

# Optimal Fresh

The fruit, vegetable and fresh produce expert system



Detailed Report

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**Crop** globe artichoke

**Maturity stage** General

**Category** Vegetable

**Plant Part** Flower and leaves

**Usage** Cooked, Processed/ Canned

**Botanical name** *Cynara cardunculus*

**Botanical family** Asteraceae (Compositae)



Picture source: Corel, 1998

## Alternate names include

(C) yang ji	(G) Artischocke	(J-R) cho senazemi
(E) artichoke	(G) Gemüseartischocke	(S) alcachofa
(E) globe artichoke	(J-K) 10AA, 08	(S) cardo
(F) artichaut	(J-K) A. 0>] 1; ^P	
(F) cardon d'Espagne	(J-R) achicyo ku	

## Refrigerated Container/Coolroom Recommendations

**Optimum product storage temperature**

0.0 to 1.0°C

**Temperature set point**

0.0°C

Add a margin for uncertainty in equipment performance if necessary.  
For return air control set point add 1°C to delivery set point.

**Ventilation (air exchange) settings for containers:**

6 m (20') = 15 m<sup>3</sup>/h = 10 cfm

12 m (40') = 30 m<sup>3</sup>/h = 20 cfm

**Acceptable product temperature at loading into container**

0.0 to 5.0°C

## Key Properties

Storage time (days)†	Humidity (% RH)	Freezing point (°C)	Storage time at ambient (~20°C)	Ventilation rate
21 - 28	95 - 100	-1.2	2 - 3	Low

† at optimum storage temperature

Use perforated poly-bags

## Other Properties

Ref	Maturity stage	Air exchange *	Freezing Point (°C)	Ethylene production **	Ethylene sensitivity	Ice compatibility	Water loss ***	% Water content	Bruising susceptibility
1	General	Low	-1.2	Very Low	Low	Yes	M	83.7	Low

\* Air exchange rates: Nil = 0%; Very low = 25%; Low = 50%; Medium = 100%; High = 200%; Very high = 400% fresh air/hour.

\*\* Ethylene production rates at 20°C: Nil = 0 nM; Very low = <4 nM; Low = 4 - 40 nM; Medium = 40 - 400 nM; High = 400 - 4000 nM; Very high =>4000 nM ethylene/kg/hour.

\*\*\* Where % weight loss/week is given this is converted as: Low <= 1%; Medium = 1.1 - 3.4%; High = >3.5%

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## Controlled Atmosphere

Ref	Maturity stage	% O <sub>2</sub>		% CO <sub>2</sub>		Temp°C		Benefit of controlled atmosphere
		min	max	min	max	min	max	
1	General	2	3	2	3	0	1	None, (+0 days)

### Reference notes

1 High humidity better than CA

## Respiration\* and Heat Transfer

Ref	Maturity stage	0°C		5°C		10°C		15°C		20°C		25°C		Specific heat kJ/kg/EC **
		min	max	min	max	min	max	min	max	min	max	min	max	
1	General	44	132	76	176	161	288	223	426	397	685	426	882	3.64

\* Respiration values given are in Watts per tonne. 1 W/t = 20.4 kCal/t/d = 82.1 Btu/tn./d = 73.3 Btu/2000 lbs/d = 0.167 mL CO<sub>2</sub>/kg/h = 7.0 umol CO<sub>2</sub>/kg/h = 0.308 mg CO<sub>2</sub>/kg/h

\*\* Specific heat (kJ/kg/°C) = 0.0335 x % water content + 0.8374; Specific heat in Btu/lb/°F = 0.08 x % water content + 0.2

## Compatibility in Mixed Storage

### Temperature compatibility group

0	7	13	20
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### Humidity compatibility group

Dry 60-80%	Moderate 80-90%	High 90-95%	Very high 95-100%
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Not compatible with crops that:

Odours will be absorbed by:

Absorbs odours from:

## Seasonal Availability

Ref	Country	Region (where given)	Start Season	End Season	Start Peak	End Peak
1	USA		January	December	March	May
1	Australia		June	December	September	November

## References for globe artichoke

Values quoted in Detailed Report are taken from a compilation of the best set of figures from all references. This best set of figures is always referred to as Reference 1.

See Reference Report for full listing of all values, original references and alternate names.