




THE
KIWIFRUIT
HARVESTING
GUIDE

**FOR HARVEST
CONTRACTORS**



EVERYONE INVOLVED IN HARVEST HAS A ROLE TO PLAY IN ENSURING FRUIT IS HANDLED APPROPRIATELY 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 has gone 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.

This guide draws on the wisdom of harvest contractors, growers and post-harvest representatives and brings together the key practices for harvest contractors to achieve a high fruit quality and efficient harvest.

How to use the Harvesting Guide:

- ✓ The guide is structured according to stages in preparing for and carrying out 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 and buttons to other resources on specific topics.
- ✓ Everyone involved in harvest has a role to play in ensuring fruit is handled appropriately and fruit quality is optimised.

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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.

Harvest Contractors have a critical role to play in this. This harvesting guide is intended as a valuable resource for our 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, Chief Operating Officer, 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.



PREPARING FOR THE HARVEST SEASON

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

Checklist to ensure you are prepared for harvest:

- ✓ Complete the Compliance Assessment Verification (CAV) including a Health and Safety plan
- ✓ Discuss harvest requirements with growers
- ✓ Draw up and sign an orchard services agreement with growers
- ✓ Visit the harvest site
- ✓ Build your harvest team and decide what machinery you need

1. COMPLETE THE COMPLIANCE ASSESSMENT VERIFICATION (CAV) INCLUDING A HEALTH AND SAFETY PLAN

Before your business can harvest kiwifruit for Zespri growers, you must apply to register with Zespri and hold a valid **Compliance Assessment Verification (CAV)**.

The CAV requires an annual inspection by a Zespri approved inspector. After completing the inspection process, the CAV will be valid for 12 months. The inspector will assess your business systems to ensure they meet the requirements of Good Agricultural Practice (GAP) and **GLOBALG.A.P. Risk Assessment on Social Practice (GRASP)**.

For more information about all your compliance requirements including registration, health and safety, CAV, GAP and GRASP, scan the QR code on this page.

2. INITIAL DISCUSSION WITH GROWERS ABOUT HARVEST REQUIREMENTS

To help with planning have a discussion with the growers one to two months before the harvest is due to start.

The topics to cover in this initial discussion should include:

- Expected crop yield (this will determine the size of team needed).
- Anything tricky or unusual about the harvest or site.
- Grower expectations or harvest requirements.
- Who will organise what (such as machinery or bins).
- What training or skills your team has.
- Agreement on the payment rate.
- Provide the grower with your valid Compliance Assessment Verification (CAV) certificate.

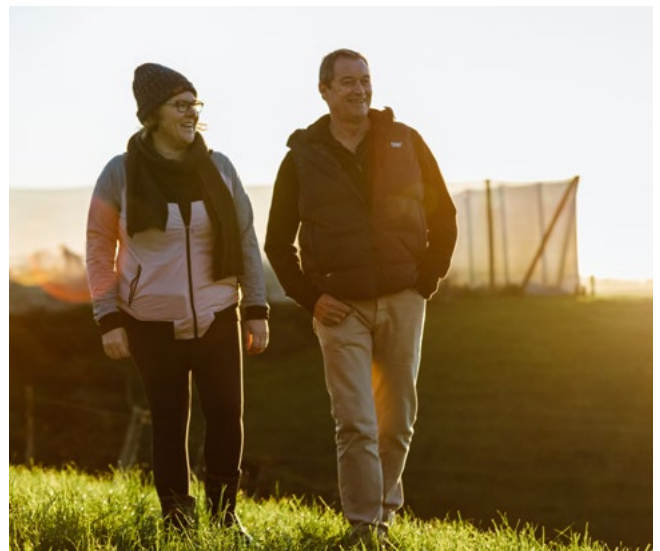
- Share and discuss your respective health and safety plans.
- Orchard biosecurity plans and any specific requirements around biosecurity.

After the discussion, confirm what you've agreed in your orchard services agreement. This will reduce the chance of misunderstandings and ensure both you and the grower are clear on what to expect from the harvest.

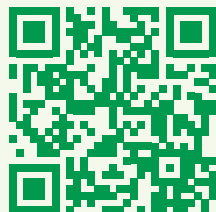
3. ORCHARD SERVICES AGREEMENT WITH GROWERS

This is a GAP requirement and ensures that you and the grower (your client) have discussed and documented all the necessary aspects of the harvest.

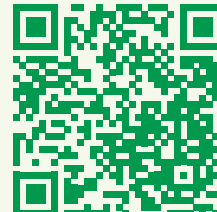
Scan the QR code below for a template of the written document Orchard Services Agreement - NZKGI.



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



Zespri
Industry Site 



Orchard Services
Agreement - NZKGI 

4. DO A PRE-HARVEST SITE VISIT

To support your planning, get familiar with the orchard to be harvested, especially when it's a new grower or new orchard. If you have harvested the orchard before and there have not been any significant changes, you may not need to do a site visit.

Visit the site **at least one month before harvest**. Ask the grower to attend so they can point out anything you need to be aware of or answer questions you may have. Get agreement on any concerns or issues and document those in the Orchard Services Agreement.

TOPICS TO COVER AT THE SITE VISIT

✓ Orchard Layout

- Familiarise yourself with the site.
- Get a copy of their orchard map and their health and safety plan.
- Check that all health and safety hazards are marked on the map provided.
- Ensure that all signage is in place including block signage, row numbers, and that hazardous areas are cordoned off.
- Identify any broken structures or new hazards.

✓ Check that the site has the following 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.
- Sufficient hand washing facilities and toilets for the size of the expected team – the guideline is one toilet for every 20 people and located within 500 metres of their working area.

✓ Loadout Pad

- Is it appropriately sized for the harvest job?
- How far is the loadout pad from the area to be harvested? The distance and time may influence the number of tractors and drivers needed.

✓ Are there any factors that could affect picking speed and quality?

- Is the canopy height standard, low or high?
- Does the bin estimate look right?
- Are there visible fruit issues such as softs, shrivelled stalks or hail damage?
- How easy will it be for the team to harvest the crop? Look for bunches, very high or low fruit.
- Is there a risk of fruit damage due to low hanging fruit, rough tracks, steep difficult slopes? After conducting a site visit you will be better able to plan the make-up and number of the picking teams, as well as the gear required to successfully complete the harvest.

✓ Talk through your plan with the grower

- Agree on solutions for any issues identified, for example get the grower to tie the fruit up before a clean-up spray is applied.
- Let them know how many people to expect, who to contact with any concerns ahead of the day and who to talk with on the day.

5. BUILD YOUR HARVEST TEAM

A successful harvest depends on having a reliable, fit for purpose, hardworking team. As an employer you have several legal obligations to meet. You also have a moral obligation to foster a positive workplace. It is more important than ever to create a work environment that will ensure you attract and retain a competent harvest team.

Allow enough time to recruit, train and onboard the harvest team in time for the season. This section covers the activities you need to consider in getting your team ready for the harvest.

Responsibilities as an employer

As an employer in New Zealand you have a number of legal obligations. The Employment New Zealand website clearly explains what you need to do to cover these obligations. These are a requirement of your GRASP accreditation.

Scan the QR codes on this page for links to useful information about your obligations as an employer.

Picking team size

You may operate several teams at a time, working as larger or smaller groups depending on the orchard size. A standard picking team comprises around 10-15 people including pickers and supervisors.

There are several places to recruit team members from, both locally (in New Zealand) and from overseas. You may also have long-term or returning team members who have worked with you previously. NZKGI offers a useful service to advertise roles, scan QR code for more info.

You must ensure staff are legally allowed to work in New Zealand. If employees are not New Zealand citizens, it is advised that you check their eligibility to work in New Zealand through Visa View, scan QR code for more info.

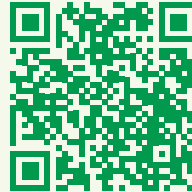
When interviewing check that pickers meet physical fitness requirements and have a 'can do' attitude.

Be open and honest about what is involved including what a typical workday would entail, the locations where they would be likely to work and the distance they may need to travel. Also, give them an indication of how long in advance you will notify them about work.

Give each new picker a copy of *The Little Green and Gold Book* for more information about working in kiwifruit orchards across New Zealand. To order more copies of the book, see the QR code on this page.

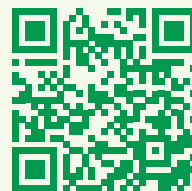
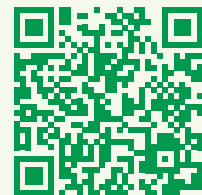


SCAN THESE QR CODES TO ACCESS USEFUL INFORMATION ABOUT YOUR OBLIGATIONS AS AN EMPLOYER:



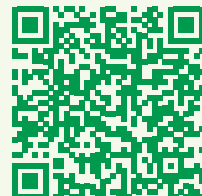
Labour – Employer Resources - NZKGI

Laws and Regulations | Worksafe



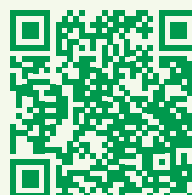
Employment NZ (elearning.ac.nz)

All you need to know about GRASP



Visa View

Find a Kiwifruit Job



The Little Green and Gold Book

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 different language, 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 damage to fruit 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 different language.

SELECTING THE PICKING SUPERVISOR

The picking supervisor has a key role to play in the success of the harvest. They should be an experienced and reliable person. Ensure they are appropriately trained and clearly understand their responsibilities and importance of their role. They should not be picking.

A good supervisor should:

- ✓ Be a part of the team and have their respect.
- ✓ Have good communication skills and ideally speak the same language as the team.
- ✓ Be able to lead and motivate the team.
- ✓ Ensure health and safety requirements are well communicated and maintained.
- ✓ Ensure that the team understands the job and the run of the day.
- ✓ Monitor picking technique and acknowledge good picking techniques.
- ✓ Demonstrate good picking technique and explain what damage can be caused to the fruit.
- ✓ Maintain picking quality and identify and correct problems in a way that maintains team morale.
- ✓ Induct new pickers.
- ✓ Help the team fit their bags correctly.
- ✓ Clean juice from picking bags and have replacement bags readily available.
- ✓ Liase with grower and other supervisors onsite on the day.
- ✓ Ensure gloves are available and being changed as soon as they have juice on them.
- ✓ Remove any damaged or explosive fruit from bins.
- ✓ Prevent stalks and leaves entering the bins.

Training the team

Training is key to setting the right standards and ensuring everyone in the team has the skills and knowledge to carry out their roles effectively. Hold refresher sessions for returning pickers and more in depth sessions for new pickers.

What training do they need?

All the orchard team should be trained for their role and this should be documented in GRASP.

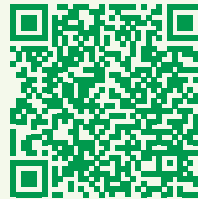
Training should cover:

- How to keep themselves healthy and safe during the season. Discuss suitable clothing, footwear, situational awareness and nutrition.
- How to properly set up and use the gear.
- Good picking practice including correct picking technique, fruit placement and emptying of bags. Explain clearly how picking technique directly impacts the consumer's fruit eating experience.
- Food safety/hygiene training – including handwashing and the importance of not picking fruit up off the ground.

For useful picking training resources in multiple languages, including videos and podcasts, go to Training Resources - Zespri Industry Site using the QR code.



SCAN THE QR CODE FOR TRAINING RESOURCES:



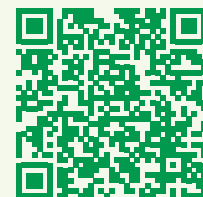
Picking Practices Posters 



NZKGI Supervisor Training Course 



Training Resources - Zespri Industry Site 



Zespri Supervision Podcast 

**TRAINING IS A KEY COMPONENT TO
SETTING THE RIGHT STANDARDS AND
ENSURING EVERYONE IN THE TEAM
HAS THE SKILLS AND KNOWLEDGE TO
CARRY OUT THEIR ROLES EFFECTIVELY.**



Forklift and tractor drivers

Forklift drivers must have appropriate training and certification.

Tractor drivers should be given appropriate training which may require an external trainer to deliver the training.

Training for tractor drivers should include:

- Appropriate training for conditions and situations they could experience during harvest.
- Driving with trailers (different types or specific to contractor).
- Driving on slopes with heavy loads.
- Driving in wet or muddy conditions.
- Maneuvering and turning in and out of rows.
- Reversing with trailer.
- Safely operating around pickers and in loading area.

When interviewing new forklift or tractor drivers, consider giving them a practical competence test to ensure they have the right skills for the job.

Know what picking machinery you will need

The kiwifruit harvest requires specialised machinery. This is a time when tractors and trailers that are not used throughout the year swing into action. It is therefore important to plan for what machinery you will need for the harvest and ensure the machinery is fit for purpose, safe and well maintained.

Avoid using old, poorly maintained machinery as these could pose a significant safety risk and interrupt the smooth running of the harvest. Only use grower owned machinery if you are confident that it is safe to use, and that the grower understands the liability they take with providing that machinery. Take time to ensure team members are shown how to use it.

It is important to select the right machinery for the pick. To help you make this decision, refer to the useful information section at the end of the guide for an overview of the pros and cons of commonly used machinery.



SCAN THESE QR CODES OR CLICK THE BUTTON TO ACCESS USEFUL TRAINING RESOURCES:



Forklift Driver Training and Certification 



Tractor Driver Training Providers 



Paying the team

Choosing the best payment option:

Picking fruit is a physically demanding and tiring job, and as it's a short season, many pickers are expecting to earn a good income over a short period of time. This means that payment rates are a big incentive to attract and keep good pickers. Having a transparent and fair payment approach helps with team morale, as people like to know they are being paid fairly for the work they are doing.

The two common payment options used for pickers are hourly rate and contract or bin rate. Regardless of the payment structure, it is important to ensure your staff are always paid at least minimum wage.

Refer to the table in the useful information section at the end of the guide for more detail on the different payment options for pickers. In addition to paying pickers fairly, some contractors use incentives to encourage or reward good practice.

Note that the use of penalties or unpaid time-outs to manage repeated poor picking technique contravenes the Employment Relations Act 2000. Retraining is the appropriate way to manage this issue.

Create a positive team environment

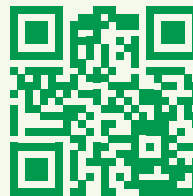
Being well organised, communicating clearly and giving recognition will go a long way to help foster a positive working environment.

- Have a clear communication process with the team to give them updates about upcoming work, locations, start times and expectations of the pick.
- Ensure the team know how and when they are being paid and if there are changes.
- The supervisor has a key role to play in fostering a positive team. Recruit the right person and support them by ensuring they are well trained.

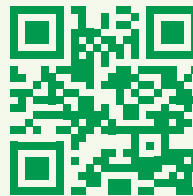
- Consider the structure of teams and try to put like-minded people together.
- To encourage loyalty show loyalty. Spread the workload fairly amongst your pickers.
- Be clear on what is expected from the team, start by demonstrating what is expected and reinforce this with regular updates.
- Provide positive feedback when it is earned and deal with issues promptly. Give team members the opportunity to improve by providing further guidance or training.
- Consider ways to motivate the team above and beyond monetary incentives. A little goes a long way, such as providing meals on some of the days or ice blocks on a hot day.



SCAN THIS QR CODE OR CLICK THE BUTTON TO ACCESS USEFUL TRAINING RESOURCES:



Communicating
with Teams



Supervisors -
Harvesting &
Views On Payment
Structures Video





JUST BEFORE THE ORCHARD HARVEST

THIS SECTION EXPLAINS THE KEY ACTIVITIES RELATED TO THE START OF HARVEST SEASON UP TO THE START OF PICKING.

To get ready for harvest, make sure you have:

- ✓ Clarity on the harvest date, the area and type of pick
- ✓ Prepared the site and set up a loadout pad
- ✓ Confirmed the harvest team size

1. CONFIRM THE HARVEST DATE, AREA AND TYPE OF PICK

Get confirmation from the grower on the date to start picking. The grower will make the decision about when to harvest based on factors such as the weather, fruit test results, incentives and discussion with their post-harvest entity.

The grower will also obtain a CTP (Clearance to Pick) document.

Before starting to harvest, check that you are clear what area to pick. If not all blocks are being harvested, ensure you get an orchard map to clearly show which block and rows you should harvest. Double check this map with the grower when you arrive on the site.

Confirm with the grower the best way to harvest the crop. The fruit test results will give you a better indication of what the fruit looks like. For more information on tricky picks and select picking refer to the next section.

2. PREPARE THE SITE AND SET UP THE LOADOUT PAD

Being organised and prepared is key to a smooth harvest. You should be given access to the harvest area a few days before picking starts so that you can prepare and set up the site.

Set up the loadout pad

The loadout pad is an important space during harvest and a busy place with trucks, tractors and forklifts operating and bins being stacked. Health and Safety should therefore be front of mind in setting up and using the loadout pad.

The loadout pad must be large enough for the number of bins and the number of machinery that will use it during harvest. A small or poorly maintained loadout pad can be dangerous, and also slow down machinery turnaround and ultimately picking.

A few suggestions to ensure you manage the loadout pad properly:

- ✓ Create the traffic management plan for the site. The plan should clearly identify traffic routes and flows, speed limits, no go zones, bin storage areas, pedestrian zones and first-aid locations.
- ✓ Have a team member in charge of the plan to ensure the safe and smooth movement of machinery and people in the area. Larger operations may need a dedicated loadout supervisor.
- ✓ Make sure tractor and forklift operators know the plan showing the routes they can drive and where they should park for loading and unloading.
- ✓ Set speed limits and stick to them. Limit pedestrians to only those who need to be there. Keep pickers away from the loadout pad where possible.

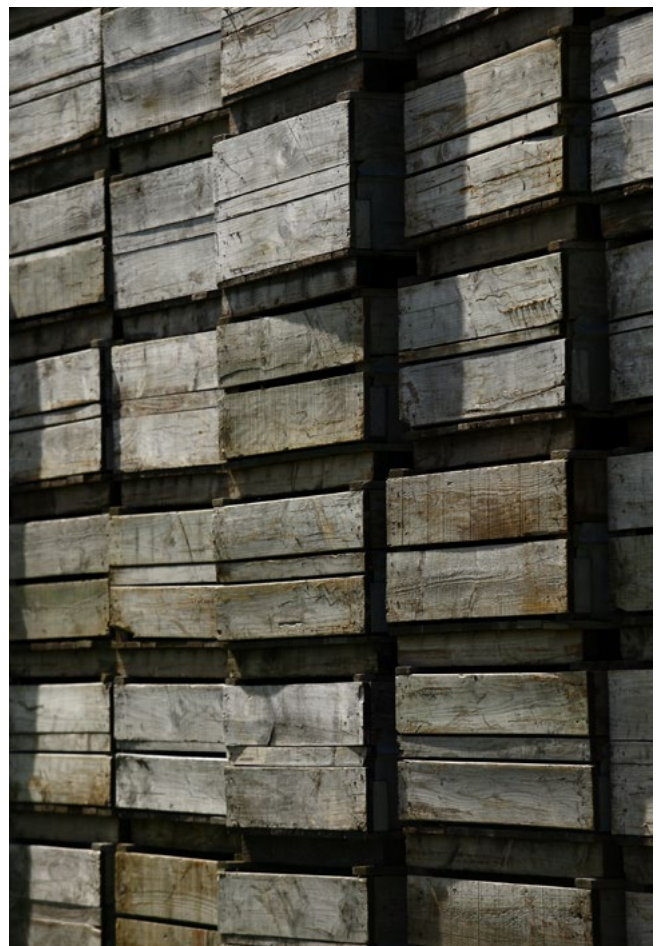
- ✓ Keep the sign-in or briefing area away from the loadout pad.
- ✓ Machinery should arrive at the orchard ahead of the picking team.
- ✓ Empty bins will be delivered to the loadout pad. Once briefed on the job and health and safety, the forklift drivers can unload and stack the bins.
- ✓ Remember to confirm who will bring the bin cards to the site and when, and check that they are correct for the area to be picked.

3. CONFIRM HARVEST TEAM SIZE AND ROLES

Once the size and type of pick has been confirmed, you can finish setting up the harvest team. Picking teams vary in structure depending on the type of job or harvest as well as how many sub-contractors you use.

Let the team know when to be on site

Provide the location of the orchard and where to park. Let them know about the pick, especially if it's challenging or a select pick. Keep them informed of any changes in payment rates and if they should read or watch any training materials before arriving on site.



AN EXAMPLE OF A LOADOUT PAD



KEY

- 5** 5km/h in the loadout pad
- 20** 20km/h on the road
- No pedestrians** No pedestrians
- Hazardous zone** Hazardous zone
- P** Parking Lot
- ⌘** Rest/break area
- +** First aid





HARVEST DAYS

THIS SECTION DETAILS THE ACTIVITIES FROM THE START OF HARVESTING. IT ALSO PROVIDES DETAIL AROUND DIFFICULT PICKS, FACTORS THAT COULD IMPACT THE SPEED OF THE PICK, AND HOW TO MAKE THE MOST OF YOUR GEAR SUCH AS HARVEST BIBS OR APRONS.

To have a successful pick, make sure you:

- ✓ Hold a daily team briefing
- ✓ Use picking gear to assist picking
- ✓ Monitor picking technique and quality
- ✓ Know how to tackle tricky picks

1. BRIEFING THE TEAM

The daily briefing is an important event to provide the team with essential information and ensure they are fully prepared for the pick. It is also a good opportunity to remind pickers of the important role they play in getting high quality fruit to market.

Getting ready for the briefing:

- Set the briefing area up in a safe place. Have a sign-in system ready for arriving pickers. This could be pen and paper-based, or using an app such as Onside.
- A whiteboard is useful for posting key messages for the team, sticking up training posters and highlighting health and safety reminders.
- Ensure all team members, especially those on the loadout pad, are aware of the machinery moving around them. Team members should not be looking at or talking on their phones and should not be wearing headsets.

As pickers arrive ensure they are signed in and all attend the briefing.

The briefing is a key part of the day and should include information on:

- Site map showing the location of the toilets, handwash station, drinking water and break areas, loadout area and traffic management plan.
- What the pick entails – how large the area is that you are picking and how many bins you expect to pick today.
- The area to be picked and where not to pick.
- How many pickers and tractors are onsite for the job and how the harvest will run. Specific details of the crop and crop issues such as hail damage or softs.
- If gloves are being used.
- Who to go to if feeling unwell or in need of first aid.
- When and how long breaks will be.
- Approximate finish time and whether the plan is to move to another orchard once finished.
- Health and safety – general reminders such as machinery and being sun safe. Site specific hazards as highlighted by the grower and on the orchard map.
- Introduce the grower if they are at the briefing.
- Reinforce good picking practice - take time to remind the team of the hard work that has gone into growing this crop, the importance of good picking and the damage that can be done through bad practice. Take a few minutes to demonstrate what you mean by good picking practice to remind them what you expect and talk about the consequences of poor fruit handling. It is helpful to have some photos of fruit damage on the whiteboard to refer to.

2. PICKING GEAR

In addition to the machinery used in picking there are several bits of gear that are essential to harvest.



Picking Bags

Every picker should be given a clean bag. Make sure pickers know how to fit their bag correctly. A poorly fitting bag is likely to cause unnecessary strain on the picker's body as well as affecting the quality of their picking.

Bags need to be kept clean. Fruit juice from a soft fruit can contaminate other fruit. If the bag gets fruit juice on it then stop using it immediately. Swap it for a clean bag and ensure someone cleans the dirty bag with water.

Keep bags short to reduce fruit damage. Encourage pickers to keep bags light so they can lift over the edge of the bin for emptying and prevent back strain. There is no difference in overall picking speed if more trips are made to the bin with smaller loads.

Bag attachments are available for specific situations:

1. Picking bib/aprons. These are useful to ensure fruit are placed in bags correctly during the pick.



2. Picking bag liners. Keeps the bag clean and are easily replaced if there is juice in the bag, instead of having to clean the bag.

Gloves

Cotton gloves are often worn for picking kiwifruit to prevent fruit damage from fingernails and to protect hands. Gloves are not mandatory.

Pickers may be asked not to wear gloves if there are soft fruit in the orchard. Bare hands can give the picker a better feel of the fruit so they can discard them and avoid juice contamination.

Gloves must be changed immediately if they get fruit juice on them.

Fruit juice on gloves is transferred to other fruit and causes non-pathogenic fungal growth (NPFG) to grow on fruit in the coolstore, this is an ugly lack marking and can result in an entire pallet of fruit having to be discarded.

If gloves are not being worn, then pickers need to understand the damage that they can do to fruit with fingernails or jewellery (rings and watches). Fingernails can puncture or scrape fruit, and the physical damage can lead to rots developing in coolstore. Pickers should keep fingernails short and must not wear jewellery during harvest.

Other picking gear

Consider personal protective equipment. For pickers this may include encouraging them to wear long sleeves, hats and sunscreen, and safety glasses.

Machinery operators and anyone around the loadout pad should wear boots with reinforced toes.

To aid visibility everyone should wear Hi-Viz clothing. Using different colours for people with different roles helps to make key staff identifiable.

3. PICKING TECHNIQUES

Use the video training resources to demonstrate good picking techniques, correct bag management, and how to identify soft or unsuitable fruit.

They are available in several languages.

4. FACTORS THAT COULD IMPACT ON THE SPEED OF THE PICK

Pickers should aim to pick at speed but not to the detriment of fruit quality. There is no target or expected rate of pick (bins/hr) as the speed will vary depending on factors such as:

- Variety of kiwifruit - Green, Gold3 and Red19 each may require a different picking technique for optimal fruit quality.
- Orchard terrain and access.
- Fruit presentation - fruit hanging high in the canopy and hidden by leaves is harder to pick. It's also quicker if the orchard has been thinned to remove unwanted fruit.
- Yield – high yield orchards are faster to pick when fruit is spread evenly rather than in bunches.
- Fruit size – it takes more small fruit to fill a bin than large fruit.
- Crop condition – if there are issues such as soft fruit or stalks snapping, the team will work slower as more careful handling is required.
- Orchard layout – machinery turnaround is affected by distance to the loadout pad. Under-vine shelter can slow down pickers as movement between rows is limited.
- Select picking – pickers may move slower to select the right sized fruit, or avoid damaged fruit such as hail damage.

Based on these factors 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.



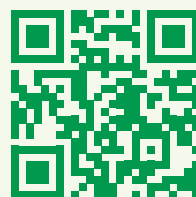
SCAN THESE QR CODES OR CLICK THE BUTTONS TO ACCESS USEFUL TRAINING RESOURCES:



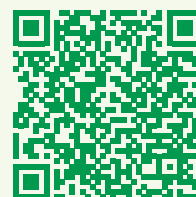
Picking Gear
Training Video



Gloves, Bags and
NPFG Research
Summary



Correct picking
techniques



Picking
Practices Posters





JEWELLERY MUST NOT BE WORN DURING HARVEST – RINGS CAN DAMAGE FRUIT AND JEWELLERY DROPPED IN BINS IS A FOOD SAFETY RISK!

5. TRICKY PICKS

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

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

! LOW DRY MATTER

Issue:

Low dry matter fruit cannot be sold. So a strip pick is expensive due to number of rejects if the number of cleared sizes is small.

Options:

Use the crop size profile to decide which is most economic

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

! 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 damage and fruit rot.**

Options:

Ensure the pickers are briefed.

Demonstrate the best technique to avoid snapping and how to 'rub-off' the short stalk if it does snap.

The picking supervisor should watch for short stalks at the bin, remove the stalks and any damaged fruit that can be seen. They should also help correct picking technique.

! SOFT EXPLOSIVE FRUIT

Issue:

Soft fruit should be kept out of the bag and bin. **Juice from one soft fruit can contaminate 68% of the fruit in a picking bag.**

It creates NPF (non-pathogenic fungal growth), which is an ugly black marking on the fruit and leads to fruit being 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:

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

During picking immediate action is the key!

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

- Wash hands immediately if they get juice on them.
- Clean contaminated picking bags immediately.
- Change gloves immediately.
- Use replaceable bag liners or wash bags immediately.
- Supervisors should watch as bags are emptied for any signs of soft/explosive fruit or fruit contaminated with fruit juice and remove these from the bin.

Use self-audits to monitor.

! DAMAGED FRUIT – HAIL, FROST

Issue:

Before harvest the grower should have had the orchard assessed and will make a plan with you on how to harvest.

Options:

- If there is a high level of visible damage, dropping the fruit is recommended before harvest.

- If the amount of damage is small, but visible, then pickers should be advised not to pick it or to drop it to the ground if they see it.
- Include as part of the pre-pick briefing and should be monitored by the bin supervisor.
- These harvests may require a revision of the payment method.

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

! WET GROUND

Issue:

This is a key health and safety issue.

Fruit that gets contaminated by water or dirt is a food safety risk and cannot be sold. Include the Post-Harvest and Zespri teams if the orchard has been flooded. You should be informed before the day of harvest so that you can plan equipment appropriately.

Options:

Use 4WD tractors.

Discuss tractor travel routes to avoid slippery areas and options to change the route during the day to avoid creating excessive mud.

Only use experienced tractor drivers. Make them aware of wet areas and review how to handle the conditions.

Cover bins with a tarpaulin to stop mud flicking into empty bins or over fruit.

! SLOPES

Issue:

Slopes create a tipping and breaking issue especially once bins are full.

Options:

Use 4WD tractors for safety.

Reduce trailer's weight by using empty bins if needed.

Watch for bin movement on trailers.

Only use experienced, trained tractor drivers.

Plan routes to avoid slopes where possible.

! LOW CANOPIES OR DAMAGED STRUCTURES

Issue:

Health and safety hazards should be rectified before harvest.

Options:

Clearly mark areas with Hi-Viz warning tape and clearly marked on the orchard map ready for the pre-pick briefing.

Tractors should avoid rows with damaged structures.

If possible, avoid sending tall pickers to low canopies.

! 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 NZTA / Waka Kotahi. This should be arranged before harvest.

Options:

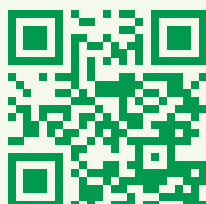
Avoid the use of four-bin trailers where small headlands are an issue.

The grower or orchard manager may make an agreement with a neighbour if the loadout area is too small.

A Traffic Management Plan needs to be registered with NZTA / Waka Kotahi if you are using the road.



SCAN THE QR CODE
OR CLICK THE
BUTTON TO ACCESS
USEFUL TRAINING
RESOURCES:



Gloves, Bags and
NPFG Research
Summary



6. MONITORING PICKING QUALITY (SELF-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 industry audit structure for kiwifruit harvests and different post-harvest entities and harvest contractors use different audit systems.

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

- Picking practices
- Quality of fruit reaching bins
- Transfer of fruit to bins that doesn't damage fruit
- 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 corrective action can be put in place.

There are three types of harvest audits:

1. Post-harvest audit – auditor visits during picking.
2. Internal audit – harvest contractor does their own audit to assess team performance and identify issues early.
3. Audit of fruit arriving at post-harvest during packing - 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.

As a contractor it is recommended that you do some audits yourself (internal audits), rather than rely on the post-harvest auditor only. This will ensure issues are picked up early and corrective actions put in place. Scan the QR code below for self-audit templates available on the Zespri Industry Site.

7. SELECT PICKING

Select picking is where only a portion of the crop is harvested. There are three main situations where a grower may choose to select pick:

1. To achieve a financial incentive, for instance KiwiStart, (typically Gold3).
2. Before the large fruit get too soft.
3. To spread the risk of harvest by harvesting some fruit early.

As select picking is more specialised, growers should communicate with you ahead of the picking day if they need a select pick. You may need to change the picking team, team setup and payment rates for select picking.

Communicate to your team that the orchard is select pick and what sizes are to be included and if any change in pay conditions if this has been agreed. You may have

decided to move from a contract rate to an hourly rate, acknowledging that select picking is slower and giving you more control of speed.

Give clear instructions to the pickers at the briefing. Show them the sizes to be picked. It is also a good idea to get them to hold the fruit so they can get a feel for the size and weight. Some teams do this for the first hour until pickers get their 'eye in'.

Additional supervision is often needed to help monitor the pick. A team of 10 – 12 pickers should have two people at the bins with scales. They can weigh the small pieces of fruit that arrive at the bin and provide feedback to the pickers as to the sizes that are being picked.

It is sensible to use a size buffer to avoid picking too much undersize fruit, for example if the crop is cleared to Size 30, the team may be asked to pick to Size 27. Make sure this is agreed with the grower before starting the harvest.



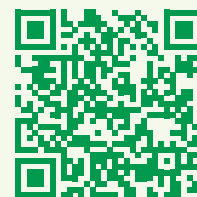
TIPS ON DRIVING TRACTORS

The tractor is a key piece of harvest machinery and it is important to operate it safely. Here are some tips that could help the tractor drivers in your team:

- ✓ Keep speeds low and do not exceed 20km/h on the orchard and 5km/h around people.
- ✓ Drive to the conditions. Reduce speed if tracks are rough, slippery or sloped. If the trailer is bouncing – slow down!
- ✓ Bouncing fruit whilst transporting can cause bruising, which later leads to defects in storage. Smooth tracks and lower speeds can reduce the risk of bruising fruit.
- ✓ Drivers must let the operations manager know if they feel unsafe when driving in an orchard.



SCAN THIS QR CODE OR CLICK THE BUTTON TO ACCESS THE SELF-AUDITING TEMPLATE



Zespri Industry Site







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

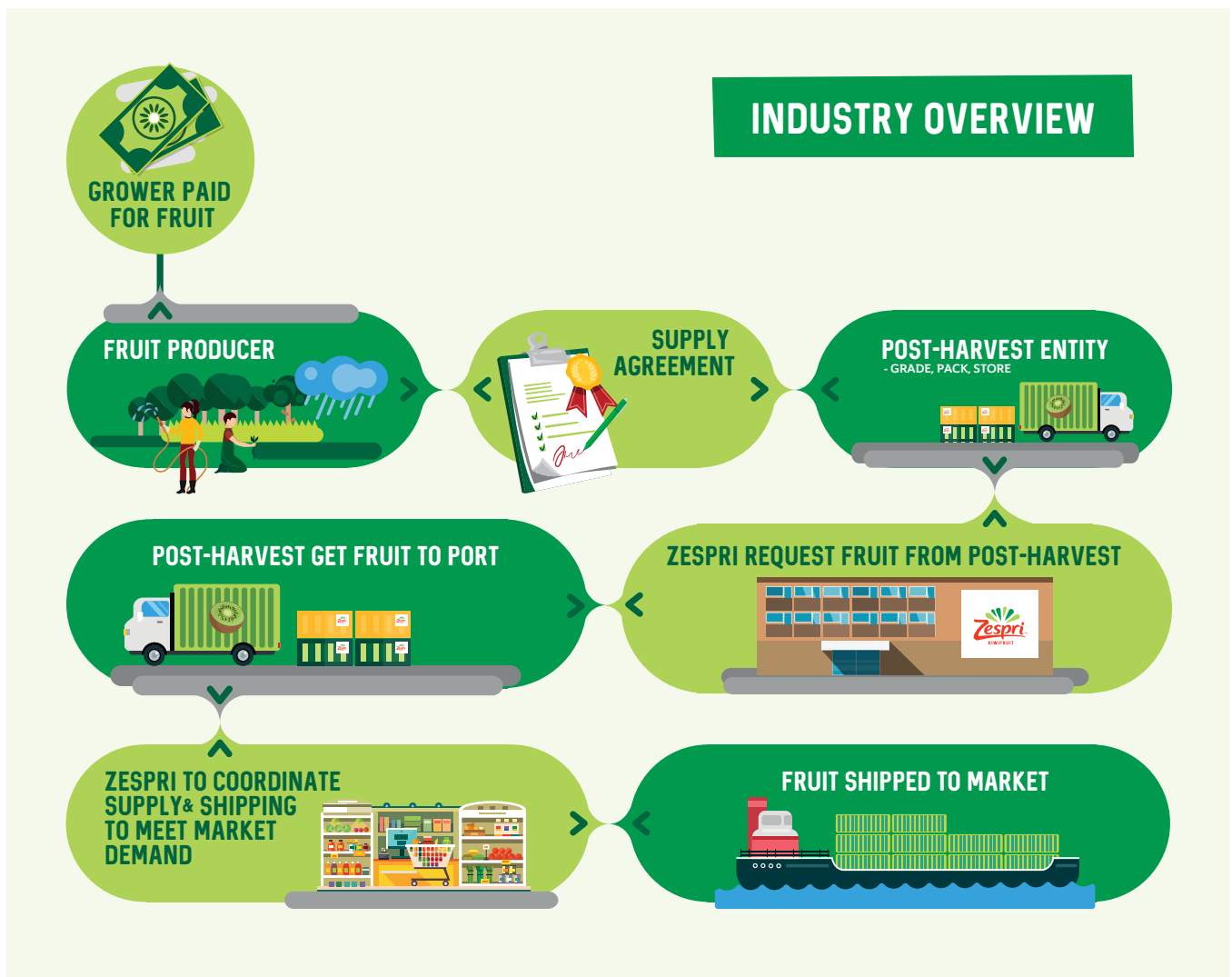
The kiwifruit industry is made up of the following groups:

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

- **Post-harvest entities** – manage the packing and storing of fruit. There are several post-harvest entities in New Zealand.

Growers enter into agreements to supply fruit to post-harvest entities. The post-harvest entities 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.

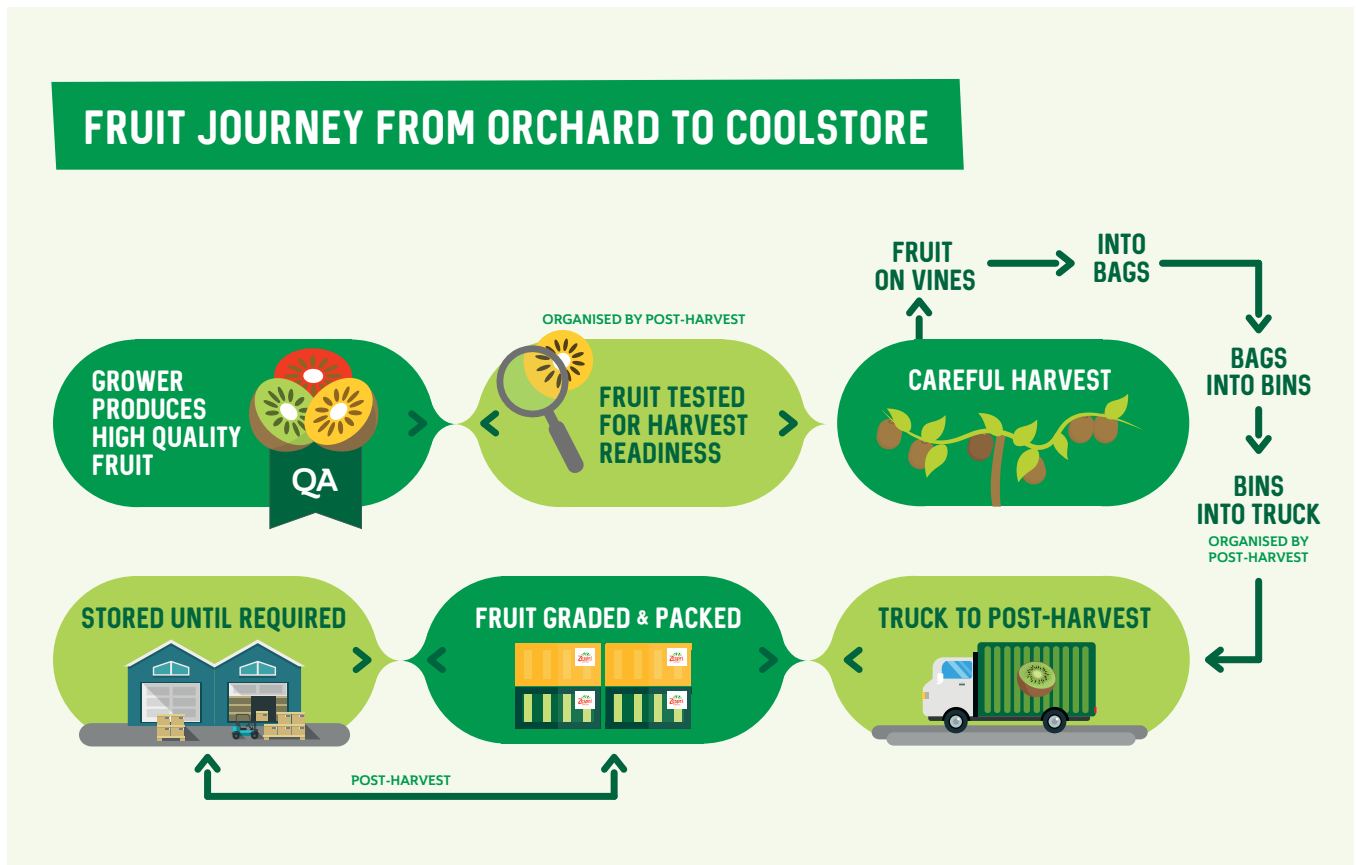
The fruit on orchards reach harvest maturity at different times throughout this period, depending on management practices used on the orchard and environmental conditions. The first crops ready to harvest are Red19, followed by Gold3 and Hayward.

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

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:

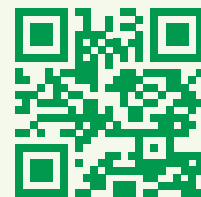
- Used to encourage good practice.
- Paid in addition to reward good work.

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.

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 – some with and some 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, view this video: Transtak 1500L Soft Ride Bin Trailers Operating in Kiwifruit - scan the QR code on this page.

Pros:

- Less machinery is required and less machinery to move between orchards.
- Fewer tractor drivers using more specialist skills.
- Safer as tractors are not amongst the pickers.
- Can provide a smoother ride for the fruit and may reduce fruit damage.
- Bins are on the ground, so it is easier on 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 THIS QR CODE OR CLICK THE BUTTON TO ACCESS USEFUL TRAINING RESOURCES:



Soft-Rider Video



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.

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.

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

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

Post-harvest facility – a post-harvest entity may have multiple facilities. Facility is used to refer to an individual packhouse or coolstore site.

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.





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