JANNY MT

Flexible Installations of Controlled Atmosphere Units

Defining the best harvest date for apples

Using starch regression


Starch regression is the best indicator available for monitoring apple ripening. In particular, it is more accurate than the color code.

Given the great importance of an appropriate harvest stage for the successful storage of apples in a controlled atmosphere, it is essential to control the regression of starch to determine the perfect harvest date.


ESSENTIAL

With products available at the drugstore and a copy of CTIFL interpretation index

1. Preparing the iodine test solution	1% flaky iodine (10 gr / L of water) + 4% potassium iodide (40 gr / L of water)
2. Collecting and preparing a sample of apples	Take a sample of about twenty apples, from 4 or 5 trees, representative of the state of ripeness and the average load level of the orchard. Cut the fruit in half equatorially
3. Soaking of apples	Pour 2 to 3 mm thick solution into a flat-bottomed container. Soak one half of each apple in the sample for about 10 seconds
4. Drying	Allow to dry, face treated in the open air, between 5 and 10 minutes
5. Reading and analysis	Determine whether the observed regression is circular or radial. Note the reaction value achieved for each fruit in the sample, and calculate the average.

The test can be done directly at the orchard!

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CTIFL interpretation index

Starch regression on circular type apples
(Gala, Delicious rouge, Granny Smith…)

1C

2C

3C

4C

5C

Braeburn

6C

Gala

7C

8C

Fuji

9C

10C

Starch regression on radial type apples
(Elstar, Golden, Jonagold, Chantecler…)

1R

2R

3R

4R

Elstar

5R

Golden

6R

Chantecler

7R

8R

9R

10R

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Recommended starch regression for a harvest maturity adapted to storage in CA modules: examples

the successful preservation of apples, the maturity at harvest must be adapted to the objective of long storage. In this table, you wil regression stage of starch recommended for a good storage in controlled atmosphere modules.

Varieties	Starch regression adapted to CA storage	Reminder of the storage modalities in Janny MT CA modules		
		Opened membranes	Captacal *	Storage time (months)
Ariane	**7 to 8**	4		6 to 7
Belchard / Chantecler	**5 to 6**	4		6 to 7
Belle de Boskoop	**5 to 6**	4	O	6
Braeburn	**4 to 5**	4	O	6
Cameo	**4 to 5**	4		7
Corail	**6 to 7**	4		6 to 7
Cox's orange pippin	**3 to 4**	4	O	5
Elstar	**3 to 4**	5		5 to 6
Fuji	**7 to 8**	4	O	7 to 8
Gala	**5 to 6**	5		5 to 6
Golden Delicious	**4 to 5**	4		8
Granny Smith	**3 to 4**	4	O	6 to 7
Honey Crunch	**5 to 6**	4	O	6 to 7
Idared	**3 to 4**	4		7 to 8
Jazz	**4 to 5**	4		6 to 7
Jonagold	**4 to 5**	4		7
Mairac	**4 to 5**	5	O	5 to 6
Melrose	**3 to 4**	4		5 to 7
Pink Lady	**4 to 5**	4	O	6
Pinova	**4 to 5**	4		6 to 7
Reinette du Canada	**3 to 4**	4		7
Tentation	**5 to 6**	4		5 to 6
Topaz	**4 to 5**	5		6 to 7

* Captacal: Hydrated lime $Ca(OH)_2$ conditioned in 10 Kg bags. Add one bag per module for CO_2-sensitive varieties in storage, to ensure storage at less than 1% CO_2.

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