



AUSTRALIAN
MACADAMIAS



Macadamia kernel

Handling and storage guide

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Australian macadamias are globally recognised as a delicious source of plant protein that adds a unique flavour and texture to dishes and food products, while offering a host of health benefits.

As the richest source of healthy monounsaturated fats of all tree nuts, macadamias are known for their “good fats”, but this high fat content means there are some special considerations when it comes to storage and handling. Macadamia kernel have the potential for a long shelf life if handled and stored correctly. The two most influential factors in achieving this are preventing moisture uptake and oxygen exposure.

BULK PACKING

To maximise shelf life, exposure to moisture and oxygen must be effectively controlled and appropriate packaging used.

Packaging

Packaging varies greatly in its barrier properties to oxygen and water. To achieve the recommended shelf life of 24 months bulk kernel should be packed under vacuum using a high barrier film containing foil.

Storage

To ensure macadamia kernel retain their crunchy texture, great flavour, and optimum shelf life, they should be stored in their original unopened package in a cool, dry environment.

Once exposed to air, kernel can rapidly absorb moisture which causes loss of its typical crunchy texture, and reduced eating quality and shelf life. If a carton is opened and only partially used, simply reseal the remaining product or place into a sealed plastic container and store between 5-10°C.

- + Control moisture + oxygen
- + Pack under vacuum using high barrier film containing foil
- + Store unopened packs in cool, dry environment
- + Reseal partially used product or place in sealed plastic container and store between 5-10°C

RETAIL PACKING

Retail packs are generally not packed under a vacuum so the barrier properties will heavily influence the shelf life of the final product. Gas flush to reduce the oxygen level when retail packing.

There are many types of retail packaging materials available. The higher the barrier to oxygen and water, the longer the best before date can be.

Recommended material for retail packing includes high barrier flexible packaging and hermetically sealed metal cans or glass jars.

- + Choose packaging with a high barrier to oxygen and water
- + Materials that include high barrier flexible packaging, hermetically sealed metal cans and glass jars are good options

BULK HOPPERS

When selling macadamia kernel through bulk hoppers, it is more challenging to maintain the product's freshness and crunch as there is no barrier to oxygen or moisture. However, by adopting some simple practices, the product's freshness can be maintained:

- Ensure the hopper has a lift lid that closes once the consumer has taken their required volume of macadamias
- Ensure the scoop is attached to the bin to prevent it falling on the floor
- Keep only a small amount of product in the hopper at any given time to ensure it will be turned over quickly – ideally every 2-3 days
- When refilling the hopper, remove all remaining kernel first and set aside, then remove and discard any dust. Place the fresh kernel on the bottom of the clean hopper before replacing the older product on top.

- + Ensure lid closes
- + Keep limited volume
- + When refilling, place fresh kernel on bottom and older product on top

KERNEL ROASTING

Generally the best roasting results are achieved by roasting at a lower temperature for a longer time to improve uniformity of colour.

Before roasting a full batch of kernel, it is recommended a small test batch be trialed to determine whether the roasting parameters need adjustment. This could involve changes to the roasting time and/or temperature.

A suggested starting point for a continuous nut roaster such as a Proctor or Aeroglide is 125°C for approx. 11 minutes. If an adequate level of roast is not achieved, the time and/or temperature can be increased.

The consumer is typically looking for a final roasted product that has an even cream to light brown colour, contains no excessively dark kernel and has a pleasant roasted flavour that is not over-done.

- + Roast at a lower temperature for a longer time
- + Test a small batch to determine optimal parameters
- + Aim for even creamy colour

BLENDING MACADAMIA KERNEL WITH OTHER PRODUCTS



SNACK MIXES AND CEREAL PRODUCTS

With macadamia kernel having a moisture content of up to 1.8%, they tend to be lower in moisture compared to other ingredients. This can cause the moisture content of the macadamia to gradually rise after packing as the moisture equilibrates over time between all ingredients. This can affect the shelf-life of the overall product. Therefore, the shelf life of the final product will often be determined by that of the ingredient with the shortest shelf-life in the formulation.

- + When blending macadamia kernel in food products, consideration must be given to which other ingredients the kernel is being blended with



ICE CREAM

Macadamia kernel is often coated to reduce its moisture uptake when included in ice cream formulations. A coating such as honey can slow the uptake of moisture. Oil roasting can also provide a protective layer that will reduce moisture uptake.



CHOCOLATE COATED

It is common for macadamia kernel to be oil roasted before being chocolate coated. The oil roasting gives the kernel a nice flavour that complements the chocolate, and also provides a protective layer of oil around the kernel which reduces moisture transfer from the chocolate. Chocolate coated macadamias are best stored in a dry and cool storeroom between 18-25°C and at a relative humidity of less than 60%. Storing it within this optimal temperature range ensures the chocolate won't melt or soften as it would in higher temperatures, and also prevents the formation of fat blooms which can occur below 15°C affecting the final product's external appearance.

Need more information

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