

High-Speed Stickiness Detector

가 (2)

7.

Sucrose($C_{12}H_{22}O_{11}$) (phloem sap) .
sucrose , trehalulose melezitose
가 .

< 1> HPLC 3

		Sugar contents†								
Area		In	Treh	Gluc	Fruc	Trehal	Suc	Mel	Mal	Total
		% of fiber weight								
1	Average	0.035	0.018	0.043	0.059	0.103	0.000	0.052	0.018	0.328
	Minimum	0.011	0.006	0.010	0.009	0.003	0.000	0.000	0.000	0.064
	Maximum	0.068	0.046	0.107	0.146	0.358	0.003	0.160	0.074	0.940
2	Average	0.061	0.003	0.073	0.107	0.073	0.011	0.088	0.003	0.419
	Minimum	0.042	0.000	0.034	0.010	0.001	0.000	0.017	0.001	0.114
	Maximum	0.074	0.010	0.110	0.187	0.236	0.037	0.201	0.009	0.794
3	Average	0.035	0.011	0.055	0.067	0.000	0.024	0.026	0.006	0.225
	Minimum	0.018	0.002	0.020	0.010	0.000	0.001	0.002	0.001	0.074
	Maximum	0.053	0.029	0.147	0.215	0.002	0.088	0.079	0.017	0.462

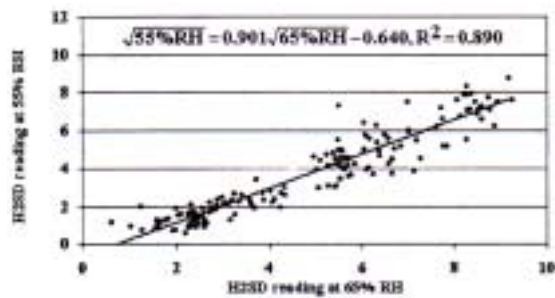
. < 1> % HPLC

. < 1>

. % < 2> 1

. (53) RH 55±2%, 23±1 RH
 65±2%, 21±1 H2SD
 < 1>. RH 55±2% H2SD RH
 65±2% 23.2% < 3>.

RH 65% RH 55% . RH 55±2%
 3



< 1> RH 65±2%, 21±1 RH 55±2%, 23±1 H2SD

Hequet Abidi(2002)

가 . < 2> inositol($C_6H_{12}O_6$),
 trehalose($C_{12}H_{22}O_{11}$), glucose($C_6H_{12}O_6$), fructose, trehalulose, sucrose, melezitose

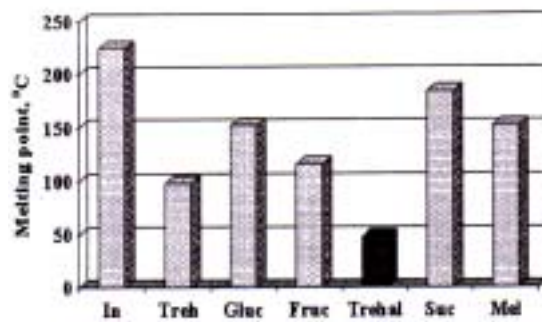
. trehalulose 48 가 . H2SD

53

가 trehalulose

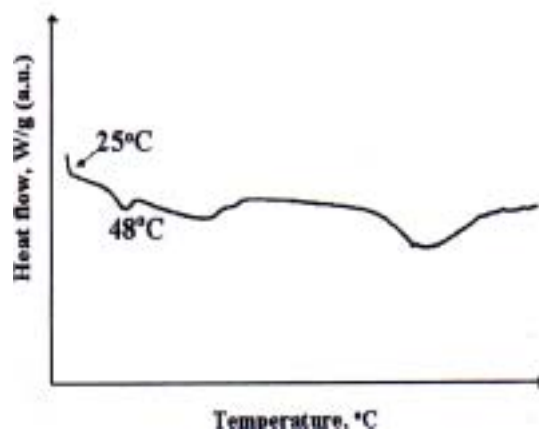
. Trehalulose differential scanning calorimetry(DSC,

) < 3> 25 .
 trehalulose 가 25
 , trehalulose
 “ 가 ” 가 가 . 가
 H2SD
 27 , 34 , 40 , 53 , 67
 RH 65±2%, 21±1



< 2>

In=inositol, Treh=trehalose, Gluc=glucose, Fruc=fructose, Trehal=trehalulose, Suc=sucrose, Mel=melezitose.



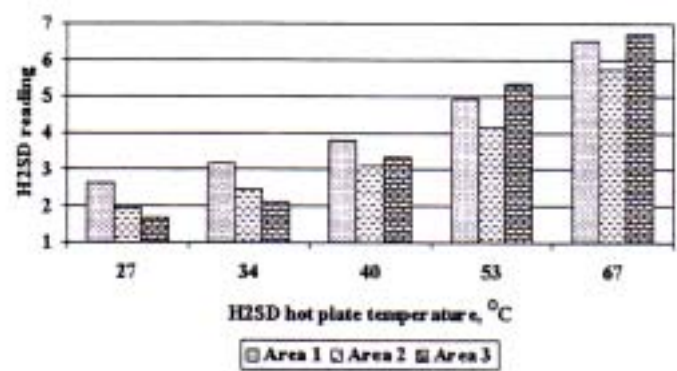
< 3> trehalulose (5 /min, 25~250)

< 4> 3 H2SD

가 가 .

가 .

53 H2SD

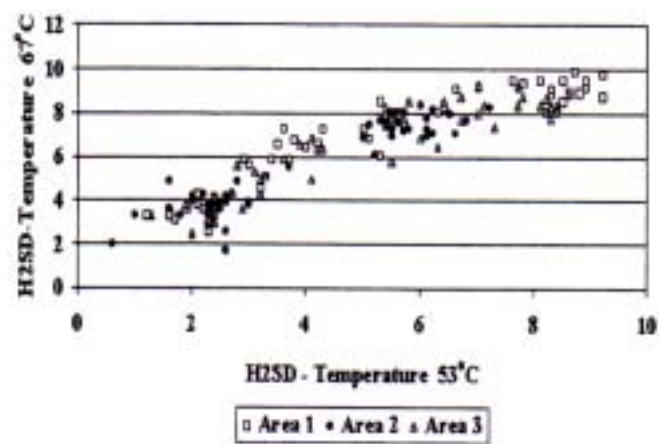


< 4> H2SD

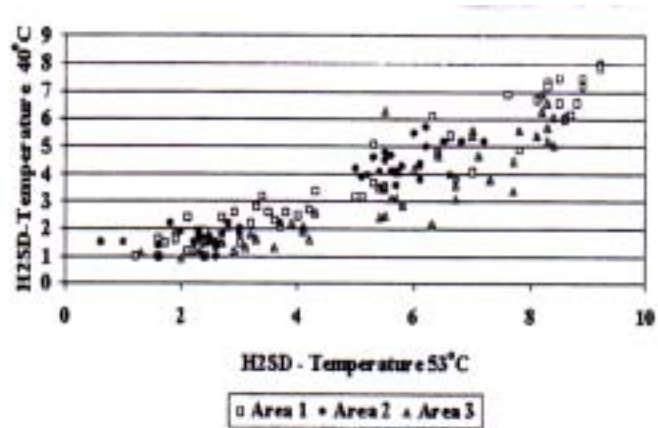
< 5~8> 1, 2, 3 53 H2SD

() 67 , 40 , 34 , 27

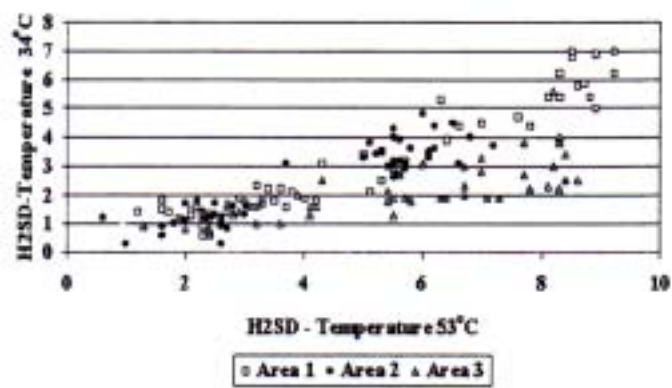
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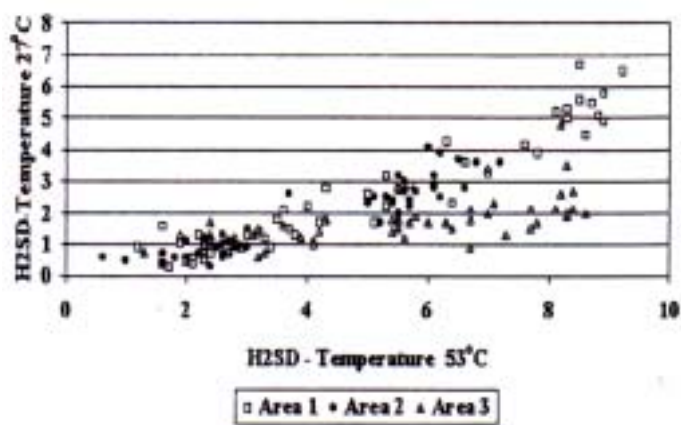
< 5> 67 53 H2SD



< 6> 40 53 H2SD



< 7> 34 53 H2SD



< 8> 67 53 H2SD

8. H2SD

67

3 ; < 5>

가

가

60

가

. < 4>

67

53

31.8%

< 4>

:

H2SD

가 67

		df†	F†	Probability	H2SD‡
Intercept		1	1898.67	0.0001	
Area		2	6.33	0.0020	
	1				5.735 a§
	2				4.950 b
	3				6.031 a
Temperature		1	35.86	0.0001	
	53°C				4.814 b
	67°C				6.345 a
Area	Temperature	2	0.09	0.9161	
1	53°C				4.923
	67°C				6.547
2	53°C				4.155
	67°C				5.745
3	53°C				5.340
	67°C				6.723
Error		294			

†df, ; F, , ‡

3

40

53

가 < 6>. < 5>

. 40

H2SD

53

29%

.

< 5>

:

H2SD

가 67

		df†	F†	Probability	H2SD‡
Intercept		1	1161.11	0.0001	
Area		2	3.98	0.0196	
	1				4.363 a§
	2				3.627 b
	3				4.342 a
Temperature		1	33.19	0.0001	
	40°C				3.417 b
	53°C				4.814 a
Area Temperature		2	1.59	0.2052	
1	53°C				4.923
	40°C				3.803
2	53°C				4.155
	40°C				3.099
3	53°C				5.340
	40°C				3.345
Error		294			

†df, ; F, ‡

53

34

H2SD

3

< 6>.

< 7>. 34

H2SD

53

: 1(가) 35.8%,

2(가) 40.9%, 3() 60.7% .

< 6> :

H2SD 가 34

		df†	F†	Probability	H2SD‡
Intercept		1	1108.53	0.0001	
Area		2	3.66	0.0268	
	1				4.042 a§
	2				3.305 b
	2				3.718 ab
Temperature		1	101.73	0.0001	
	34°C				2.569 b
	53°C				4.814 a
Area Temperature		2	5.24	0.0058	
1	53°C				4.923 a
	34°C				3.161 c
2	53°C				4.155 b
	34°C				2.456 cd
3	53°C				5.340 a
	34°C				2.096 d
Error		294			

†df, ; F, ‡

27

53 27 H2SD 3

< 7> ,

< 8>. 27 H2SD 53

: 1 46.4%, 2 54%, 3 68.7%.

melezitose가 trehalulose

가 .

< 7> :

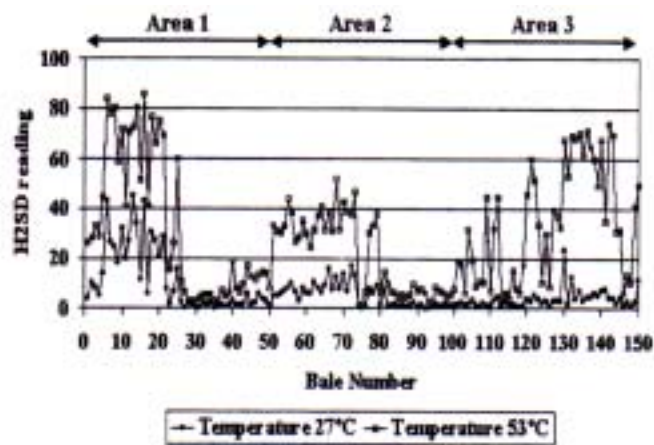
H2SD 가 27

		df†	F†	Probability	H2SD‡
Intercept					
		1	1008.96	0.0001	
Area					
		2	3.97	0.0199	
	1				3.780 a§
	2				3.036 b
	3				3.507 ab
Temperature					
		1	158.69	0.0001	
	27°C				2.075 b
	53°C				4.814 a
Area Temperature					
		2	4.71	0.0097	
1	53°C				4.923 a
	27°C				2.636 c
2	53°C				4.155 b
	27°C				1.918 cd
3	53°C				5.340 a
	27°C				1.675 d
Error		294			

†df, ; F, ‡

< 9> 3 27 53 H2SD

. 1 53
27 .
2 53 27
. 3 53
27 . H2SD
(가
가



< 9> 150 27 53 H2SD

< 10> 가 2가 H2SD

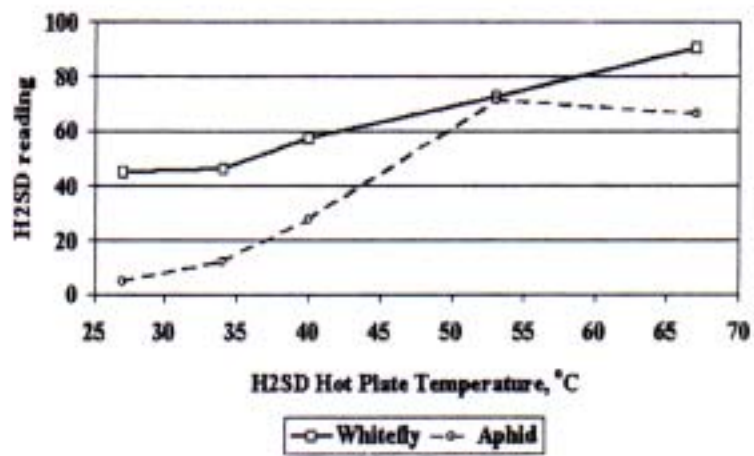
. 2가 53 (가

72.8, 71.7) . 53 27

2가 . 가

,

.



< 10> H2SD

9.

. (65±2% 55±2%) H2SD
23.2% .
53 () 67
H2SD
. 27
. 27 H2SD : 1
46.4%, 2 54%, 3 68.7%. (가
) H2SD .
H2SD
. 가
. H2SD
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