

Harvest to Processing Guidelines

For supply of good quality NIS

Based on the NZMS's MacAcc – Orchard Quality Control Standards/Aotea Macadamia supplier guidelines

- Ensure maturity of nuts before picking. This should be by testing. Be aware that different varieties mature at different times. Further, Australian experience shows that insect damaged nuts tend to fall early and float separation is common in Australia on orchards.
- Do not pick prior to the last week in July for most varieties and because in New Zealand many processors are not ready until then to accept nuts for drying. Check with your processor.
- Ensure orchard floor is clean before any nuts are picked from the ground. Herbaceous growth must be short and stock must have been removed from the harvest area 2 months prior to collecting nuts. Increasing food safety legislation could impact on ground collection procedures, as there is always the possibility of contamination from animal and bird droppings.
- Early fall nuts recovered from the ground are probably either immature or damaged and therefore will contain a much higher percentage of unusable kernel. Further, do not include nuts with blackened husks; be aware of the possibility of collecting last season's nuts off the orchard floor. Clean green nut in husk only.
- If picking direct from the tree do not collect dropped nuts unless the orchard floor is clean. It is good practice to put down netting or some form of ground cover for nuts to fall onto.
- Use picking aprons where available and well aerated bins to put the harvest into before husking. Alternatively, tarpaulin ground covers can be used to ensure clean nuts.
Try to keep the nuts dry.

- Husking must be done very soon after harvest – Best practice is immediately. If this cannot be done nuts should be spread out on a dry floor no more than 1 nut deep, out of direct sunlight. Do not stack nuts or leave in closed containers. This is especially important in New Zealand with our wet winters and hence high humidity.

Mould starts to form very soon on stacked nuts and this will completely destroy the quality of your product. In any event, dehusking should be done as soon as practicable.

- After the husks are removed the nuts should be dried down from around 22% to 27% initially to around 10% to 12% moisture content before delivery to the processor. Once again this should be out of direct sunlight and preferably under continuous mechanical aeration.

There are now commercial dryers available in New Zealand for on orchard drying of macadamias or one can be made by a competent DIY grower. However, if this is not available, hanging in onion bags in a dry area with reasonable air flow is essential.

Every effort should be made to store nuts below 25 degrees Celsius or lower. The drier the airflow and the lower the temperature the better. Storage at high temperatures can quickly lead to changes in oil composition and the development of rancidity.

A visual inspection of the nuts should be made before delivery to the processor; small nuts should be sieved out, under 19 mm, as they are often immature. Visual inspection of nuts is good practice; shells with indents, staining and other obvious signs of damage should be discarded. This will increase crackout percentage and thus improve the return from this off orchard expense.

- Delivery should be arranged by the grower and nuts should be kept dry from orchard to processors drying facility.
- For hand delivery NIS should be in clean mesh bags of not more than 25kgs each, or in clean aerated bins may be used, again no more than 25kgs per bin.
- Ensure that there is no possibility of cross contamination of the nuts from other materials e.g. waste matter in trailer.
Finally, nuts from seedling trees often have a high shell to kernel ratio and therefore a very low crackout.

Good quality grafted trees are essential.