



CALIFORNIA WALNUTS

# Best Practices for Handling & Storage



Walnut quality and shelf life can be influenced by three general factors:



**Product Characteristics and Packaging**



**The environment during distribution and storage**



**Transportation**



## From Orchard to the Customer

The walnut harvest season in California typically runs from late August through early November. Once the outer green hull of the walnut begins to dry and split, the nuts are ready for harvest.

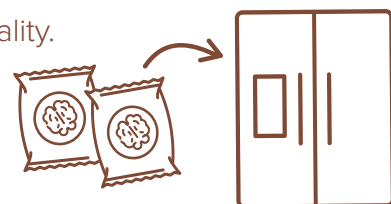
Thanks to their sturdy shells and leathery outer husk, walnuts are exceptionally well protected from pests and other quality issues. If stored and handled properly, they can even be consumed at least one year after harvest, although they're generally consumed much earlier.



## Preventing Oxidation/Rancidity

- ▶ **Cold storage** can minimize primary walnut quality issues such as rancidity.
- ▶ **To prevent rancidity** and extend finished product shelf life, the product should be packaged in materials that do not allow light or air to come into contact with the product.
- ▶ **Nitrogen flushing** (replacing the oxygen with food-grade nitrogen) can also extend the shelf life of unopened sealed product.

- ▶ **Resealable packaging** is ideal for snack mixes and other retail packs, which may be opened and closed several times by the consumer. Packaging should include "Refrigerate after opening" for the consumer to maintain optimal quality.



## Storage Recommendations | Keep walnuts refrigerated year-round.



### Cold storage

can minimize primary walnut quality deterioration problems such as food safety risks, lipid oxidation (rancidification) and kernel phenolic oxidation (darkening).



### Protect

from insects and pests. Store apart from other at-risk food items.



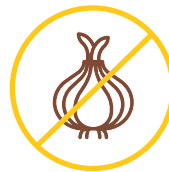
### Rotate stock

to optimize shelf life.



### Walnut moisture

kernels should be maintained at 4.3% or less.



### Avoid exposure

to strong odors as walnuts can absorb odors of other materials if exposed for prolonged periods.

10°C

50°F

0-5°C

32-41°F



SHORT TERM

LONG TERM

### Store under cool and dry conditions

(<10°C/50°F and <65% relative humidity).

For longer-term storage, up to six months: refrigerate at 0°C (32°F) to 5°C (41°F) and <65% relative humidity.

## Transportation Logistics

Walnuts should be transported in refrigerated trucks and containers from the handler to the retail warehouse June through September or any high temperature time periods for product shipments.

- **Maintain walnut inventories** for just-in-time or velocity-timed sales to minimize warehouse time.
- **At the point-of-sale**, walnuts are shelf stable and should be merchandised on-shelf in a cool, dry area.



## Contact Information

For more information and questions related to walnut storage and handling, contact the California Walnut Board & Commission at

✉ [resources@walnuts.org](mailto:resources@walnuts.org)

Promotional support at retail is available. To customize your California Walnuts promotion, contact the California Walnut Board & Commission at

✉ [retail@walnuts.org](mailto:retail@walnuts.org)