

(1) (1)

(1)

.2008-2007

()

Coscia

% 95-90

° 1-0

%

%

%

²

%

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Effect of Harvesting Date on Quality and Storage Ability of Coscia Pear Cultivar Fruit

Y.Sh. Al-Shoffe⁽¹⁾, M. Al-Safadi⁽¹⁾
and H. Zarefa⁽¹⁾

ABSTRACT

The effect of different harvesting dates on the quality and storage ability was studied for fruit of Coscia pear cultivar, which planted in the area of Daher Aljabal- Sweida during two successive seasons 2007-2008. Fruit were harvested in three different dates by week time intervals and stored for seven months at (0-1 C° and 90-95 % RH) in the storage units of apples and vine research department. The effect of harvesting dates of fruit on the physical and chemical properties was determined during period of 7 months in cold storage, by month time intervals. The second date of harvest affected by decreasing weight loss percentage, decay percentage, titratable acidity T. A, starch content and firmness, in addition to that total soluble Solids T. S. S, number of acidity PH, storage ability and shelf life were increased compared to the harvested fruit in the different dates.

Key words: Pear (Coscia cultivar), Storage ability, Harvesting dates, Quality properties, Shelf life.

⁽¹⁾ Horticultural Research. Apples and Vine research Department in Sweida. P.O.Box 461, Syria.

‘Bosc’ ‘Comice’
 ° 1-
 .(Sugar and Basile, 2009)

.(Itai and Tanahashi, 2008) (*Pyrus Pyrifolia* Nakai)

.(Franck *et al.*, 2007)

Coscia

(% 95-90 ° 1-0)

: -1

(*Pyrus Communis* var. Coscia)
 (*Pyrus syriaca*)
 (8/7 – 7/30 -7/23)

35

.(2008-2007)

104

%0.20

% 13.9

10

111

0

2

/ 6.5

/ 5.3

%0.15

%14.6

118

1

2

2 / 4.5

% 0.14

% 15.4

.(

2008-2007

) 2

) 24

24 %95-90 ° 1-0
 (5

(% 95-90 ° 1-0)
 ()

: -2

: -

:

$$100 \times \frac{\quad - \quad}{\quad} = \%$$

: -

:2 / -

(FT 327, Italy)

: -

.()

: -3

:% -

9]

) 4

36 [(

.(Schmidt+ Haensch, Germany)

:(100 /) -

0.1 20

: (A.O.A.C 1990)

$$100 \times \frac{\begin{matrix} \times \\ 0.067 \\ 20 \end{matrix}}{\begin{matrix} \times(\\ \times 200 \\ \times 20 \end{matrix}} \times 0.1 = \%$$

10 (6 0) . 6 0
1 25

.(RE 357 TX)

-()
.5 1 - - -
3 × 3 : -5
(2008-2007)
MSTATC
.% 5

: -1
:

(1)
%9.7
%15.3 %12.9
%8.2 (1)
%2.3
.%6.7

2 / 6.5 (2008-2007)
2 / 4.5 5.3

(1)

$^2 / 3.8$ $^2 / 3.9$
 $^2 / 3.2$

% (1)

(2008-2007) ($^2 /$) %
 (% 95-90-° 1±0)

8/7	7/30	7/23		
1.6 B	1.3 C	1.8 A*	1	%
2.9 B	2.5 C	3.4 A	2	
4.4 B	3.8 C	5.6 A	3	
6.2 B	4.9 C	9.3 A	4	
9.1 B	7.8 C	10.2 A	5	
10.4 B	9.3 C	12.5 A	6	
12.9 B	9.7 C	15.3 A	7	
0 B	0 B	1.1 A*	1	%
1.4 B	0 C	2.3 A	2	
2.1 B	0.7 C	2.9 A	3	
3.3 B	0.9 C	3.8 A	4	
3.8 B	1.2 C	4.7 A	5	
4.1 B	1.5 C	5.6 A	6	
6.7 B	2.3 C	8.2 A	7	
4.5 C	5.3 B	6.5 A*		(/)
4.3 C	5.2 B	6.1 A	1	
4.2 C	5.2 B	5.7 A	2	
4 C	4.9 B	5.4 A	3	
3.9 C	4.7 B	5.2 A	4	
3.7 C	4.5 B	4.9 A	5	
3.6 C	4.5 A	4.1 B	6	
3.2 B	3.9 A	3.8 A	7	

.0.05

*

: -

()
%13.2

(2)
%10.5
%3.9

0.3 0.9

%0.5

) %

(2)

(100 /)

(2008-2007)

(% 95-90 -° 1±0)

8/7	7/30	7/23		
0.5 B	0.3 C	0.9 A*		%
0.9B	0.7 C	1.2 A	1	
1.4 B	0.9 C	3.4 A	2	
1.9 B	1.3 C	4.1 A	3	
2.3 B	1.5 C	5.1 A	4	
2.5 B	1.7 C	5.5 A	5	
7.4 B	2.1 C	9.3 A	6	
10.5 B	3.9 C	13.2 A	7	
15.4 A	14.6 B	13.9 C*		%
15.7 A	14.9 B	13.9 C	1	
15.9 A	15.1 B	14.1 C	2	
16 A	15.4 B	14.3 C	3	
16.2 A	16.2 A	14.7 B	4	
16.2 B	16.6 A	14.8 C	5	
16.4 B	16.7 A	14.8 C	6	
16.6 A	16.7 A	14.9 B	7	
0.14 B	0.15 B	0.20 A*		%
0.14 B	0.15 B	0.18 A	1	
0.13 B	0.12 B	0.18 A	2	
0.13 B	0.13 B	0.16 A	3	
0.12 A	0.13 A	0.13 A	4	
0.11 B	0.11 B	0.13 A	5	
0.11 A	0.10 A	0.11 A	6	
0.10 A	0.08 B	0.11 A	7	

.0.05

*

: -2

:% -

(2) %15.7 14.9 13.9

%16.2

%14.7

%16.6 16.7

%14.9

(2) : -

%0.13 0.12

%0.18

%0.08

%0.10 0.11

(2008-2007) : -

2

6

(3)

6 5 4

:(PH) -

5.65

4.69

(3)

5.44 5.50 5.42

5.54 5.53

5.45

5.67

5.63

5.65

(6 -0) (3)
 () PH %
 (% 95-90 - ° 1±0)
 .(2008-2007)

8/7	7/30	7/23		
2 A	1 AB	0 B*		
2 A	2 A	1 A	1	
3 A	2 AB	1 B	2	
4 A	3 A	2 A	3	
5 A	4 A	3 A	4	
6 A	5 A	4 A	5	
6A	6 A	5 A	6	
6A	6A	5 A	7	
4.90 A	4.69 B	4.67 C*		
5.12 A	4.83 C	4.93B	1	
5.23 A	5.18 C	5.21 B	2	
5.33 C	5.43 A	5.37 B	3	
5.44 B	5.50 A	5.42 C	4	
5.54 A	5.53 A	5.45 B	5	
5.61 B	5.63 A	5.58 C	6	
5.67 A	5.65 B	5.63 C	7	
				()
4.5 B	4.7 A	3.1 C*		
4.6 B	4.8 A	2.8 C		
3.6 B	3.6 B	3.9 A		
4.7 A	4.1 B	3.1 C		
4.1 B	4.3 A	3 C		

.005

*

: -3

(3)

4.5 3.1 4.7

4.6 2.8 4.8

4.1 4.7

3.1

4.1 3 4.3

(1)

(Ferree and Warrington, 2003)

(Boonyakiat *et al.*, 1987)

(1)

(Syemour *et al.*, 1996; Wills *et al.*, 1998)
(1)

(Taira *et al.*, 1987; Seymour *et al.*, 1996)
(Tzoutzoutkou and Bouranis, 1997)
(2)

Belie *et al.*, (2000)
"Duine Conference"

Garriz *et al.*, (2008)
"Abbe Fetel"
(2)

Recasens *et al.*, (1989)
(3)

Garriz *et al.*,(2008)
. "Abbe Fetel"

(3)

- - - -) (

- -

14.6
² / 5.3 (100 /) 0.15 %
(2008-2007) 1
% 95-90 ° 1-0)
(Shelf life)

REFERENCES

- .(2007)
.132 -130 .
- Acuna, M. V. and E. J. Mitcham. (2008). Ripening of European pears: The chilling dilemma. *Postharvest Biology and Technology Journal*. Vol. 49 (2): 187-200.
- A.O.A.C. (1990). *Official Methods of Analysis 15th Edition*. Association of Official Analytical Chemists. Washington D.C., USA. Vol 2 : 918 (942.15).
- Akhavan, I. and R. E. Wrolstad. (1980). Variation of Sugars and Acids During Ripening of Pears and in the Production and Storage of Pear Concentrate. *Journal of Food Science*. Vol. 45 (3): 499-501.
- Bai, J., P. Wu, J. Manthey, K. Goodner and E. Baldwin. (2009). Effect of harvest maturity on quality of fresh-cut pear salad. *Postharvest Biology and Technology Journal*. Vol. 51 (2): 250-256.
- Belie, N. D., S. Schotte, J. Lammertyn, B. Nicolai and J. D. Baerdemaeker. (2000). PH-Postharvest technology: Firmness changes of pear fruit before and after harvest with the Acoustic impulse response Technique. *Journal of Agriculture Engineering Research*. Vol. 77(2): 183-191.
- Boonyakiat, D., P. M. Chen, R. A. Spotts and D. G. Richardson. (1987). Effect of harvest maturity on decay and post-harvest life of 'd'Anjou' pear. *Scientia Horticulturae Journal*. Vol. 31 (1-2): 131-139.
- Ferree D. C. and I. J. Warrington. (2003). *Apples botany, production and uses*. CABI publisher. P. 440.
- Franck, C., J. Lammertyn, Q. T. Ho, P. Verboven, B. Verlinden and B. M. Nicolai. (2007). Browning disorders in pear fruit. *Postharvest Biology and Technology Journal*. Vol. 43 (1): 1-13.
- Garriz, P. I., H. L. Alvarez and G. M. Colavita. (2008). Harvest date effects on fruit quality of 'Abate Fetel' pears. *Acta Hort. (ISHS)* 800:1019-1026.
- Itai, A. and T. Tanahashi. (2008). Inhibition of sucrose loss during cold storage in Japanese pear (*Pyrus Pyrifolia* Nakai) by 1-MCP. *Postharvest Biology and Technology Journal*. Vol. 48 (3): 355-363.
- Jackson J. E. (2003). *Biology of Apples and Pears*. Cambridge University Press. 317- 325.
- Predieri, S. and E. Gatti. (2009). Effect of cold storage and shelf-life on sensory quality and consumer acceptance of " Abate Fetel" Pears. *Postharvest Biology and Technology Journal*. Vol. 51 (3): 342-348.
- Recasens, D. I., J. Roig and J. Garaell. (1989). The Effect of harvest date on 'Flor De Invierno' pears in cold storage. *Acta Hort. (ISHS)* 256:213-222.
- Seymour, G. B., J. E. Tayllor and A. Toker. (1996). *Biochemistry of fruit ripening*. Chapman and Hall, UK, P. 151-187.
- Sugar, D and S. R. Basile. (2009). Low-temperature induction of ripening capacity in "Comice" and "Bosc" pears as influenced by fruit maturity. *Postharvest Biology and Technology Journal*. Vol. 51 (2): 278-280.

- Takahashi, M. (1959). Determination of Reducing Sugars by Means of Back Titration against Alkaline Copper Solution. Annual Meeting of the Chemical Society of Japan. Vol. 33(2): 178-181.
- Taira, S., Y. Kubo, A. Sagiura and T. Tomana. (1987). Comparative studies of Postharvest fruit quality and storage quality in japanese Persimmon in relation to different methods for removal of Astringency. J. Japan. Soc. Hort. Sci.,56:215-221(Abstract).
- Tzoutzoutkou, G. G. and D. C. Bouranis. (1997). Effect of prepreparates Application of Calcium on postharvest physiology of Apricot Fruit. J. plant Nutr., 20: 295-309.
- Wills, R., B. Mcgasson, D. Graham and D. Joyce. (1998). Postharvest: An introduction to the physiology and handling of fruit, vegetables and ornamentals. UNSW press Australia

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