

Globe Artichoke

Recommendations for Maintaining Postharvest Quality

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Maturity Indices

The edible bud, composed of a cone of bracts, is harvested at an immature stage and selected for size and compactness. Overdeveloped buds have an open or spreading structure; the bracts have a brownish cast and are tough and stringy; the centers have a fuzzy, pink to purple appearance.

Quality Indices

Quality indices are compact and well-formed buds, typical green color, a smooth and uniform stem-cut, freedom from insect damage or handling damage and defects. Artichoke buds should feel heavy for their size. Stems are generally cut 2.5 to 3.8 cm (1 to 1.5 in) below the base.

Optimum Temperature and Relative Humidity

0°C (32°F) with >95% RH

Hydrocooling, forced-air cooling, and package-icing are common methods of postharvest cooling of artichokes.

Storage potential of artichoke is generally less than 21 days as visual and sensory quality deteriorate rapidly.

Rates of Respiration

Temperature	ml CO ₂ / kg·hr
0°C (32°F)	8 - 22
5°C (41°F)	13 - 30
10°C (50°F)	22 - 49
15°C (59°F)	38 - 72
20°C (68°F)	67 - 126

§ To calculate heat production, multiply ml CO₂ / kg·hr by 440 to get BTU/ton/day or by 122 to get kcal/metric ton · day.

Rates of Ethylene Production

Very low ; < 0.1 μl / kg·hr at 20°C (68°F)

Responses to Ethylene

Artichokes have a low sensitivity to exogenous ethylene and therefore it is not considered a factor in postharvest handling and distribution.

Responses to CA

Controlled or modified atmospheres offer moderate to little benefit to sustaining artichoke quality. Conditions of 2-3% O₂ and 3-5% CO₂ delay discoloration of bracts and the onset of decay by a few days at temperatures around 5°C (41°F). Atmospheres below 2% O₂ may result in internal blackening of artichokes.

Physiological Disorders

Freezing Injury. Freezing injury will be initiated at - 1.2°C (29.9°F). Symptoms of light freezing injury are blistering of the cuticle and a bronzing of the outer bracts. This may occur in the field with winter harvested buds and is used in marketing as an index of high quality. More severe freeze injury results in watersoaked bracts and the heart becoming brown to black and gelatinous in appearance over time.

Physical Injury

Bruising and compression injury. Very common when attention to careful harvest and handling practices are not followed.

Pathological Disorders

Grey Mold (*Botrytis cinerea*) and **Bacterial Soft Rot** (*Erwinia carotovora*) may be a problem in storage and distribution if optimum temperature conditions are not met. Opportunistic fungi (such as *Fusarium* spp.) may develop on cut stems or bracts with prolonged low temperature storage.