNEL,

Germany)  
%

(APV, Albert Lund, Denmark)

( )

HMP

(HMP

/ )

HMP (HMP )

/ / pH

% /

( )

HMP

(2003) Sedlmeyer *et al.* .

( )

HMP

%

% /

Koksoy

(2003a) & Kilic

Galhn & Rolin

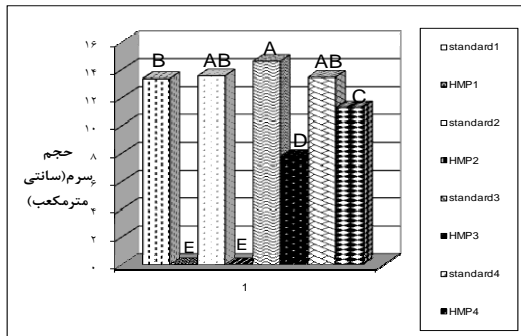
(1994)

pH

HMP

%

(1997) Parker *et al.*



(2008) Sedlmeyer *et al.* .(Galhn, 1982)

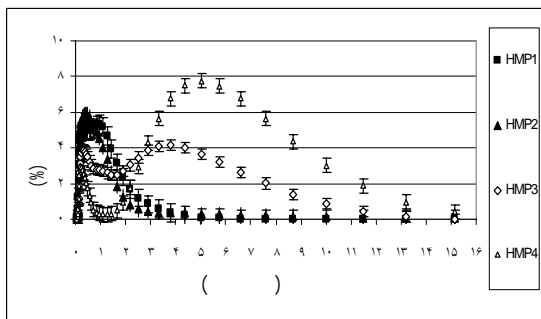
HMP

HMP

(P<0.05)

% / : ( ) % / : ( )  
% : ( ) % : ( )

( ) ( )



HMP . HMP

( )

( )

HMP

%

/

% / : ( ) .(P<0.05) HMP

%

% : ( ) % / : ( )

( )

% : ( )

( )

( )

%

pH

(Imeson *et al.*, 1977)

HMP

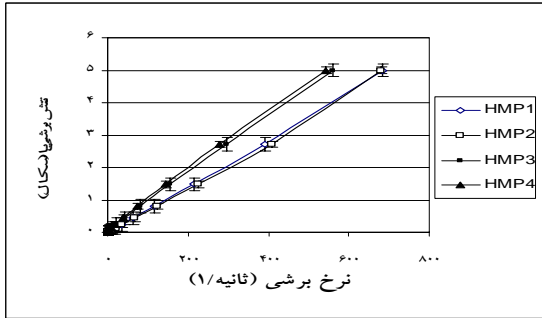
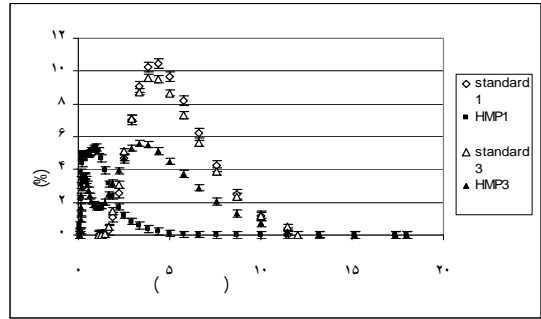
HMP

% /

(Galazka *et al.*, 1999)

HMP

HMP  
HMP  
%



% : ( ) % / : ( ) . (P<0.05) HMP

(Flow curve)

) ( )  
HMP (

HMP

% / : ( ) % / : ( ) . (P<0.05) HMP  
: ( ) % : ( )  
%

HMP

(Koksoy & Kilic, 2003b)

HMP

HMP

HMP

% / %

HMP

% / HMP

HMP

(Schkoda *et*

%

*al.*, 1999)

**REFERENCES**

- Institute of standards and industrial research of Iran, (2009). No. 2453, *Doogh – specifications and test method*, ICS: 67.100.99, (in Farsi).
- Institute of standards and industrial research of Iran, (2011). No. 384, *Milk– determination of fat*, ICS: 67.100.10, (in Farsi).
- Institute of standards and industrial research of Iran, (2008) No. 637, *Milk– determination of dry matter*, ICS: 67.1000.10, (in Farsi).
- Aminifar, M. (2007). *Effect of hydrocolloids and ionic strength on stability of fermented dairy drink*, M.Sc Thesis, University of Tehran, (In Farsi)
- De Kruif, C. G. (1998). Supra-aggregates of casein micelles as a prelude to coagulation. *Journal of Dairy Science*, 81, 3019–3028.
- Galazka V. G., Smith D., Ledward D. A. & Dickinson E. (1999). Complexes of bovine serum albumin with sulphated polysaccharides: Effects of pH, ionic strength, heat and high-pressure treatment. *Food Chemistry*, 64, 303–310.
- Glahn, P. E. (1982). Hydrocolloid stabilization of protein suspensions at low pH. *Progress in Food and Nutrition Science*, 6, 171–177.
- Glahn, P. E. & Rolin, C. (1994). Casein–pectin interaction in sour milk beverages. In: *Food Ingredients Europe Conference Proceedings*, 4–6 October, London, U. K.
- Hans Trompt R., Kruif C. G., Eijik M. & Rolin, C. (2004). On mechanism of stabilization of acidified milk drinks by pectin. *Journal of Food Hydrocolloid*, 18, 565-572.
- Holt, C. (1982). Structure and stability of the bovine casein micelle. In: C. B. Afinsen, J. D. E. D. Sall, F. K. Richards & D. S. Eisenberg (Eds.), *Advances in protein chemistry* (pp. 63–151). Academic Press, New York.
- Imeson A. P., Ledward D. A. & Mitchell J. R. (1977). On the nature of the interaction between some anionic polysaccharides and proteins (food texture). *Journal of the Science of Food and Agriculture*, 28, 661–668.
- Kiani, H., Mousavi, S. M. A. & Emam-Djomeh, Z. (2008). Rheological properties of Iranian yoghurt drink, *Doogh*. *International Journal of Dairy Science*, 3(2), 71-78.
- Koksoy, A. & Kilic, M. (2003a). Effects of water and salt level on rheological properties of *ayran*, a Turkish yoghurt drink. *International Dairy Journal*, 13, 835-839.
- Koksoy, A. & Kilic, M. (2003b). Use of hydrocolloids in textural stabilization of yoghurt drink, *ayran*. *Journal of Food Hydrocolloid*, 18, 593-600 .
- Leskauskaite D., Liutkevichius A. & Valantinaite A.(1998). Influence of the level of pectin on the process of protein stabilization in an acidified milk system. *Milchwissenschaft*, 53, 149–152.
- Lucey J. A., Tamehana M., Singh H. & Munro, P. A. (1999). Stability of model acid milk beverage: effect of pectin concentration, storage temperature and milk heat treatment. *Journal of Texture Studies*, 30, 305–318.
- Parker A., Boulenguer P. & Kravtchenko T. P. (1997). Effect of the addition of high methoxyl pectin on the rheology and colloidal stability of acid milk drinks. In: K. Nishinary & E. Doi (Eds.), *Food hydrocolloids: structures, properties and functions*. (pp. 45–62). Plenum Press, New York.
- Schkoda P., Hechler A. and Kessler H. G.(1999) Effect of minerals and pH on rheological properties and syneresis of milk-based acid gels. *International Dairy Journal*, 9, 269-274.
- Sedlmeyer F., Brack M., Rademacher B. & Kulozik U. (2003). Effect of protein composition and homogenization on the stability of acidified milk drinks. *International Dairy Journal*, 14, 331-336.
- Syrbe A., Bauer W. J. & Klostermeyer H. (1998). Polymer science concepts in dairy systems-an overview of milk protein and food hydrocolloid interaction. *International Dairy Journal*, 8, 179–193.
- Tuinier R., Rolin C. & de Kruif C. G. (2002). Electro sorption of pectin on to casein micelles. *Bio macromolecules*, 3, 623–638.