



THE

KIWIFRUIT

HARVESTING

GUIDE

FOR GROWERS



IT'S IMPORTANT THAT GOOD PRACTICE IS FOLLOWED THROUGHOUT THE HARVEST SEASON TO ENSURE THAT WORKER SAFETY IS NOT COMPROMISED, AND FRUIT QUALITY IS OPTIMISED.

ABOUT THE KIWIFRUIT HARVESTING GUIDE

The kiwifruit harvest is a key time of year when all the hard work that you have put into growing a high quality crop is handed over to teams of pickers and post-harvest workers who then swing into action to get crops picked and packed.

Despite the pressure, it's important that good practice is followed throughout the harvest season to ensure that worker safety is not compromised, and fruit quality is optimised. As the orchard owner, you have a key responsibility for health and safety as well as ensuring the fruit is picked well during harvest.

This guide draws on the wisdom of growers, harvest contractors and post-harvest representatives and brings together the key practices for growers to achieve high quality fruit during harvest. This guide focuses on harvesting practices and not the decision to harvest.

How to use the Harvesting Guide:

- ✓ The guide is structured according to stages in preparing for and conducting kiwifruit harvesting.
- ✓ The guide offers suggestions of good practices. It is not meant to replace practical experience or represent the only source of information on the kiwifruit harvest.
- ✓ Each section contains QR codes with links to other resources on specific topics.

Everyone involved in the harvest has a role to play in ensuring fruit is handled appropriately and fruit quality is optimised.



The last few years have been a reminder that we need to do everything we can to deliver a great tasting and great quality crop to our customers and consumers around the world. With larger crop volumes expected in coming seasons, it becomes increasingly important to start the season strongly and maintain a smooth, consistent flow of fruit through harvest so we can maximise early season sales rates and our onshore packhouse capacity. To ensure we have sustainable returns for our industry, we must provide high quality fruit to customers every season.

Both growers and harvest contractors have a critical role to play in this. This harvesting guide is intended as a valuable resource for growers and harvest contractors to learn about and apply good practices to consistently achieve a high quality fruit harvest. Zespri is delighted to be a co-creator of this industry first guide.

Jason Te Brake, COO, Zespri

New Zealand kiwifruit growers produce the best kiwifruit in the world. The best kiwifruit doesn't just come in the form of the final product consumers see, but also in terms of the systems and processes which lead to the production of our kiwifruit. As our industry grows, so does the need for industry stakeholders to be on the same page about how a harvest should take place. We hope that this guide will be a strong contributor to support such streamlining.

Colin Bond, CEO, New Zealand Kiwifruit Growers Inc.



©2024 Zespri Group Limited. All rights reserved. Zespri Group Limited and/or its subsidiaries ("ZGL") have endeavoured to exercise reasonable skill in obtaining and presenting the information in this document. However, this information is of a generalised nature and does not consider factors that may apply to any specific orchard or operation. ZGL makes no warranty, representation or guarantee of the accuracy or completeness of the information in this document in any way and ZGL shall not be liable to you or any person for any loss arising from reliance on the information. ZGL strongly advises that you obtain tailored professional advice for your specific orchard and/or operation.

CONTENTS

PREPARING FOR THE HARVEST SEASON	6
HARVEST SEASON	10
HARVEST DAYS	14
HARVESTING KIWIFRUIT IN NEW ZEALAND	20
OTHER USEFUL INFORMATION	24



PREPARING FOR THE HARVEST SEASON

THIS SECTION COVERS THE ACTIVITIES TO GET READY FOR THE HARVEST SEASON. STARTING EARLY MEANS YOU AND THE HARVEST CONTRACTOR WILL BE READY AND WELL PREPARED FOR WHEN HARVEST STARTS.

Checklist to ensure you are prepared for harvest:

- ✓ Finalise compliance prerequisites.
- ✓ Discuss the harvest with your post-harvest representative.
- ✓ Draw up and sign an orchard services agreement with the harvest contractor.
- ✓ Visit your harvest site with the contractor.

FINALISE COMPLIANCE PRE-REQUISITES

As a grower you have compliance obligations that must be completed before you can harvest:

- Residue test (taken three to four weeks before harvest) and spray diary cleared (audited). Usually, your post-harvest representative will arrange for residue samples to be taken and will submit your spray diary. Residue test results are valid for 42 days and the results go straight into spray diary.
- Zespri supply agreement form signed and submitted (see QR code on this page).

DISCUSS THE HARVEST WITH YOUR POST-HARVEST REPRESENTATIVE

To assist your post-harvest facility in their planning, it is useful to discuss your pending harvest one to two months before the harvest is due to start. Talk through your expectations of the crop and give them an indication of when maturity testing should start.

Discuss the following with your post-harvest representative:

- Potential of your fruit – is it likely to make KiwiStart? Could it store well?
- Review responsibilities and dates for:
 - Residue samples
 - Spray diary submission
 - Clearance samples and proposed sampling dates
 - Bin delivery
 - Trucking requirements including loadout pad size and access

DRAW UP AND SIGN AN ORCHARD SERVICES AGREEMENT WITH YOUR HARVEST CONTRACTOR

Under the new GAP requirements, all growers and harvest contractors must have an Orchard Services Agreement. This agreement ensures that you and the contractor have discussed and agreed upon all the necessary aspects of the harvest, and that you are both clear on what to expect from the harvest.

It is advisable to have a discussion first to agree the overall points, and then confirm this in writing by drawing up the agreement. Scan the QR code on this page for a template of the written document: Orchard Services Agreement - NZKGI.

Aim to get your agreement in place around two months before the harvest. Have a back-up plan in case the situation changes closer to harvest time and your contractor is not available when you want to pick.

Scan the QR code on this page for the Zespri industry site with an up-to-date list of approved contractors.

The topics to cover in the harvest contractor discussion should include:

- ✓ Confirmation that the contractor holds a valid CAV (Compliance Assessment Verification). This applies to any contractor who wants to offer a kiwifruit harvesting service to growers.
- ✓ Any changes to the orchard since last harvest.
- ✓ Specifics of the harvest including the variety to be harvested, the size of the area or expected number of bins and the likely timing of harvest (especially if you are aiming for KiwiStart).
- ✓ The expected crop yield (this will determine the size of team needed).
- ✓ Anything tricky or unusual about the harvest or site.
- ✓ Who will organise what (such as machinery or bins).
- ✓ What training or skills the contractor's team has.
- ✓ Agreement on the payment rate and type.
- ✓ Review of respective health and safety plans.
- ✓ Your role during harvest and whether you plan to be part of the picking team.



SCAN THESE QR CODES USING THE CAMERA ON YOUR SMARTPHONE TO ACCESS USEFUL INFORMATION ABOUT PREPARING FOR HARVEST:



Zespri Supply Agreement Form



Orchard Services Agreement - NZKGI



Approved Contractor List



VISIT YOUR HARVEST SITE WITH THE CONTRACTOR

Contractors are encouraged to do a site visit at least one month before harvest. Ensure you are available for the site visit to walk the contractor through the points below.

TOPICS TO COVER AT THE SITE VISIT

✓ Orchard layout readiness

- Provide the contractor with an accurate, up-to-date map of the orchard (the area to harvest). Mark the loadout pad, toilets and handwash facilities, and the parking area.
- Ensure that you have marked all health and safety hazards on the map provided.
- Identify any broken structures or new hazards.
- Point out any specific orchard features, such as slopes or areas that become difficult to access after heavy rain.
- Discuss anything that needs to be fixed before picking can start. Agree on any actions you need to take to prepare, for instance tying up fruit before a clean-up spray is applied.

✓ Facilities for the harvest team

- A designated rest area with shade or shelter where the team can have their meals.
- A safe parking area.
- A supply of safe drinking water. Most pickers will bring a bottle with them, but they need to be able to refill these during the day.
- Sufficient hand washing facilities and toilets for the size of the expected team – the guideline is one toilet for every 20 people, located within 500 metres of their working area. Discuss whether more toilets are required and who will organise and pay for them.

✓ Loadout pad

- Location and access
- Bin storage areas
- Traffic management plan

✓ Factors that could affect picking quality

- Are there visible fruit issues such as softs, shrivelled stalks, or hail damage?
- Is there a risk of fruit damage due to low hanging fruit, rough tracks and headlands, or steep difficult slopes?

- What gear will be used during the harvest including gloves and glove management, and how will the team deal with contaminated gloves and bags?
- Bin trailer types and how they will be used, how the picking teams will generally operate and be managed during the harvest?

✓ Machinery

- Confirm that the contractor's gear is well maintained, cleaned and up to standard.
- Confirm that team members are qualified to operate machinery such as forklifts and tractors.
- If you plan to provide machinery, then the contractor needs to be confident that it is safe to use. Ensure your machinery is serviced, well maintained, and fit for the job. Understand the liability you take when providing that machinery and ensure that your insurance covers the planned use of that machinery. You should show the operator how to use the machinery correctly.
- Encourage your harvest contractor to use four-wheel drive (4WD) tractors, especially if you have slopes in your blocks or if the ground is getting wet and slippery. 4WD tractors are often a safer option and have a higher towing capacity than a 2WD.
- Clarify the types of bin trailers to be used and how these will be managed to achieve optimal fruit quality. See the Additional Information section on page 24 for information about soft riders and standard bin trailers.

✓ Harvest team

- Agree on what you can expect from the harvest team. Get clarity on the team structure (size and roles), who the supervisors are and their roles, and who your main contact will be in case of quality problems or other issues.
- Confirm the level of service that will be provided. For instance, check whether the team will be able to do a select pick if required.

COMMUNICATION IS KEY TO A
SUCCESSFUL PICK – KNOW WHO IS
DOING WHAT, WHEN AND HOW!





HARVEST SEASON

THIS SECTION EXPLAINS THE KEY ACTIVITIES RELATED TO THE START OF HARVEST SEASON, UP TO THE START OF PICKING, INCLUDING A DISCUSSION ON SELECT PICKING. THIS SECTION DOES NOT COVER THE DECISION TO HARVEST, WHICH IS A COMPLEX DECISION INVOLVING POST-HARVEST AND MATURITY TESTING RESULTS.

To get ready for harvest, make sure you:

- ✓ Prepare the orchard for harvest.
- ✓ Prepare the fruit for harvest.
- ✓ Decide if a select pick is right for your orchard.
- ✓ Set a harvest date with your post-harvest facility and contractor.



Scan for more information on



✓ PREPARE THE ORCHARD FOR HARVEST

The build up to harvest is a busy period and there are several things you need to consider and prepare to ensure that your orchard and crop are ready for harvest. Good preparation can go a long way to supporting a smooth harvest and having a happy harvest contractor, satisfied harvest team, and the best result for your fruit.

A well laid out and tidy set-up for harvest enables smooth running, efficiency, and safety.

Things to consider:

✓ Is the orchard safe?

Hazards include holes and uneven ground, slips, low hanging wires and structures, damaged shelter, and other natural orchard features.

- Walk the orchard and ensure that you have identified hazards and rectified where possible.
- Mow the grass so that pickers can easily see where they are walking.
- Mark hazards on the orchard map and provide it to the harvest contractor so that they can discuss them with the picking team.
- Check that hazardous materials are securely locked.

✓ Is the loadout pad ready?

A congested loadout pad can delay the delivery of empty bins to pickers and full bins to the post-harvest facility, with delays resulting in frustration and potentially poor tractor driving. Have a loadout pad that is large enough for the machinery and bins.

- Remove unnecessary obstructions and ensure that the surface is level and smooth.
- Fill in potholes and ensure forklift operators are aware of any slopes on the pad.
- Apply a weed spray at least three weeks prior to harvest.

✓ Is signage in place?

All signage must be in place and hazardous areas cordoned off.

- Check that all signs are in place including block signage; row numbers; tracks for tractors and walkers; the loadout pad; toilets and handwashing, car parking and hazards.
- Check that the block markings line up with the orchard map so that it is clear which area the contractor will harvest.

✓ Are your tracks ready?

Potholes, tree roots and slippery ground create hazards for machinery as well as resulting in a bumpy ride for fruit.

- Fix tracks to provide smooth driving.
- Ensure that you have clear signage to make it easy for the harvest team to find their way around the orchard.
- Identify alternative routes the tractors can use to avoid fruit damage or contamination with mud if tracks are getting damaged or muddy.

✓ Are the facilities ready?

Ensure facilities such as toilets and hand-wash areas are sufficient for the number of people who will be on site and are stocked with soap, paper towels and a rubbish bin.

- Check facilities are clean.
- Hire additional toilets if required.

✓ Is my post-harvest representative informed?

Ensure they know your picking plans. They will need to get the bin cards to the orchard and arrange for bins to be delivered, and you want to be sure that they are ready to receive your fruit.

- Check that bins and bin cards are organised.

✓ PREPARE THE FRUIT FOR HARVEST

Fruit cannot be harvested until it has cleared the maturity standards. In the four-week period before harvest starts there are several activities to complete to get fruit harvest ready. These include:

- Tie up any low hanging fruit – research has shown that fruit hit by machinery close to harvest can experience defects in storage. The damage to this fruit is not always visible at harvest and may end up causing problems later in the supply chain.
- Consider a pre-harvest cosmetic thin to remove unwanted fruit.
- Mark sick vines and drop fruit to the ground so that it is not picked with the rest of the crop.
- Mulch if there is a lot of fruit on the ground as rotting fruit can get flicked from the tractor wheels into the bins at harvest.
- Decide if a clean-up spray is required and communicate with your harvest contractor about when the fruit should be ready for picking. It is frustrating to have pickers on the orchard waiting for fruit to dry.
- If you are aware of soft fruit, consider running through the block with a sprayer fan on to remove some of the overripe fruit. This will help reduce the chance of softs and overripe fruit being picked or falling into bags.

✓ HOW TO DECIDE IF A SELECT PICK IS RIGHT FOR YOUR ORCHARD

Most orchards will strip pick, where all the crop is harvested at once.

There are three situations where select picking is a good option:

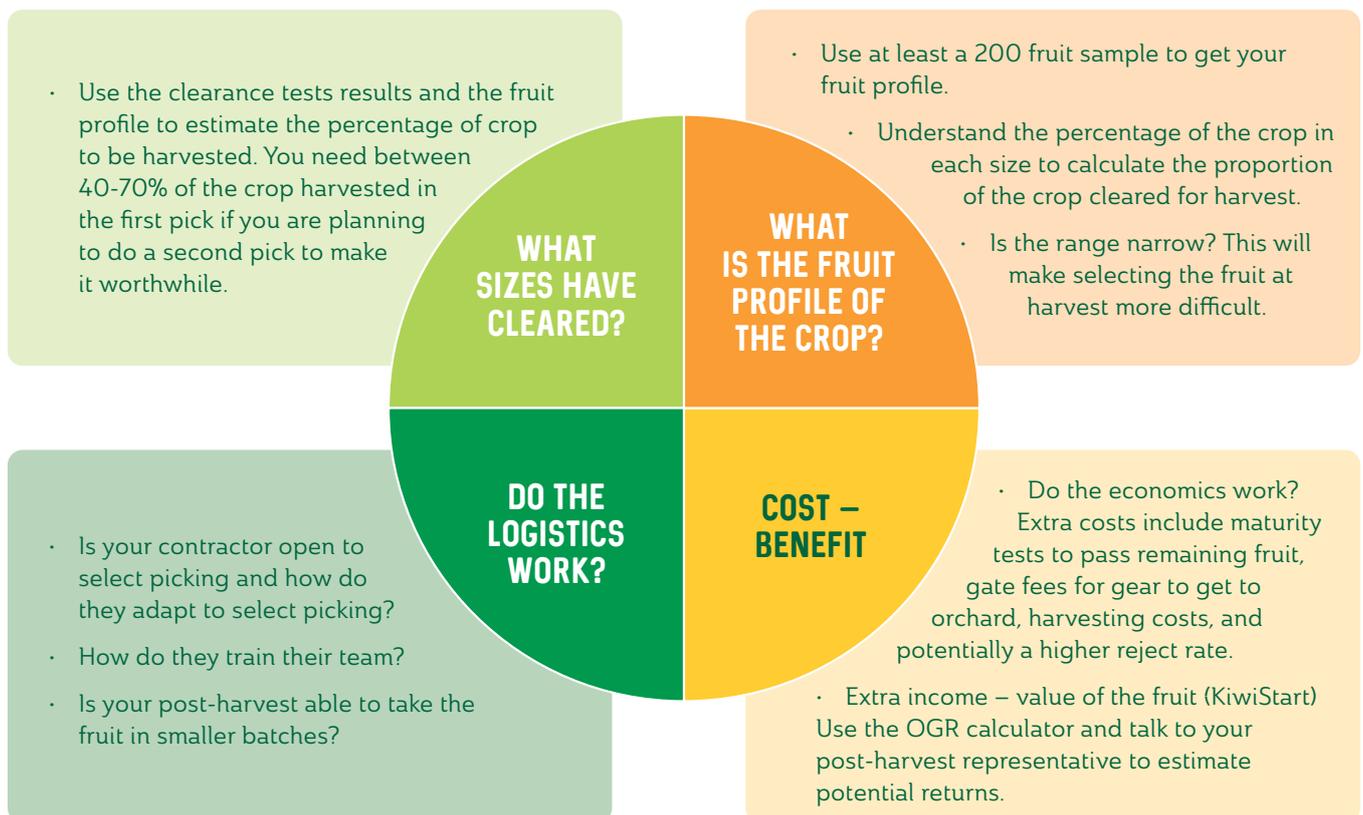
1. When you are making the most of KiwiStart incentives, by picking fruit that has cleared and leaving the balance of the crop for Mainpack.
2. When you need to harvest larger fruit earlier at their optimal maturity and avoid them softening too much while waiting for smaller fruit to mature.
3. When the crop is not maturing well, or has been damaged and you need to recover the best fruit and leave the remainder unharvested.

The aim of select picking is to harvest as many cleared fruit as possible leaving behind fruit that are not acceptable for export.

Select picking is a big decision and it is advisable to work with your post-harvest representative and harvest contractor to make the decision. Your post-harvest representative can assist with the interpretation of maturity reports and calculating whether there is a financial benefit to select pick, and your contractor can help with the practical implications.

Below is a summary of the key points you need to consider in deciding if select picking is a good option for you. For more detail on select picking see the *Good Harvest Practice for Growers* page on Canopy by scanning the QR code on this page.

KEY QUESTIONS TO CONSIDER FOR SELECT PICKING



SCAN THIS QR CODE FOR KEY PICKING INFORMATION



Good Harvest Practice for Growers



✓ SET HARVEST DATE WITH YOUR POST-HARVEST FACILITY AND CONTRACTOR

You will make the decision about when to harvest in discussion with your post-harvest representative and using your fruit clearance results.

Information that you will need to consider includes:

- Maturity clearance results. Fruit must pass minimum standards before the crop can be harvested.
- Fruit maturity and how it is changing for your fruit, including fruit softness. This can be understood by looking at subsequent sampling results and the Smart Monitoring. Scan the QR code for more information on canopy.
- Post-harvest scheduling.
- Financial returns of your crop – Use the OGR calculator to help by scanning the QR code on this page.
- Weather forecasts.
- Your appetite for risk.
- Availability of your harvest contractor.

Scan the QR code for information about when to harvest.

Remember that you need to obtain a CTP (Clearance to Pick) document before you can harvest. Your post-harvest representative can help with this.

- Communicate the date to start picking with your harvest contractor.



SCAN THESE QR CODES FOR MORE INFORMATION ABOUT WHEN TO HARVEST



When to Harvest



Smart Monitoring



Orchard Gate Return Calculator





HARVEST DAYS

THIS SECTION DETAILS THE ACTIVITIES FROM THE START OF HARVESTING. IT ALSO GIVES GUIDANCE ON HOW TO MONITOR PICKING QUALITY THROUGH AUDITS.

To have a successful pick, make sure you:

- ✓ Are clear on your role at harvest day.
- ✓ Know the factors that could impact on picking speed.
- ✓ Know how to deal with tricky picks.
- ✓ Monitor picking techniques and picking quality.

THE GROWER'S ROLE ON HARVEST DAY

The day of harvesting can be stressful, but if you have prepared your fruit and orchard, and the weather plays ball, it should run smoothly. Communication is vital, so keep in touch with your post-harvest representative and your harvest contractor as they complete the preparations to harvest.

A key role that you have on harvest day is to support the site manager with the information that they need to make the harvest go smoothly, ensuring that your fruit is being handled carefully.

It's your fruit being harvested - being present and monitoring the harvest shows interest and helps to support the good harvesting practices needed to maximise your returns. Some things you can do:

- Introduce yourself to the site manager on the day and ask them to introduce you to the team.
- Attend the briefing so that you can get a sense of what the team is being directed to do.
- Walk among the pickers and comment on good practice. If you want to offer rewards for excellent work, then talk to the harvest contractor first about how best to do this.
- If you have any concerns or notice bad picking practice, then talk to the person in charge of dealing with the problems. It is not your role to correct problems with pickers.
- There are many easy ways to thank the picking team for good work. Consider providing food like pies or baked goods at break time or at the end of the day. Small gestures will help to boost morale and show your appreciation. It's best to do this early in the pick rather than leaving it to the end.

FACTORS THAT COULD IMPACT THE SPEED OF THE PICK

Pickers should aim to pick quickly, but not at the cost of fruit quality. There are no set targets or expected picking rates (bins/hour) as the speed of picking will vary depending on factors such as:

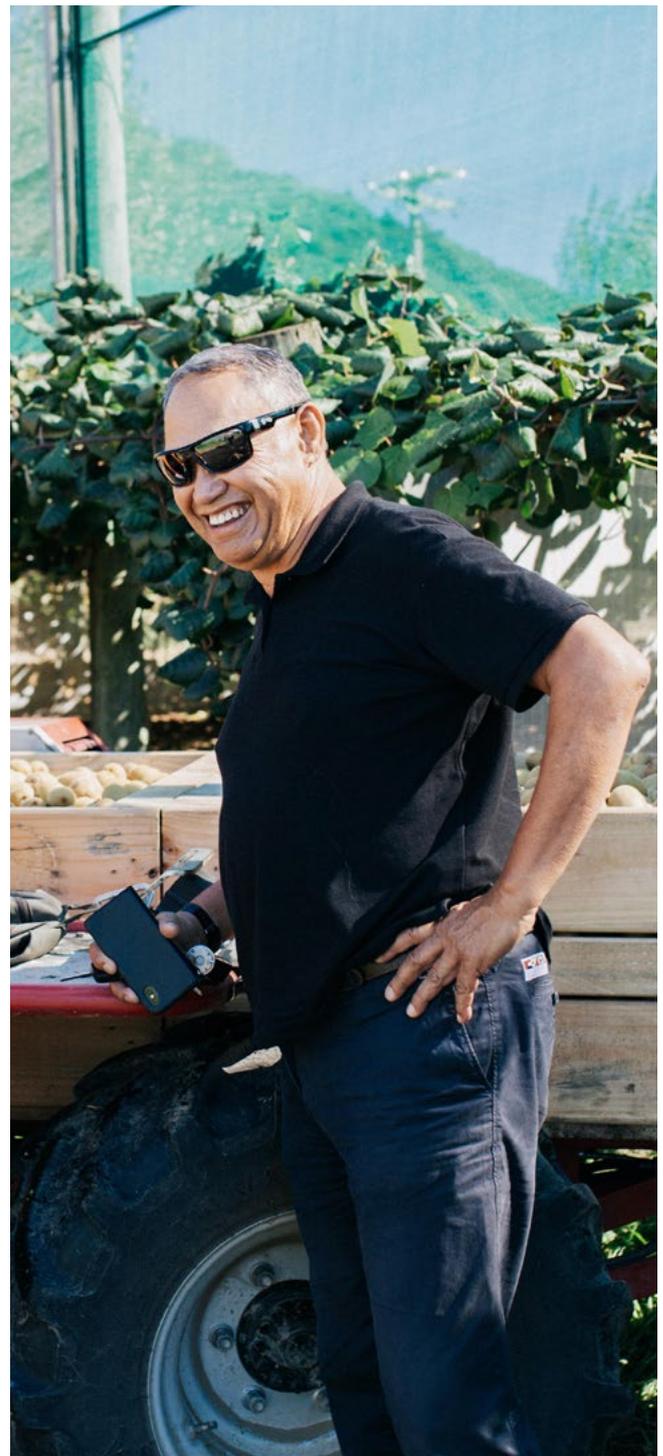
- Orchard terrain, access, and layout: machinery turnaround is affected by distance to the loadout pad, under-vine shelter can slow down pickers as movement between rows is limited.
- Fruit presentation within the canopy: fruit density, fruit size, crop condition (soft fruit, hard to remove stalks, hail damage).
- Picking strategy: pickers move slower when select picking to pick only the right sized fruit.

Many of these factors are influenced by the orchard and how the fruit is presented. Each orchard will have its own ideal harvest speed. Flat, open orchards with firm, large

fruit will naturally be faster than narrow, hilly orchards with small fruit. Growers can influence harvesting efficiency by how their orchards and fruit are presented for harvest.

HOW TO DEAL WITH TRICKY PICKS

Some crops or orchards can be tricky to harvest and require special planning. Get everyone together (your harvest contractor and your post-harvest representative) to agree on the approach for that orchard so everyone can get the best result.



Here's a summary of some common fruit-related tricky picks with tips on how growers and contractors can work together to manage these:

! LOW DRY MATTER

Issue:

Sizes aren't passing and a strip pick will lead to a large number of rejects, making harvesting expensive.

Options:

Use the fruit size profile to decide which is most economic:

- Select pick of passed sizes.
- Strip pick after the small sizes have been thinned off.

! SOFT / EXPLOSIVE FRUIT

Issue:

Soft fruit should be kept out of the bag and bin.

Juice from one soft fruit can contaminate as much as 68% of the fruit in a picking bag.

Juice encourages NPF (non-pathogenic fungal growth), which is an ugly black marking on the fruit and leads to fruit needing to be re-packed and NPF fruit dumped. For more information about NPF scan the QR code on the next page.

Options:

Make the pickers aware of the problem. Pickers should:

- Pick the fruit around the waist to give them a better feel for its firmness.
- Not pick bunches of fruit at once.
- Not wear gloves.

During picking immediate action is the key!

Limit the spread of fruit juice to other pieces of fruit:

- Drop softs on the ground.
- Wash hands immediately if they get juice on them.
- Clean contaminated picking bags immediately.
- Change gloves with juice on them immediately.
- Picking supervisors should watch as bags are emptied and remove any soft fruit or fruit contaminated with juice from the bin and help pickers with training.

! SHORT OR STUB STALKS

Issue:

Stalks can snap during picking, leaving short stalks attached to the fruit. **These create puncture wounds in other pieces of fruit leading to fruit rot.**

Options:

Ensure the pickers are:

- Briefed on the issue.
- Have had the correct picking technique demonstrated to avoid snapping and how to 'rub-off' the short stalk if it does snap.

Picking/Bin Supervisor should:

- Watch for short stalks and deal with these by removing the stalk and throwing out any damaged fruit that can be seen.
- Help correct picking technique.

! DAMAGED FRUIT – HAIL, FROST

Issue:

Before harvest the grower will have the orchard assessed and will plan with the contractor on how to harvest.

Options:

- If there is a high level of visible damage, dropping the fruit before harvest is recommended.
- If the amount of damage is small but visible, pickers should be advised not to pick it or to drop it to the ground.
- Mention as part of the pre-pick briefing and have the supervisor monitor it.
- Revise the payment method if necessary.

Here's a summary of common orchard-related tricky picks and tips to manage these:

! WET GROUND

Issue:

Wet ground is a key health and safety issue.

Fruit that gets contaminated by water or dirt cannot be sold. Contact your post-harvest representative and Zespri team if the orchard has been flooded.

Options:

- See if you can delay harvest if possible until conditions improve. Discuss with your harvest contractor before the day of harvest so that they can plan equipment appropriately.
- Use four-wheel drive (4WD) tractors.
- Discuss tractor travel routes to avoid slippery areas and have options to change the route during the day to avoid creating excessive mud.
- Check the experience level of tractor drivers.
- Cover bins with a tarpaulin to stop mud flicking into empty bins or over fruit.

! POOR ORCHARD LAYOUT – SMALL HEADLANDS OR SMALL / NO LOADOUT PAD

Issue:

If the orchard layout creates challenges for machinery turning around, then this will likely slow picking and may increase the cost of harvesting.

If you load from the road then a Traffic Management Plan needs to be registered with Waka Kotahi / NZTA. This should be arranged before harvest.

Options:

- Discuss the issues with your contractor so that they bring the appropriate gear with them.
- Ensure the Traffic Management Plan is registered with Waka Kotahi / NZTA if you are using the road and inform your neighbours.
- See if you can arrange to use your neighbour's loadout pad if your loadout area is too small.

! LOW CANOPIES OR DAMAGED STRUCTURES

Issue:

Health and safety hazards should be rectified before harvest.

Options:

- Clearly mark areas with hi-vis warning tape and ensure these are clearly marked on the orchard map ready for the pre-pick briefing.
- Tractors should avoid rows with damaged structures.

! SLOPES

Issue:

Slopes create tipping and breaking issues especially once bins are full.

This should have been discussed with your contractor at the site visit pre-harvest. This becomes more of an issue in wet or dewy conditions.

Options:

Ensure contractor has a plan in place to keep their staff safe:

- Use four-wheel drive (4WD) tractors for safety.
- Reduce trailer's weight by using empty bins if needed.
- Tractor drivers should be trained to drive on slopes, or they should not be driving.
- Plan routes to avoid slopes where possible.



SCAN THIS QR CODE TO ACCESS USEFUL TRAINING RESOURCES:



Gloves, Bags and NPGF Research Summary



DECIDING WHEN NOT TO PICK YOUR CROP

Not picking your crop is a decision growers make reluctantly, as a significant amount of time and money has been invested in getting the fruit to this stage. There are however some situations where harvesting the fruit is not the right choice:

- When the the proportion of the crop cleared for harvest is insufficient to make harvesting economic. This is rare, normally there are enough sizes passed to make a select pick viable.
- When orchard conditions are not safe for the harvest team. After severe weather conditions, ground conditions or damaged structures may be too much of a risk for pickers and tractor drivers.
- If a severe frost or hailstorm happens close to harvest, damage to the fruit may not be visible immediately, but would develop in storage. Contact Zespri (0800 155 355) for a crop assessment. Scan the QR code for more information about hail.
- If a proportion of the crop has cleared, consider select picking. Waiting too long can result in fruit being over mature and soft, meaning it is unlikely to remain in good condition through picking, packing and storage.

WHAT IS GOOD PICKING TECHNIQUE?

Good picking techniques help reduce the cost of quality to the grower and improve OGR, ensuring more fruit is sold to customers rather than being lost as rots, blemish, and other storage defects.

If fruit is roughly handled it can bruise and rot before it gets to consumers.

Good picking techniques should include the following:

- Stalks are cleanly removed from each fruit.
- Fruit placed in bags, NOT dropped.
- Pickers have removed rings from fingers and their nails are short.
- Gloves are clean and changed immediately if they get juice on them.
- Hands are washed and dried immediately if juice is on them.
- Juice is kept out of bags. Bags are cleaned immediately if juice is present.
- Juice is kept off fruit.
- Bags emptied gently into bin without knocking the edge of the bin as they are lifted in.



If you observe poor picking practices talk to the agreed upon responsible person (normally the Site Manager or the Managing Supervisor). Focus on giving positive feedback to the pickers directly.

Use the QR codes to see the training videos for pickers and supervisors and update yourself on the picking research and techniques:



SCAN THESE QR CODES TO ACCESS USEFUL TRAINING RESOURCES:



Information about Hail



Picking Practices Poster



Picking Training Videos



MONITORING PICKING QUALITY (AUDITS)

Audits are a great way to assess how the harvest is going and to keep a focus on fruit quality. There is no official audit structure for kiwifruit harvests and different post-harvest facilities and harvest contractors use different audit systems.

Audits assess the quality of the fruit being harvested and identify any issues with the harvesting process including:

- Picking practices.
- Transfer of fruit to bins.
- Quality of fruit reaching bins.
- Transport and handling of bins to the point of the truck being loaded.

Ideally auditing should use a written format. Feedback should be given to the supervisor while picking is still underway so that they can put corrective actions in place.

There are three types of harvest audits:

- Post-harvest facility audit: auditor visits during picking.
- Internal audit: harvest contractor or grower completes regular audits during the harvest to assess team performance and identify issues early. It is recommended that contractors do some audits themselves.
- Pack out audit: the assessment of the quality of fruit arriving at post-harvest. It's unlikely that this feedback will be available during picking of that crop, but timely feedback will help the contractor know where the team needs to improve for the next pick.

Self-audits completed by either contractors or the grower can provide quick assessments of harvesting performance and identify issues early. These should be discussed prior to harvest. If you are planning on doing some self-audits this should have been included in your initial discussions along with how the information is to be used. The self-audit template can be found on the [Canopy Good Harvest Practice for Growers](#) page.





HARVESTING KIWIFRUIT IN NEW ZEALAND

THIS SECTION GIVES YOU INFORMATION ABOUT THE INDUSTRY STRUCTURE AND THE HARVESTING SEASON FOR KIWIFRUIT IN NEW ZEALAND.



INDUSTRY STRUCTURE

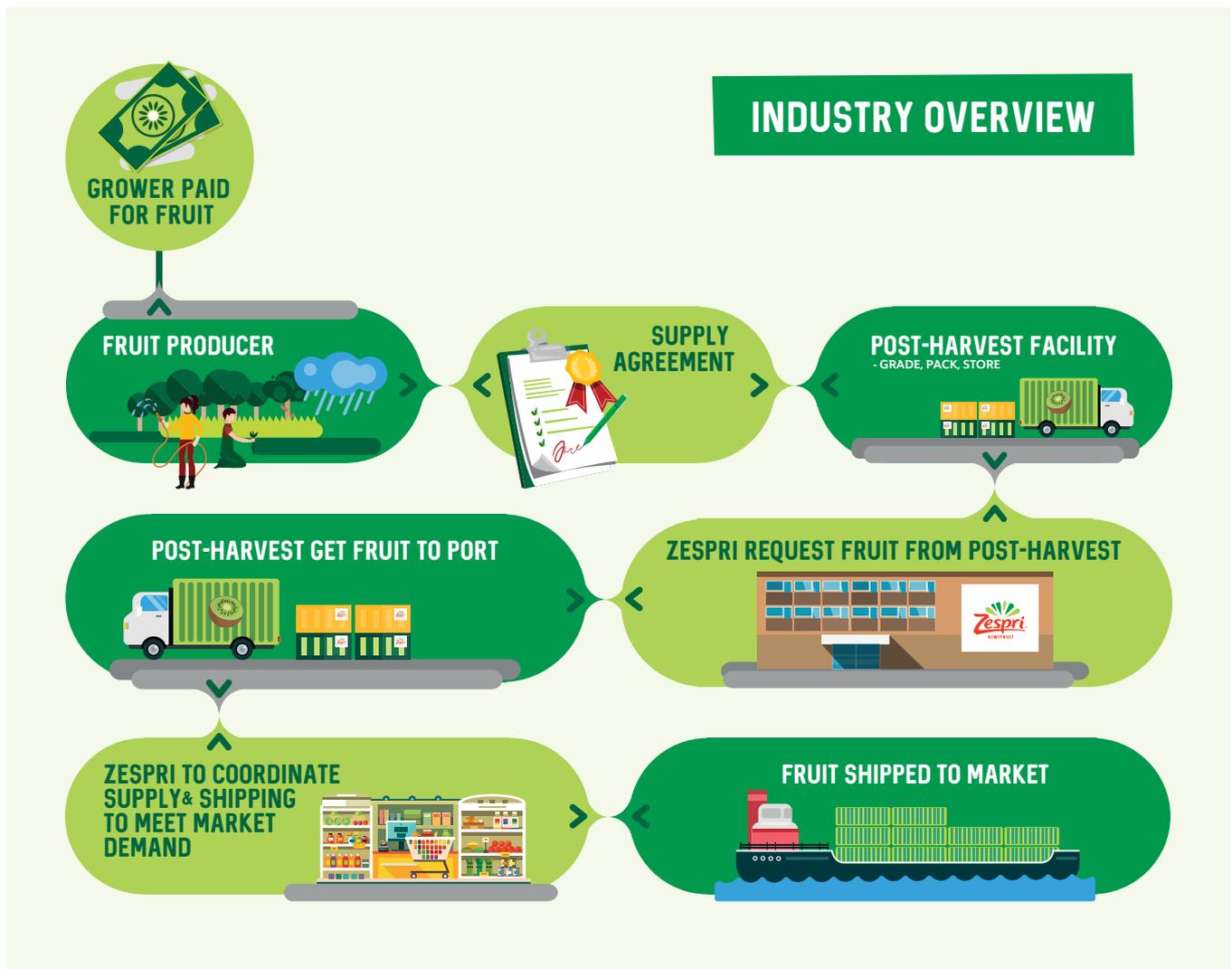
The kiwifruit industry is made up of the following groups:

- **Orchard owners** – individuals or companies that own the orchard. Sometimes these orchards are managed by the owners but often they contract the management out to a management company who makes decisions on behalf of the owner.
- **Post-harvest facilities** – manage the packing and storing of fruit. There are several post-harvest facilities in New Zealand.

- **Zespri** - kiwifruit marketer and distributor that sources fruit from post-harvest facilities. Zespri does not own orchards or grow kiwifruit.

Growers enter into agreements to supply fruit to post-harvest facilities. The post-harvest facilities grade, pack and store the fruit and meet Zespri's supply orders with this fruit.

Every group involved in harvest has a role to play to ensure fruit is handled appropriately and fruit quality is optimised.



THE HARVEST SEASON

Harvest is a critical point in the growing season as all the hard work that has gone into growing the fruit now becomes dependent on a successful harvest to deliver high-quality fruit to ship to international markets.

The kiwifruit harvest starts in late February in New Zealand and can run through to early July.

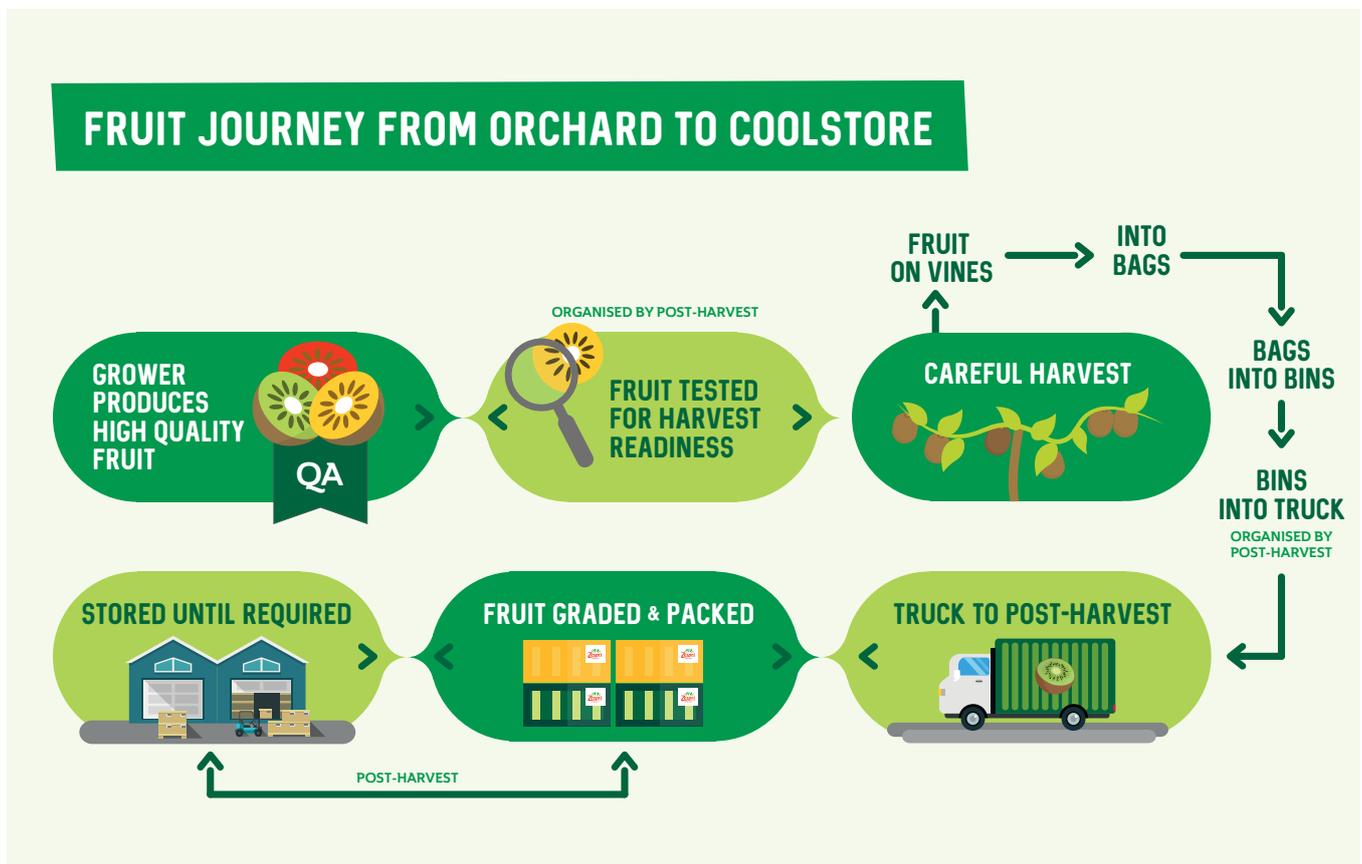
The fruit on orchards reach harvest maturity at different times throughout this period, depending on management practices used on the orchard, and environmental conditions. The first crops ready to harvest are Red19, followed by Gold3 and Hayward.

Harvest starts when the fruit on an orchard reaches a set of defined maturity criteria, which have been shown to result in acceptable tasting fruit that can be handled,

stored and transported through the supply chain so that high quality fruit reach the international markets.

When the fruit reach maturity the crop is cleared for picking and the harvest process can commence. Kiwifruit are picked by hand and several blocks in an orchard are generally picked at the same time.

Harvesting requires many people and is therefore generally undertaken by a harvest contractor who brings in a team of people to do the harvesting.







OTHER USEFUL INFORMATION

Other useful information you might need to know:

- ✓ Payment options for pickers.
- ✓ Pros and cons of different harvest machinery.
- ✓ Common roles in the harvest team.

PAYMENT OPTIONS FOR PICKERS

HOURLY

The hourly rate is agreed up front and fixed regardless of type and difficulty of pick.

Be clear in your communications whether travel time to and from the orchard is paid for.

Pros:

- Pickers have certainty of income regardless of the difficulty of the pick, orchard contour and type of pick. Allows pickers to harvest the fruit without compromising pay.
- Quality outcomes can be better controlled.
- Can lead to a more relaxed work environment.

Cons:

- Potentially can slow down the rate of work.

- Some pickers associate hourly pay with difficult crops or orchards.
- Pickers may see it as limiting or restricting income potential.

Notes:

Some contractors add a production-based incentive – that is, additional payment per bin to reward an efficient pick but cap the bins per hour to maintain good picking technique.

Some contractors who use both pay types note that if hourly rate is used throughout the season, then across the season, pickers should not see a negative effect on their earnings.

Use auditing results to support your incentive scheme.

Hourly rates are common in regions where a variety of crops are harvested such as Nelson and Hawkes Bay.

CONTRACT (BIN) RATE

An agreed amount of money is paid for each bin that is filled. This is a widely accepted payment option in the Bay of Plenty.

Pros:

- Pickers are paid on performance.

Cons:

- Need to ensure minimum wage is met in slow pick situations.
- Requires additional administration of bin tallies for each picking team.
- Can motivate rate of picking over quality (for instance rain picking). This can create conflicts between contractor, grower, and picking teams.

- If team supervisor is paid at the bin rate it creates a potential to compromise quality.
- Needs strong supervision and self-audits to maintain picking quality.
- Difficult to use if select picking, harvesting damaged or tricky crops, difficult orchard contour/layout, light crop yields.
- Can make more challenging orchards less attractive to pickers.

Notes:

To encourage good practice, cap the number of bins/hour that they can be paid for. Set this at an appropriate level for the orchard being harvested.

Have strong communication processes if there is a risk of poor practices.

INCENTIVES

Any incentive needs to be in addition to their pay rate. There is no standard incentive programme in the industry and it is at the discretion of the contractor.

Pros:

- Used to encourage good practice.
- Paid in addition to reward good work.

Cons:

- Can be difficult to do fairly.

Notes:

Can be used in conjunction with the hourly or bin rate payment options. Need to have clear information agreed by all before implementing.



Supervisors - Harvesting & Views On Payment Structures Video



PROS AND CONS OF DIFFERENT HARVEST MACHINERY

TWO-WHEEL DRIVE TRACTOR

Use in flat orchards in dry conditions, when using smaller (three bin) bin trailers. These tend to be older tractors.

Pros:

- Cheaper and lighter than 4WD tractor.

Cons:

- Not suitable for slopes or wet ground.
- Lower towing capacity.
- Often older and potentially poorer braking systems.



FOUR-WHEEL DRIVE TRACTOR

Have a heavier towing capacity and better traction than a 2WD tractor.

Pros:

- More flexibility to use in a range of situations, including slopes and wet ground.
- Heavier towing capacity.
- Generally more modern and better safety features.
- Can use 4WD option to get out of a tricky spot.

Cons:

- Heavier – more ground damage and compaction if soil is wet.



- More expensive to purchase or hire and maintain.
- Can lead to a reliance on the tractor rather than using safe driving practices.

BIN TRAILER (3 OR 4 BINS)

When to use these:

The tractor arrives with empty bins and moves along with the picking team and is then replaced by another tractor and trailer when full.

Pros:

- Bins do not get placed on the ground, so they stay cleaner – especially in muddy conditions.

Cons:

- Safety – creates a physical hazard as tractors are driving amongst pickers. Also causes noise and fumes if left running.
- The bins are off the ground, making it harder for pickers to lift their bags into, leading to fruit damage.

- Can be bouncier on uneven ground, which may cause fruit damage.
- There may be picker down-time waiting for bins or a need for more tractors per team.



FORKLIFTS

When to use these:

Forklifts are key for loading trailers and trucks. This should be a fit-for purpose forklift. Forks on a tractor are not designed for loading and unloading trucks.

All terrain 4WD forklifts are more stable and therefore safer. All terrain 4WD forklifts might be required for rougher loadout pads or on orchards with small loadout pads where bins are stacked off the hard surface.



SOFT-RIDER TRAILER

Bins are placed out around the orchard ahead of picking. Pickers work near the bins. Once full, a soft-rider collects the bins and takes them to the loadout pad. Requires more skilled tractor drivers as they need to carefully reverse to pick up the bins. Bin placement is important to reduce the distance pickers walk to empty bags.

Different models are available both with and without locking bars. Using a model with locking bars will reduce bounce.

Key considerations for good results with soft-rider trailers include:

- One soft-rider per picking team.
- Keep the picking teams working as a group around the bins to enable monitoring and supervision.
- Have experienced tractor drivers that can competently reverse to the bins.
- To see a soft-rider in action, scan the QR code on this page.

Pros:

- Fewer machines are required, and less time is spent moving machines between orchards.
- Fewer tractor drivers using more specialist skills.
- Safer, as tractors are not among the pickers.
- Can provide a smoother ride for the fruit and may reduce fruit damage.
- Bins are on the ground, so it is easier for pickers to empty their bags.

Cons:

- Higher costs to purchase or hire and for maintenance.
- Requires a tractor with hydraulics.
- Requires tractor drivers skilled at reversing.
- Requires good picking supervision to keep teams working together and to prevent pickers breaking out to small groups where bins are spread out.

- Bins get muddy if ground is wet.
- Not suited to steep slopes or rough ground.



SCAN THESE QR CODES TO ACCESS USEFUL TRAINING RESOURCES:



Soft-Rider
Video



COMMON ROLES IN THE HARVEST TEAM

Here are the typical role types and responsibilities of harvest team members.



SITE MANAGER

Responsibilities

Oversees harvest operations on the day. Pre-site inspection (day before). Liaises between grower and post-harvest. Organises picking areas, people and equipment. Ensures that the induction and briefings happen.



PICKING SUPERVISOR

Responsibilities

Stays with the pickers during picking and monitors picking practice. Provides picking training before and corrective action during picking. Shouldn't be picking.



FORKLIFT DRIVERS

Responsibilities

Unloading/unstacking empty bins to load onto tractor trailers. Loads full bins into trucks. Ensures that bins are handled with care to avoid damage to bins, but more importantly to avoid damage to fruit.



TRACTOR DRIVERS

Responsibilities

Delivers empty bins to the pickers and full bins to the loadout pad. Plays a key role in liaising between picking teams and the loadout pad. Needs to have a focus on health and safety, especially using safe driving speeds.



When deciding how to structure the team you also need to consider:

- Height of the canopy – if you have a high canopy and short pickers, guide the shorter pickers to the lower parts of the canopy (i.e. the centre of the row) to reduce strain on their bodies. If the canopies are low, consider re-locating taller pickers.
- If the team speak a language other than English, ensure there is a translator who can clearly communicate with them. Ideally the supervisor should be able to speak English and the language of the team.
- If the pick is tricky (for instance select picking, soft fruit, hail affected) then the team structure may require a higher supervisor to picker ratio.



PICKERS (10-15 PER TEAM)

Responsibilities

Pick fruit to required standard. Need to be on time, hardworking and flexible. Need to take good care of themselves (health, fitness, safety).

OPTIONAL ROLES IN THE HARVEST TEAM

Often used in larger harvest operations. In smaller harvests these responsibilities are included in other roles.



MANAGING SUPERVISOR

Responsibilities

Liaises between grower and post-harvest. Organises picking areas, people and equipment in the orchard. Ensures that the picking activities in the orchard run smoothly. Works closely with the Site Manager.



QUALITY CONTROL

Responsibilities

An internal auditor checking fruit and watching picking practice to ensure fruit is not being damaged.

Provides instant feedback to the Picking Supervisor on picking performance.

Should be on site all day.

Preferably uses a written system to record fruit damage – this can then be reported to a supervisor for fast corrective action.



BIN YARD SUPERVISORS

Responsibilities

Deals with admin like bin cards and truck dockets. Keeps a tally of the number of full bins that have been returned to the loadout pad each shift. Ensures correct number of bins being ordered. Monitors traffic flow. Checks bins for anything that would cause fruit damage prior to use.



SWEEPER (ACTIVITY)

Responsibilities

Looks for what's being left behind. Picks that fruit and provides feedback to supervisor.



BIN SUPERVISOR

Responsibilities

Stays with the team during picking and monitors bag emptying practice. Checks fruit arriving at bins. Removes leaves, stalks and reject fruit. Checks bin levels. Provides feedback to the Picking Supervisor.



PICKER REP (ONE PER TEAM)

Responsibilities

Represents the pickers. Sits in on audits and raises issues. Can be valuable when pickers speak a language other than English.

GLOSSARY OF TERMS

This section describes some of the most common terms related to harvesting kiwifruit.

CTP – Clearance to Pick Report.

DM – Dry Matter. Refers to the percentage of the fruit fresh weight that is dry material. Dry matter is used as an indicator of taste. Fruit with higher levels of dry matter have higher consumer preference scores in taste testing.

Grower – the person who makes the decisions for the orchard. This could be the orchard owner or a management company.

KiwiStart – an incentive paid for early harvested fruit.

Loadout pad – a large, flat area where the fruit is received from the orchard and loaded onto trucks. This is also the area where empty bins are stacked. The area should preferably have a firm base as it is subject to lots of machinery activity.

Mainpack – when the majority of the fruit for that variety is harvested.

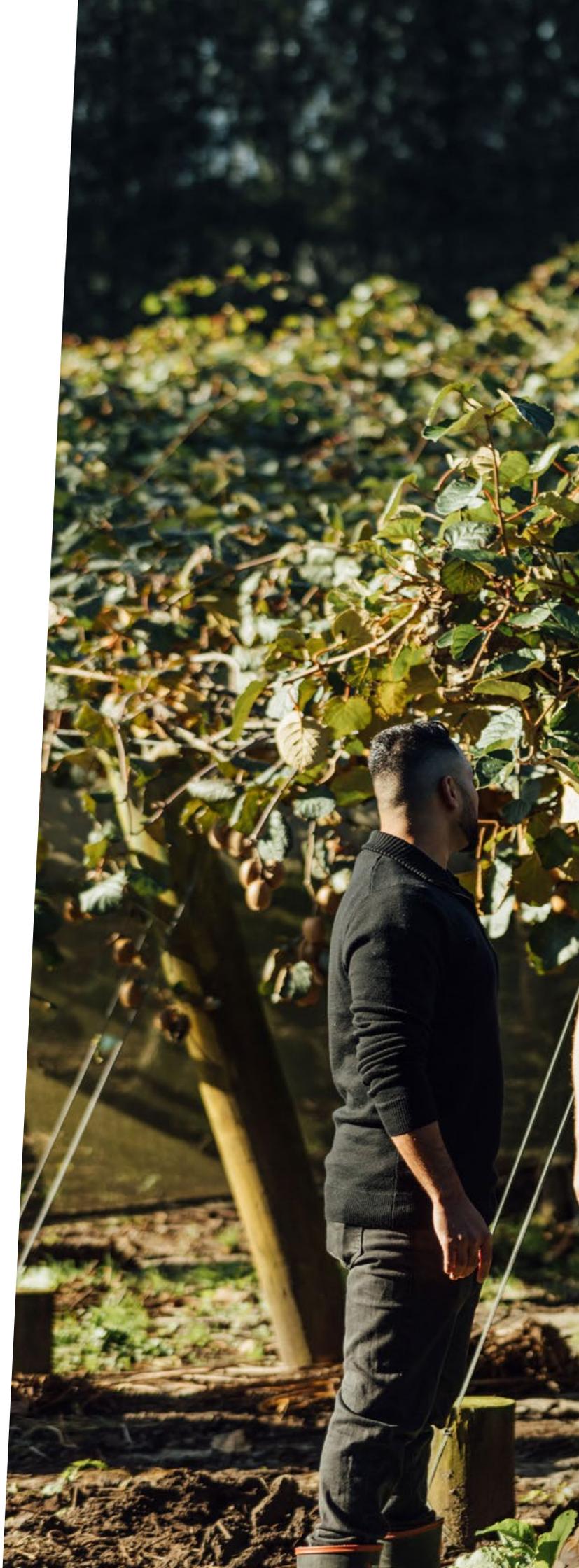
MCS – Maturity Clearance System, the system used to request and report on maturity samples.

Post-harvest facility – an organisation that provides post-harvest services such as fruit grading, packing and coolstorage.

Rain picking – a fast rate of picking where fruit are dropped into the bag. This is poor practice and can bruise fruit.

Strip picking – when all of the fruit from a crop is harvested at the same time.

Select picking – when fruit is selectively harvested, that is only a proportion of the crop is harvested and the remainder is harvested at a later date.





Harvesting Guide Production Team

Writing and editing: Anne Messervy, Wilma Foster

Research: Mary Black, Kirsten Hintze

Contributors: Gavin Stagg, Cam Clayton,
Jason Skiffington

We would also like to thank the many harvest contractors, industry personnel and growers that shared their knowledge and expertise for the creation of this guide

Layout and graphic design: Inkdrops Design

