

INTRODUCTION

Planning, preparation, maintenance, flexibility and a clear understanding of what growers want to achieve are crucial ingredients of a successful harvesting strategy.

Recent research by the NSW DPI and AMS has uncovered concerning levels of losses comparing hand harvesting to mechanical harvesting. A wide range of orchards were involved in the trials with the variances including; full grass on the floor, a combination of mulch and grass, no exposed roots, substantial exposed roots, young trees and old mature trees.

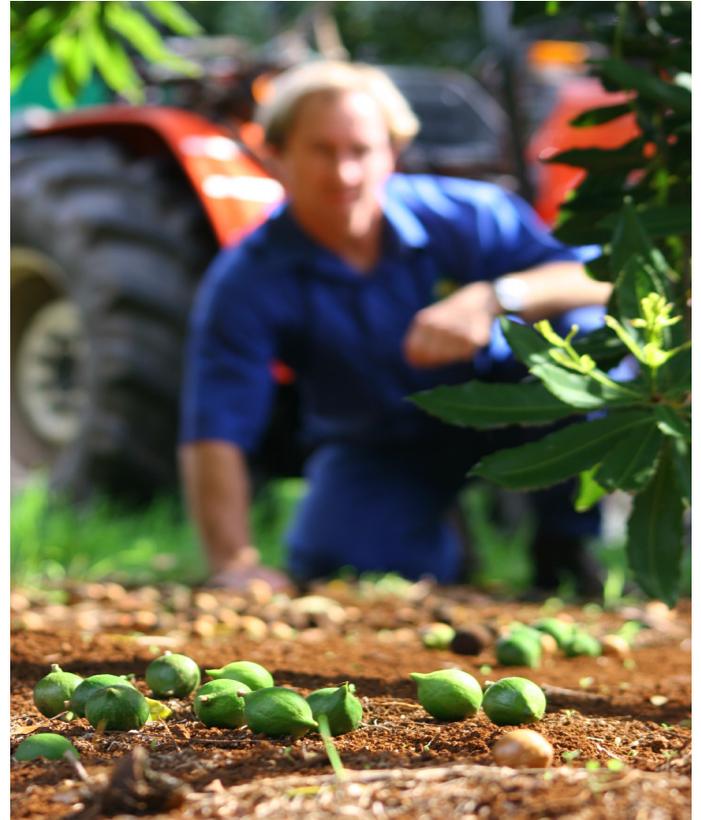
With data still being analysed we can modestly estimate the difference between hand harvesting and mechanical harvesting yields were approximately 10% representing a concerning level of loss – but also a substantial opportunity!

What would an extra 10% of your crop represent? Working on the industry average of 3t NIS/ha and a conservative seasonal price of \$5.00/kg it equates to over \$1,500 per hectare!

It is important to develop a proactive and flexible harvesting strategy that suits you and; your orchard, your machinery, your business, your goals, your contractors and your processor/s.

Key statements

- Improperly set up machinery and poorly prepared orchards can result in significant yield losses, with trials indicating losses can vary from 10-40%.
- Your harvest strategy should focus on your entire crop across the harvest season, not individual rounds of harvesting.
- Your machinery should be set up for the current season's conditions (nut size, orchard floor, volume of nuts).
- The logistics of your harvest system should be simple.
- Your harvest system should include multiple buffers throughout the system in the event of a machinery breakdown or extreme weather event.



Harvest strategy checklist

To assist growers navigate through the process of developing their own harvest strategy the AMS has, with extensive input from growers, processors and consultants, developed a range of base line self-assessment questions.

Quiz yourself on the questions below and over the page, to test how confident you are in your harvest strategy and if you can identify any areas for improvement.

Your weather

- Do you have regular access to an up-to-date 48hr, 7 day and 28 day forecast for your region?
- Is your harvest strategy complimentary to this forecast? (It is better to adjust your harvest strategy to suit weather conditions, than to hope the weather adjusts to suit your harvest strategy).
- Do you understand historical weather patterns and trends for your local region? (And is your harvest strategy complimentary or contradictory to these patterns and trends?)

Your orchard

- Have you been monitoring maturity of nuts from the orchard floor?
- Have you completed your pre harvest clean up prior to nut maturity?
- Do you have any barriers to machinery access? (eg. low hanging branches, excess organic matter in the interrow, insufficient turning room).
 - *This applies to all machinery entering your orchard, whether it is your machine or a contractor machine.*
- Do you understand the likely drop patterns of your varieties and blocks?
- Can you quickly and efficiently transport your harvested nuts within and across your orchard? (Or do your access roads and/or your on-farm transport systems cause a bottleneck and slow down harvesting?)

Your management

- Do you understand the amount of crop you have grown this year? (Do you measure crop from data trees to ascertain grown crop?)
- Do you have a strategy for the upcoming harvest season?
- Does your harvest strategy suit your orchard?
- Does your harvest strategy suit your orchard business goals?
- Do you have a proactive mindset and plan to take responsibility for the upcoming harvest season in the face of varying weather conditions?
- Is your strategy flexible and capable of absorbing varying weather conditions?
- Do you have a simple logistic management system?
- Is your harvest strategy complimentary to your processor and transport company?
- Does your harvest strategy include any contractors?
- Do those contractors understand your harvest strategy?
- Do you know where your major losses are in your harvesting system?
- Can you clearly and easily describe your harvesting strategy to others?

Your machinery

- Does your machinery match and meet your orchard layout/age/design?
- Does your machinery match and meet your business and personal goals?
- Do you have definite harvesting capacity? (Do you have your own machine or have you confirmed contractors?)

- Do you have 'fall back' harvesting capacity? (Do you have your own spare machine or access to contractors?)
- Is your harvester and dehusker set up for this season's nut size?
- Do you have any bent, worn or broken finger wheels?
- If you have grass on the orchard floor and/or leaf drop during harvest, do you have mowing capacity to match your harvesting capacity? (Grower suggestion "In ideal conditions harvest only as much as you can mow the same day.")
- Does your harvesting capacity match your dehusking capacity?
- Does your dehusking capacity match your shed and storage capacity?
- Does your shed and storage capacity match your planned processor consignments?
- Do you know where the bottlenecks are in your harvest system?
- Do you have at least 2 options to manage those identified bottlenecks if needed?
- Do you have a system to manage excess foreign material? (eg. sticks and rocks)
- Do you have a buffer in your system for when a machine breaks?

Further information:

Please read this document in conjunction with the AMS Information Sheet 'Harvest Strategy Quick Tips & Grower Experiences'. You can also visit the AMS website australian-macadamias.org/industry for links to a range of macSmart and NSW DPI harvesting focussed video case studies showing the modifications that growers have made to their harvesters and harvesting systems.

For more information on this topic, contact the Macadamia Industry Productivity Development Manager Robbie Commens and/or your harvest consultant.

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