

() , ()

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(// : // :)

()% / % /

(DSC)

/

B

%

()

(Mandala et al.,

.2006)

()

(Gray & Bemiler, 2003)

(Gray &

Bemiler, 2003)

()

()

(Rosell .

et al., 2001; Guarda et al., 2004; Barcenas, 2004).

(Ghanbarzadeh, 2010)

(Rosell et al., 2001; Barcenas, 2004 &

ghanbarzadeh@tabrizu.ac.ir :

*

(B) (DDT)

(A)

.2007)

(E) (MTI)

(F)

(AACC54-10)

(Guarda et al., 2004)

(Guarda et al., 2004)

(R_o)

(Guarda et al., 2004)

(R_m)

(E)

R_o

R_o

(AACC 08-

(AACC 44-15A)

(AACC 02- pH

(AACC 08-01)

01)

(AACC 30-25)

52)

cm

(AACC56-81B)

(AACC32-

(

10)

D25-9000

1. Arrival time
2. Dough developing time
3. Mixing tolerance index
4. Degree of softening
5. Resistance to Extension
6. Extensibility
7. Ratio Number
8. Hunter Lab

(AACC54-10)

% /

% /

(D_{MAX})^ε

(

(b*)

(a*)

(L*)

$$(L^* = 96/18, a^* = -1/0.7, b^* = 1/99)$$

$$YI = \frac{142/18b^*}{L^*} \quad ()$$

$$WI = 100 - \sqrt{[(100 - L^*)^2 + a^{*2} + b^{*2}]} \quad ()$$

()

$$\Delta E = [(\Delta L^*)^2 + (\Delta a^*)^2 + (\Delta b^*)^2]^{1/2} \quad ()$$

(DSC)

DSC

(SETARAM)

()

°C

°C/min

°C

SPSS

Microsoft Office Excel 2003

H5KS

()

% /

/

()

/ /

(F_{MAX})^Δ

(

(Rosell et al., 2001; Shalini et al., 2007)

1. Lightness Index
2. Differential Scanning Calorimetry
3. Pan
4. Hounsfield
5. Maximum load or Rupture force

6. Maximum Deformation
7. Hedonic

()

(DDT)

FQN
(MIT)

	pH		δ		()		()	
()	()	()	()	()	()	()	()	()
()	()	()	(N:5.7)	()	()	()	()	()
/	/	/	/	/	/	/	/	/
—	—	/	/	—	—	/	/	/
—	—	/	/	—	/	—	/	/
—	—	/	/	—	—	/	/	/

OH

(2001) Rosell et al.

HPMC

()

HPMC

(DDT)

(AACC)

(ICC)

(2007) Shalini et al.

CMC HPMC

% /

DDT

1. International Association for Cereal Science & Technology

FQN	(FU)	(FU)	()	DDT ()	%	(FU)
			/	/	/	
				/	/	% /
			/		/	% /

FU

BU

FU

% /

% /

(L*)

() a* (Rojas et

al., 1999; Lazaridou et al., 2007)

(-) b*

b*

()

% /

(R₅₀)

R₅₀

(κ HPMC CMC) / /

(Shalini & Laxmi, 2007)

(2001) Rosell et al.
HPMC

(DSC)

R₅₀

(2005) Rosell et al. (E)

()

HPMC

DSC

()

()

°C

)T₀

) T_C () T_P (

() ΔT_r = T₀ - T_C (

(ΔH_r)

(Ozkoc et al., 2009)

R_m (BU)	E (mm)	R_{50} (BU)	(cm)
/			
/			% /
/			% /
/			% /
/			% /
/			% /
/			% /
/			% /

R_{20}

R_{20}, δ

(ΔE)	(WI)	(YI)	(b*)	(a*)	(L*)	
/ c	/ (/) ^c	/ (/) ^b	/ (/) ^c	/ (/) ^a	/ (/) ^c	δ
/ (/) ^b	/ (/) ^b	/ (/) ^a	/ (/) ^b	/ (/) ^b	/ (/) ^b	% /
/ (/) ^a	/ (/) ^a	/ (/) ^b	/ (/) ^a	/ (/) ^c	/ (/) ^a	% / δ

%

()

% / /

°C

Barcenas

HPMC

(2005) & Rosell

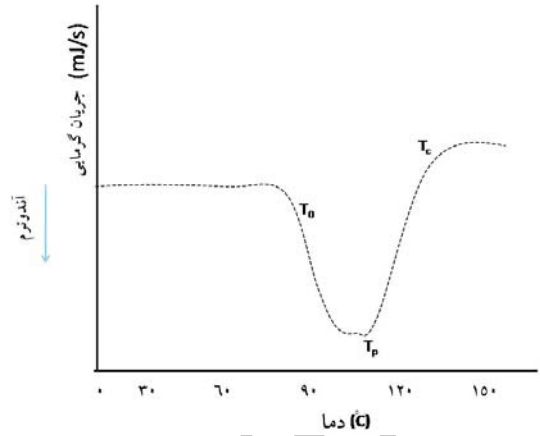
DSC

(°C) T_0	(°C) T_p	(°C) T_c	(°C) T_R	J/g		
/ (/) ^a	/ (/) ^b	/ (/) ^b	/ (/) ^b	/ (/) ^c	()	
/ (/) ^c	/ (/) ^c	/ (/) ^c	/ (/) ^c	/ (/) ^a	()	% /
/ (/) ^b	/ (/) ^a	/ (/) ^a	/ (/) ^a	/ (/) ^b	()	% /
/ (/) ^b	/ (/) ^b	/ (/) ^c	/ (/) ^c	/ (/) ^b	()	
/ (/) ^c	/ (/) ^a	/ (/) ^a	/ (/) ^a	/ (/) ^c	()	% /
/ (/) ^a	/ (/) ^b	/ (/) ^b	/ (/) ^b	/ (/) ^a	()	% /
/ (/) ^b	/ (/) ^a	/ (/) ^b	/ (/) ^b	/ (/) ^c	()	
/ (/) ^c	/ (/) ^b	/ (/) ^a	/ (/) ^a	/ (/) ^b	()	% /
/ (/) ^a	/ (/) ^a	/ (/) ^c	/ (/) ^c	/ (/) ^a	()	% /

%

F_{max}

D_{max}



OH

()

()

()

(Barcenas et al., 2006, 2007; Ribotta, 2007;
:Guarda et al., 2004; Collar et al., 2007)

(

(

% /

(

(

/

/

(mm)

(N)

(mm)

(N)

(mm)

(N)

/ b

/ a

/ a

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/ a

/ a

/ a

/ b

/ a

/ b

/ b

/ b

% /

/ c

/ c

/ a

/ c

/ c

/ b

% /

(Shalini, & Laxmi, 2007)

CMC

(Lazaridou et al., 2007)

(2004) Guarda et al.

(Demirkesen et al.,

.2010)

(HPMC

)

امتیازهای داده شده به تیمارها			نمونه ها
چهار روز پس از پخت	دو روز پس از پخت	یک روز پس از پخت	
۲/۶۶(۰/۴۹) ^b	۲/۸۳(۰/۷۱) ^a	۳/۱۶(۰/۳۸) ^b	شاهد
۳/۳۳(۰/۴۹) ^a	۳/۵(۰/۵۲) ^a	۳/۵(۰/۵۲) ^b	نمونه حاوی ۰/۱٪ زانتان
۳/۶۶(۰/۴۹) ^a	۳/۵(۰/۵۲) ^a	۴/۱۶(۰/۳۸) ^a	نمونه حاوی ۰/۵٪ زانتان

اعداد داخل پرانتز، انحراف معیار حاصل از شش تکرار می باشند که به همراه میانگین داده ها داده شده اند. نمونه های با حروف مختلف که در یک ستون واقع شده اند در سطح ۰/۵٪، اختلاف معنی داری دارند.

/ %

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