



# Avocado Growing and Packing

## A Practical Safety Guide

© Australian Centre for Agricultural Health and Safety  
All rights reserved

Title: Avocado growing and packing - A practical safety guide  
Authors: J Temperley and T Lower

ISBN:

The views expressed and the conclusions reached in this publication are those of the authors and not necessarily those of persons consulted. Avocados Australia and the Australian Centre for Agricultural Health and Safety shall not be responsible in any way whatsoever to any person who relies in whole or in part, on the contents of this report.

This safety guide is copyright. However, Avocados Australia and the Australian Centre for Agricultural Health and Safety encourage wide dissemination of this product providing that the organisations are clearly acknowledged. For any other enquiries concerning reproduction, contact ACAHS by phone on 02 6752 8210.

ACAHS contact details:  
Australian Centre for Agricultural Health and Safety  
University of Sydney  
P O Box 256  
Moree NSW 2400

Tel: 02 6752 8210  
Fax: 02 6752 6639  
Email: [aghealth@health.usyd.edu.au](mailto:aghealth@health.usyd.edu.au)

Published in March 2014  
Revised February 2015

This Practical Safety Guide is a project funded by Avocados Australia.

## Table of Contents

<b>1. Introduction</b> .....	<b>1</b>
1.1 This Safety Guide – its purpose .....	1
1.2 Health and Safety - Growing, Picking and Packing Avocados .....	1
1.3 Legal Obligations .....	2
<b>2. Finding and Fixing Safety Problems</b> .....	<b>3</b>
<b>3. Hazards, Risk and Controls</b> .....	<b>6</b>
3.1 Growing and Picking Avocados .....	6
3.2 Pesticides and Spraying .....	13
3.3 Packing Sheds - designing for safety .....	14
3.4 Traffic Flow - access to work and movement around the packing shed .....	16
3.6 Handling Bulk Produce .....	23
3.7 Grading, Sorting and Packing .....	24
3.8 Post-Harvest Treatments .....	26
3.9 Forklift Operation .....	28
3.9 Cool Rooms and Controlled Atmosphere Storages.....	31
3.10 Loading Areas .....	33
3.11 Machinery Maintenance .....	33
3.12 People at Special Risk .....	34
3.13 Emergency Preparedness .....	34
<b>4. Further information and important contacts</b> .....	<b>36</b>

# 1. Introduction

## 1.1 This Safety Guide – its purpose

This safety guide aims to provide practical safety information for avocado growers to ensure the safety of those who work growing and packing avocados. It is accompanied by a range of resources for growers to manage Work Health and Safety (WHS) on their farm or packing shed.

The document provides an overview of the hazards and risks associated with avocado production and practical guidelines on how to implement effective WHS controls. These controls will not only reduce safety risk, but will also assist growers to meet their regulatory requirements.

Avocado growers and packing businesses should use this document in association with the *Managing Health and Safety in the Avocado Industry* risk management package – a practical management tool for implementing WHS in the workplace. These resources are available from Avocados Australia and the Farmsafe Australia website [www.farmsafe.org.au](http://www.farmsafe.org.au).

The resources have been prepared under the direction of a reference group established by Avocados Australia and the Australian Centre for Agricultural Health and Safety, comprising of growers and representatives of Avocados Australia.

## 1.2 Health and Safety - Growing, Picking and Packing Avocados

People working in the avocado industry are exposed to risks of injury associated with a range of hazards, some are specific to avocado production and others are common across agriculture and horticulture.

Hazards associated with production of avocados and horticultural produce include:

- Mechanical hazards - associated with machinery and transporting produce and workers (tractors, quads, utilities), hand-tools (chainsaws, secateurs, knives) associated with manual handling in the field and in packing sheds
- Biological hazards - moulds, saps and infectious diseases e.g. leptospirosis, legionella
- Chemicals - insecticides, fungicides and herbicides
- Dust
- UV and solar radiation - working outdoors in heat and sunlight
- Electricity
- Noise - causing hearing loss and tinnitus
- Stress and fatigue

The types of injury range from death, serious injury requiring hospitalization and downtime, to “nuisance” injury that stops work for a short time, or makes work slower and reduces productivity.

### 1.3 Legal Obligations

All states and territories with the exception of Victoria and Western Australia, have adopted harmonised model WHS laws. However, irrespective of this variation the fundamental obligations are similar in all jurisdictions. Employers or a Person Conducting a Business or Undertaking (PCBU), have responsibility for the safety of all people working (employees, contractors and visitors). In addition, all people have responsibilities to reduce the risk of injury and illness associated with work.

Responsibilities of a *PCBU or Employers* include:

- Involving and consulting with workers to implement and manage their health and safety
- Providing a safe workplace and organising safe systems of work
- Maintaining work areas, machinery and equipment in a safe condition
- Assessing health and safety risks to workers and others in the workplace and implement effective risk controls i.e. eliminate the hazard where reasonably practicable
- Providing information, training, instruction and supervision to workers on safe work and using machinery safely
- Ensuring safe use, handling, storage and transport of dangerous goods and hazardous substances
- Providing adequate facilities for the welfare of workers
- Planning for emergencies
- Ensuring the effective rehabilitation and early return to work of injured workers.

*Workers (employees and contractors)* also have responsibilities. Workers:

- Must co-operate with management in their efforts to comply with health and safety obligations
- Report hazards in the workplace
- Follow all reasonable safety instructions given to them, and
- Work safely so they are not injured and not to cause injury to others at work.

*Manufacturers, designers and suppliers* of plant, machinery and hazardous substances for use by people at work, must make sure that they are safe and without risks to health when properly used. They must also supply adequate information to ensure its safe use.

Each of these WHS obligations must be met in the business and on each individual farm.

## 2. Finding and Fixing Safety Problems

The key steps that must be set in place to manage WHS risk are:

### **Involve your workers - Consultation**

There must be ways for workers to actively participate in the management of WHS in the business. How the PCBU, employers and managers involve workers will differ, some methods may include:

- Regular meetings (toolbox talks or more formal meetings) where safety issues are discussed and resolved
- Safety committees and safety representatives who are nominated to have specific responsibility for liaison between workers and the PCBU /managers

Whatever system is in use, it is essential that there is a clear commitment to safety by the owner, manager and workers and that this is obvious by their safety behaviour and daily farming activities conducted by employers and workers.

### **Look for unsafe conditions and unsafe practice - Hazard identification**

Safety hazards must be identified systematically. This means that farmers, managers and workers must identify those jobs and situations that may cause injury or illness, not only to people working (including contractors), but also to bystanders and visitors.

Hazard identification should be ongoing and be carried out:

- At least annually, or
- When systems are changed - new equipment is purchased, facilities and/or work practices are changed

All workers should be actively encouraged to report anything that could be considered hazardous to their health and safety - any unsafe condition, or unsafe action needs to be identified and steps taken to make the system safe.

### **For each hazard, consider the likely outcome - Risk assessment**

Risk associated with each hazard must be assessed in terms of the severity of the potential harm that could occur and the likelihood that such an outcome could occur - generally greater if workers are frequently exposed to the hazard.

### **Control risk using the hierarchy of control approach - Risk control**

Risks must be controlled to prevent injury. The *hierarchy, or order of effectiveness*, is as follows:

#### ***Eliminating hazards***

Where reasonably practicable, hazards must be eliminated, or removed from the workplace. This is obviously the most effective way to reduce risk. While it is often not possible to eliminate a hazard, WHS regulations require employers to use this option, where reasonably practicable. If it is not possible, then the next most effective solution should be sought and put in place.

***Substitution for a hazard of lesser risk***

Where it is not possible to eliminate a hazard altogether, consider whether the hazard can be substituted for something that will do the same job but is less risky.

***Isolation of hazard from worker and other engineering controls***

In most hazardous situations it is possible and practicable to improve the design of work and/or isolate the worker from the hazard. This is the basis of most of the safety improvements that should be put in place by horticultural enterprises to reduce risk of injury as well as to be compliant with OHS regulations.

***Administrative controls***

Administrative controls include Safe Operating Procedures or rules, organising work in such a way that reduces risk, giving safety induction and training to workers, supervising unskilled workers and providing safety information to workers about the safety risk associated with the work to be done and how these risks can be minimised.

***Personal Protective Equipment***

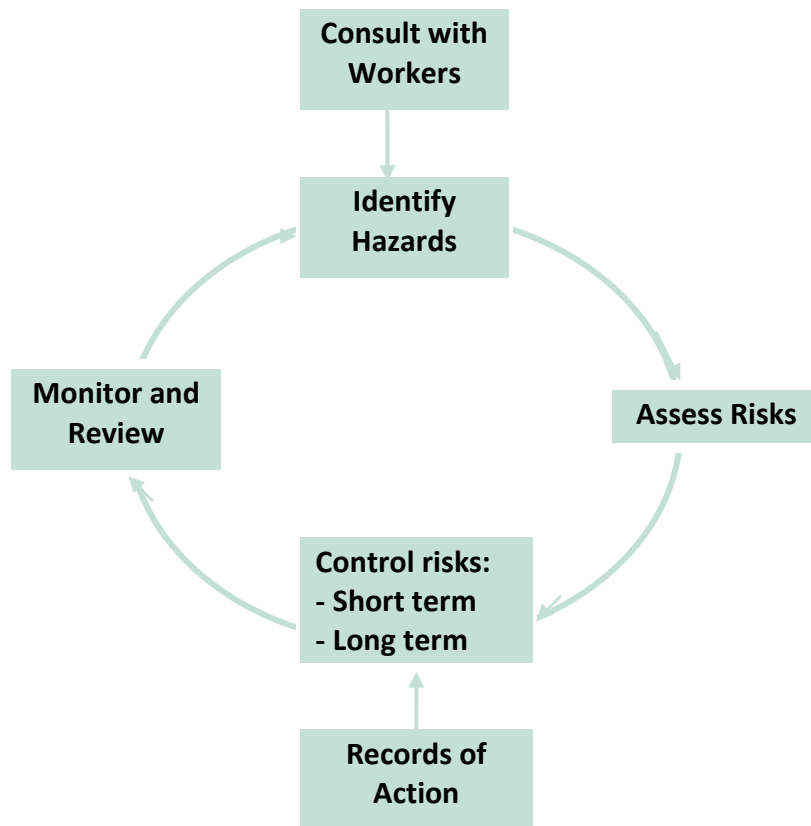
Personal Protective Equipment (PPE) must be provided and used where workers cannot be protected from a hazard by a control measure higher up the order. This includes providing helmets to protect from head injury for motorcycle riders and quads.

These guidelines suggest the higher order controls in the first instance, with the lower order, less effective controls depending on individual behaviour lower in the list. In practice, best practice WHS risk management will require a mix of controls for high risk hazards.

***Record Keeping - Keep written records of your WHS management***

Keep records of all your WHS plans and activities. It is very important to monitor progress and to provide proof demonstrating your proactive management and prevention of work health and safety issues - records must be kept.

These are not steps to be taken on a once-off basis. The process would be better illustrated in this way:



These steps should become a key part of managing health and safety of workers in the business.

Successful businesses invest significantly in WHS in terms of time, money and commitment at all levels. These businesses understand that overall performance of the business benefits from good WHS practice.

These businesses do not accept that the major responsibility for workplace health and safety rests in the workers themselves, rather the opposite - that safety is a key management responsibility and involving workers and contractors is a critical management skill.



### 3. Hazards, Risk and Controls

#### 3.1 Growing and Picking Avocados

Design and layout of the orchard is important for safety. Designing the orchard for safe access of vehicles and machinery; removing overhead power lines (where practical); avoiding very steep terrain, creeks and dams; having good access roads to the farm and packing sheds that allows room for traffic and movement of sprayers, tractors, vehicles and people.


The key hazards are associated with the use of:

- Tractors and PTO powered machinery
- Slashers, mulchers and wood chippers
- Cherry pickers (elevating work platforms) and ladders
- Chainsaws, mulchers and wood chippers
- Pesticides and spraying
- Vehicles (trucks, utes, motorbikes, quads and side by side vehicles)

Death can occur from crush injury of the head, trunk, arm or leg. This happens when the operator, passenger or bystanders are:

- Crushed under the tractor during rollover.
- Crushed between the tractor and implement or a passenger falls off the tractor and is runover.
- Entanglement with PTO driven attachments and shafts usually result in serious injury, if not death, including:
  - Crush injury
  - Amputation of arms and legs
  - Severe twisting of body parts
  - Dislocation of joints
  - Laceration
- Runover by moving machinery, especially when reversing. Other non-fatal crush injuries may also occur.

Hazards and Risks	Risk Controls
<b>Tractors and PTO Powered Machinery</b>	
Injuries associated with tractor rollover result in serious crush injury and death of the operator and passengers.	Ensure that all tractors are fitted with a cabin or Roll Over Protective Structure before they are used.  Fold down ROPS should always be raised when tractors are being used outside the orchard and only lowered where branches interfere with tractor safety.
Entanglement of limbs is associated with unguarded PTO drive shafts on PTO driven implements such as slashers, wood	Check that all PTO shafts are fitted with a functional PTO shaft guard. Replace all worn or damaged guards before PTO driven

Hazards and Risks	Risk Controls
chippers, spray units, irrigation pumps and hydraulic pumps fitted to tractors.	<p>implements are used.</p> <p>Make sure the machinery is turned off with the key removed before servicing or cleaning any tractor and PTO powered attachments.</p>
<p>Operators are at risk of hands, arms and loose hair becoming entangled in unguarded engine fan, alternator and air conditioning drive belts.</p>	<p>Ensure that the tractor engine bay is properly guarded.</p> <p>Replace all damaged engine guards and screens before using or starting the tractor.</p> <p>Make sure that the tractor is turned off before removing engine bay guards and servicing alternator and radiator fan/ water pump drive belts.</p> <p>Further information on tractor safety can be found in the safety guide <i>Safe Tractor Operation - a practical guide</i> produced by the Australian Centre for Agricultural Health and Safety and can be downloaded from their website <a href="http://www.aghealth.org.au">www.aghealth.org.au</a>.</p>
<b>Vehicles, Utes and Trucks</b>	
<p>Injuries are associated with people being injured when being carried as passengers, unrestrained in cabins or on the back of utes, trucks and trailers.</p> <p>There are also injuries from loss of control when driving on farms from poor vehicle maintenance, steep and slippery farm roads or vehicles being driven too fast.</p>	<p>To reduce the number of serious injuries and fatality on farms associated with vehicles:</p> <p>Make sure all drivers and passengers are wearing seat belts.</p> <p>DO NOT carry passengers on the back of utes, trucks or trailers.</p>
	<p>Ensure vehicles are not overloaded and that all loads are properly restrained.</p> <p>Ensure that all vehicles are regularly maintained and especially that brakes work well, and</p> <p>Maintain farm roads. Establish 'NO GO' areas, set and enforce speed limits on farm to prevent loss of control, collision and roll over.</p>

## Hazards and Risks

## Risk Controls

### Quads, Side by Side vehicles and Motorbikes

Incidents involving quads are now the leading cause of injury death on Australian farms.

Most deaths are due to crush injury and/ or asphyxiation associated with quads rolling over, or by injury associated with the victim being flung onto a hard surface as a result of a crash.

Farmsafe Australia partners urge farmers to think carefully about their use of quads taking into account the safety risks.





To reduce the number of serious injuries and fatalities on farms associated with quads on farms, use a vehicle, ute or side by side vehicle to carry loads or passengers.

Specify jobs for when quads, side by side vehicles and motorbikes can be used.

Establish safety rules including:

- Routes to be used to get to worksites
- Establish “No-Go” areas and rules
- Enforce speeds at which the machines will be operated
- No passenger rules on quads
- No children to operate or ride on quads
- Ensuring riders are wearing helmets and necessary PPE when riding quads and motorbikes
- Keeping the machines well maintained
- Have a good radio/ communication systems, and
- Emergency plans and procedures to manage personal injury on farm

Hazards and Risks	Risk Controls
<b>Cherry Pickers - Elevating Work Platforms</b>	
<b>Electrocution</b>	
<p>Serious injury and fatality associated with cherry pickers and elevating work platforms where workers being electrocuted when operating near or under power lines.</p>	
	<p>Designing orchards so that trees are not planted near overhead power lines.</p> <p>Relocate overhead power lines away from avocado trees to maintain a 3 metre exclusion zone away from power lines (up to 132 kV) when using mobile plant and machinery.</p> <p>Prune avocado trees that are near or under power lines to maintain a 3 metre exclusion zone for mobile machinery. or</p> <p>Maintain and use an authorised spotter when picking within 3 metres of overhead powerlines. Further information can be found in the <i>Electrical safety code of practice - Working near overhead and underground electric lines</i>.</p>
	

Hazards and Risks	Risk Controls
<b>Overloading</b>	
<p>Operators are at risk of injury when the Safe Weight Limit of the cherry picker is exceeded and the machine becomes unstable.</p>	<p>Purchase cherry pickers with a higher SWL and ensure that all pickers who operate them are properly trained and that the cherry picker is not overloaded.</p> <p>Do not exceed the manufacturer's SWL for the basket, including the weight of the operator and picking bags.</p>
<b>Falls and Crush Injury</b>	
<p>Workers have been thrown, fall or jump from unstable and toppling cherry pickers when operated on uneven or steep terrain, or are overloaded.</p> <p>Workers are at risk of falling from the basket when travelling on uneven ground or being crushed due to mechanical or hydraulic failure and the cherry picker boom collapsing.</p>	<p>Selecting cherry pickers that are designed or more suited for use in steep terrain with larger tyres will increase the stability of the cherry picker when they travel over wash outs, ruts, branches or holes and deep depressions in the ground that may cause the cherry picker to whip.</p> <p>Where it has been assessed that workers are at a higher risk of falling from a cherry picker, it is recommended that a safety harness is used to prevent the operator being thrown from the basket.</p> <p>To prevent toppling, reduce speed and transport the cherry picker with the boom lowered.</p>
<p>Operators and bystanders are at risk of crush injury as a result of cherry picker booms collapsing due to mechanical and hydraulic failure.</p>	<p>Schedule regular inspection and service of pins, hinges, brake locks and hydraulic lines to reduce the risk of mechanical failure and injury to workers.</p> <p>Perform daily service and safety inspections recommended by the manufacturer to reduce mechanical failure and injury to the operator.</p> <p>Further information can be obtained by referring to the <i>Australian / New Zealand Standard 1418.10 Cranes, hoists and winches Part 10: Mobile elevating work platforms p. 689 and - Annex I p 68.</i></p>

There are also reports of loss of control when avocado's become lodged under foot controls, or hand controls are caught in branches when maneuvering cherry pickers within the tree canopy.	Keep cherry picker baskets clean of debris and fallen fruit. Make sure that hand controls are guarded or there is an emergency stop to shut down the machine in an emergency.
Injury records report eye injury from sticks, insects and foreign bodies to the eye. Operators are at risk of eye injury from insects, tree branches and twigs.	Where there is risk of eye or head injury, it is recommended that eye and head protection and other relevant PPE are used.
Head injury has been reported where the operator or tree branch has inadvertently moved the picker basket in the wrong direction.	
Injury records report workers being injured from collision with other vehicles and cherry pickers reversing and running over bystanders.	Ensure that bystanders and other machinery are clear of cherry pickers when they are working in the orchard.
Workers also report spider bites, bee and wasp stings, some associated with anaphylaxis and allergic reactions.	Where workers report that they are allergic to insect bites and stings during safety inductions, ensure that there is a First Aid plan that includes anaphylaxis and other allergic reactions.
Workers picking and working outdoors in the sun are at increased risk of skin cancers from exposure to UV sunlight.	All outdoor workers should wear proper sun protection to prevent sunburn and limit UV exposure.
<b>Chainsaws</b>	
Workers using chainsaws are at risk of serious injury from kickback, falling branches, limbs and trees, eye injury, hearing damage and burns.	
Using a chainsaw that is not suited for the job (too small, large or not properly guarded and maintained), can lead to serious injury to the operator.	Purchase a chainsaw suitable for the job which you are going to use it for. Smaller light weight petrol or hydraulic powered chainsaws are more suited for use in cherry pickers.  Keep the chainsaw well maintained, sharpen the chain properly, check that chain brake and safety guards are fitted and are working properly.

Workers may be at risk of head injury from falling limbs and branches.



All chainsaw operators should be properly trained and never allow an inexperienced person to use a chainsaw.

Some chainsaw work, such as felling larger trees and cutting trees thicker than the bar guide length should only be done by a professional.

Wear Personal Protective Equipment and clothing such as cut resistant chainsaw pants or chaps, ear muffs, safety glasses or face shield, helmet, boots, and close-fitting clothing will prevent injury.

Refueling chainsaws with the engine running or when hot increases the risk of fire and burns to the operator.

Do not refuel a chainsaw while it is running. Before refueling a chainsaw, allow it to cool.

After refueling, move away from the refueling site. Drop starting a chainsaw is a dangerous practice.

### **Pruning**

Scissors, secateurs (both manual, electric and pneumatic) are associated with risk of cutting and crush injury, and hand, arm, wrist, elbow and shoulder pain and injury.

Ensure workers are trained to use pruning shears and that Repetitive Use injury is prevented.

### **Mulchers and Wood Chippers**

Operators feeding tree limbs and branches into wood chippers and mulchers are at risk of serious injury if caught by branches and/or tree limbs and being pulled into the machine and injured by exposed chipper and mulcher blades.

Ensure that mulchers and wood chippers are properly guarded with feeder control bars and an emergency stop bar that are working properly.

Many chippers are equipped with a mechanical feed control bar that activates the feed rollers when it is pulled. The bar is mounted across the top and along the sides of the feed chute.

Follow the manufacturer's safety instructions for operating and servicing mulchers and wood chippers.

Stress the importance of following the manufacturer's instructions for operating, inspecting and maintaining chippers.

Inform and train workers about the safety hazards and safe use of mulchers and wood chippers and ensure workers use safe work practices.

Eye and hearing injury is also associated with using wood chippers and mulchers.

Ensure that all workers are wearing PPE, including gloves, eye and hearing protection to help prevent injury. Keep bystanders away.

### 3.2 Pesticides and Spraying

Workers transporting, handling, mixing and applying pesticides and cleaning machinery are at risk of poisoning.

Hazards and Risks	Risk Controls
<b>Pesticides and Spraying</b>	
<p>Herbicides, insecticides and fungicides may pose risk of chemical exposure and poisoning for operators and bystanders during mixing, application, maintenance and clean down.</p>	<p>Select herbicides, fungicides and insecticides that have a low toxicity to operators.            Checking hoses and connections; replace those that are cracked and leaking to prevent operator exposure.</p>
	<p>Clean and wash down tractors and spraying equipment before maintenance to prevent workers coming into contact with spray residues.</p> <p>Use closed mixing and transfer systems to reduce operator exposure to herbicide, insecticide and fungicide spray mixtures.</p> <p>Use cabined tractors and spray equipment fitted with carbon/ activated carbon/ charcoal air filters to reduce exposure of the operator to the spray.</p> <p>Ensure that all people (including contractors) applying pesticides have been properly trained and have a current Chemical User Accreditation certificate.</p> <p>Follow the pesticide label safety directions when applying pesticides.</p> <p>After spraying, maintain minimum harvest and re-entry periods as described on the pesticide label.</p> <p>Provide and ensure that Personal Protective Equipment and clothing is worn as described on the pesticide label.</p>
<p>Operators are also at risk of entanglement associated with the operation of unguarded PTO driven spray machinery.</p>	<p>Ensure that PTO drive shafts are properly guarded, maintained and are in working condition.</p>



Hazards and Risks	Risk Controls
<b>Chemical Transport and Storage</b>	
<p>Exposure to chemicals can occur during transport and storage.</p> <p>Risk to users and bystanders may be associated with leaks or spillages that may occur during routine storage, use and handling containers. Such incidents also may arise in the event of a collision during transport, the load moving or drums rupturing.</p>	<p>All chemicals should be transported and stored securely in a locked shed as described on the pesticide label safety directions.</p> <p>Do not transport pesticides in a cabined vehicle with passengers. Use a trailer or utility.</p> <p>Use the required Personal Protective Equipment and clothing such as gloves, masks, waterproof clothing, fire fighting and accidental spill containment.</p> <p>State WHS and Pesticide legislation requires that records are kept for hazardous chemical stored or used in the workplace.</p> <p>Ensure that chemical Safety Data Sheets are available for workers handling all chemicals.</p>
<b>Rodent and Vermin Control</b>	
<p>Chemicals used for rodent control are usually of high toxicity and may have special handling and application requirements.</p> <p>Users are at risk of chemical exposure during preparing and laying baits.</p>	<p>Use pre-prepared baits. Handle and apply baits as described on the rodenticide labels.</p> <p>Ensure that Personal Protective Equipment and clothing, including gloves and respiratory protection, is provided and used as described on the pesticide label when handling and laying baits.</p> <p>If you use contractors to apply baits, use contractors that have been trained and have a current approved accreditation to apply rodenticide baits.</p>

### 3.3 Packing Sheds - designing for safety

One of the most important issues to consider when planning for safety in the packing shed is the overall plan and layout of the various sections and work stations in relation to each other. Smooth flow of produce, people and machinery traffic is not only more efficient it is generally safer for workers, contractors and other bystanders.

High risk injury and fatality includes:


- Entanglement in unguarded machinery and conveyors

- Electrocution
- Collision, runover and crush injury associated with forklift use
- Slips, trips and falls
- Entrapment in cool rooms
- Minimising packing shed workers exposure to pesticides where post harvest treatments are used to meet quarantine regulations is important.

Hazards and Risks	Risk Controls
<b>Packing Shed Design</b>	
<p>Cramped packing sheds, poor packing shed design and layout increases the risk of injury and chronic medical conditions associated with poor working conditions.</p> <p>Unnecessary handling of produce and packaging, exposure to noise, dusts, water, chemicals, electrical hazards and traffic all increase the risk of serious injury, especially collision between mobile plant and people working in the shed and other pedestrians.</p>	<p>Review the design and layout of the various sections and work stations in the packing shed, taking into account the flow of produce, materials, people and machinery (traffic).</p> <p>Consult with workers to identify potential hazards and improvements that could be made to packing shed layout.</p> <p>Consult with others in the industry that have good knowledge and are experienced in the design and layout of packing sheds to develop safer and improved ergonomic layout of the packing shed and work stations.</p> <p>Improved work height, lighting, layout, floor mats and floor surface will reduce ergonomic related injuries.</p>

### 3.4 Traffic Flow - access to work and movement around the packing shed

The safety of people should be ensured in planning and organizing the flow of traffic in and around packing sheds, including outdoor traffic such as trucks, quads, side by side vehicles and other vehicles, and indoor traffic such as forklifts and pallet jacks.

Hazard and Risks	Risk Controls
<p><b>Traffic</b></p> <p>Workers and visitors in the packing shed are at increased risk of injury if access to the workplace is cluttered; when stairways and walkways are not safe, damaged or in an unsafe condition and when there is risk of collision with traffic or other people.</p>  	<p>Access to the packing shed for all workers and visitors should be clearly defined and separated from vehicle traffic.</p> <p>Stairs, access platforms, walkways and ladders should provide safe access. Stairs should be provided instead of using ladders for access to high areas of the shed. They should have wide treads and a non-slip surface and a handrail.</p> <p>Information on their safe design and construction can be found in the Australian Standard <i>AS 1657 – fixed platforms, walkways, stairways and ladders – design, construction and installation</i>.</p> <p>Machinery and other items that reduce visibility should be located away from doorways, corners and other high traffic areas. Hazardous conditions (e.g. wet/slippery floors) or locations (areas around cool rooms), should be sign-posted.</p>
<p>Driving from bright sunlight into a dark packing shed (or workshop) can increase risk of collision and injury because the driver's vision can be briefly and severely reduced.</p>	<p>Alarms and flashing lights can be used to notify forklift operators of pedestrians in the vicinity of shared mobile plant pedestrian zones.</p> <p>Alarms (beepers) installed on vehicles can warn pedestrians of vehicles working or reversing in the vicinity.</p>

## Hazard and Risks

## Risk Controls



Using one-way traffic systems will reduce the risk of vehicle collision at packing shed entrances.

Warning signs should be in place and driver safety induction requiring operators of forklifts and other mobile plant to stop and sound horn before continuing.

When mobile plant operators are exposed to bright sunlight they should be provided with appropriate protection such as sun visor or screen.

Visitors to the farm who are not aware of traffic hazards may pose risk to others as drivers or be at risk as pedestrians.

Visitors to the farm should be directed to the farm house or office, with clearly marked signs. Sign in may be required to enter the packing shed.

Workers and visitors in the packing shed are at risk of injury if there is no separation of pedestrian and forklift traffic.

Every effort should be made to isolate pedestrian walkways from forklift routes using physical barriers and clearly visible signs.



Where this is not possible and as a less effective control, pedestrian walkways and traffic areas can be marked out using witches hats, crosshatching or coloured/reflective tape.


All workers must receive a safety induction, relevant training, and instruction, plus be supervised to ensure that workplace safety rules are followed.

Children who have unrestricted access to the packing shed are at risk of injury from the whole range of hazards.

Farm rules that restrict access of children except under close adult supervision should be enforced by family and packing shed workers.

### 3.5 Packing Shed - work environment

There are a number of specific work environment hazards in packing sheds that commonly pose risk of injury or illness.

Hazards and Risks	Risk Controls
<b>Temperature</b>	
<p>Excessive heat or cold can have impact on the health and safety of workers.</p> <p>Working in hot conditions can cause heat stress - heat rash, heat exhaustion and in extreme cases, heat stroke.</p> <p>Early signs of heat exhaustion include:</p> <ul style="list-style-type: none"> <li>• Headache</li> <li>• Irritability</li> <li>• Thirst</li> <li>• Fatigue</li> <li>• Nausea</li> <li>• Stomach and muscle cramps</li> <li>• Shortness of breath</li> <li>• Muscle weakness and lack of coordination</li> <li>• Cold clammy skin, confusion and a rapid pulse.</li> </ul> <p>Working in cold conditions can exacerbate musculoskeletal conditions such as arthritis and the need to wear warm heavy clothing can increase risk of injury.</p>	<p>Modifications that can be made to reduce heat in packing sheds include:</p> <ul style="list-style-type: none"> <li>• Insulating roofs, shiny or white-painted roofs reflect heat and are cooler than weathered, unpainted or dark painted corrugated roofs.</li> <li>• Installing vents and windows adjacent to work areas and on opposite sides of the shed to increase through-ventilation</li> <li>• Installing vents at or near the ridge of the roof to increase ventilation</li> <li>• Using ceiling or pedestal fans or air-conditioning.</li> </ul> <p>Work practices to reduce risk of heat stress and fatigue include:</p> <ul style="list-style-type: none"> <li>• Wearing cool clothing</li> <li>• Ensure adequate water is accessible for all workers</li> <li>• Job rotation and ensuring that all work breaks are taken</li> <li>• Reduce the work pace or allow extra breaks in extreme heat</li> <li>• Ensure that everyone knows the risks, the signs of heat stress and the importance of drinking water</li> <li>• Reschedule work to avoid work in the hottest part of the day.</li> </ul> <p>Packing shed modification to reduce impact of working in cold conditions include:</p> <ul style="list-style-type: none"> <li>• Blocking draughts from windows</li> <li>• Using heaters.</li> </ul> <p>Work practices to reduce problems with the cold include:</p> <ul style="list-style-type: none"> <li>• Wearing suitable clothing that does not restrict work - e.g. several layers of light warm clothing that can be removed as the day becomes warmer.</li> </ul>
	

Hazards and Risks	Risk Controls
<b>Shed and Workstation Lighting</b>	
<p>Poor lighting can affect the safety of workers by:</p> <ul style="list-style-type: none"> <li>Increasing risk of slips, trips and falls by not being able to see steps and other hazards</li> <li>Causing mistakes and errors in work, and unsafe work in taking corrective action.</li> </ul> <p>Too much light, or flickering light can cause headache and reduce safe practice.</p>	<p>Lighting at each individual work station should be controlled separately to ensure adequate light for each worker, rather than having a setup where all the lights in the packing shed are either on or off.</p> <p>People working on the grading/ sorting line require good consistent indirect light at the work level.</p> <p>Lighting should be adequate in all other areas to ensure that there is good visibility for safe movement of people and vehicles.</p>
<b>Noise</b>	
<p>Noise is a common hazard in packing sheds posing risk of permanent hearing loss and tinnitus (ringing in the ears) for workers.</p> <p>Damaging noise levels are generated by the use of loud machinery and equipment for treatment of produce, sorting and grading, forklift operation and vehicle movement.</p> <p>Noise is increased if music is played loudly.</p> <p>A rule of thumb is that if you have to raise your voice to be heard by a person about one metre away, then the noise level exceeds the safe level.</p> <p>To properly assess risk, noise levels at work stations should be measured. Maximum exposure that is permitted by WHS Noise Regulations is 85 dBA for 8 hours per day.</p>	<p>Eliminating noise hazards is generally not practical for packing sheds where machinery is used for transporting, treating, grading and packing produce.</p> <p>When choosing new equipment or machinery consider how much noise it produces and find out if less noisy equipment is available. Machinery with more effective mufflers or similar add-ons such as noise covers that reduce noise, are available.</p> <p>Where possible locate noisy equipment such as a generators, air compressors or vacuum pumps away from the work areas or outside the packing shed.</p> <p>Noise may also be reduced by:</p> <ul style="list-style-type: none"> <li>Fitting sound absorbing materials to ceilings and walls; using double-glazed glass</li> <li>Improving exhaust systems</li> <li>Installing noise dampers</li> <li>Proper lubrication, maintenance and repair of machinery and equipment.</li> </ul> <p>Providing suitable earmuffs and earplugs will be necessary where the noise level cannot be reduced to acceptable levels.</p>
	

## Hazards and Risks

## Risk Controls



Workers should be consulted over how exposure to damaging noise levels will be achieved. Rules will include:

- Limiting the use and volume of radios and CD players. Using these devices with earphones or earpieces is not recommended in noisy environments because they isolate the worker and prevent him/ her from hearing warning signals and prevent communication with other people in the shed.
- Rules to ensure the use of muffs or plugs should be reinforced to ensure their use.

## Electricity

Electrocution is more likely to occur when:

- Damaged equipment, extension leads, wiring or fittings are used.
- Fixed wiring, electrical cords or equipment has been installed, altered or repaired by anyone other than a registered electrician.
- There are unprotected wires near plugs.
- Too many appliances are used at once, overloading circuits.
- Fuses or circuit breakers with incorrect ratings are used.
- Work is undertaken or high machinery is used too close to overhead powerlines.
- Earth connections on fixed electrical items are corroded or not properly connected.
- Electrical equipment is used in wet areas.
- Workers come in contact with underground cables when trenches or holes are dug.

Workers are at a major risk of electrocution when working and operating machinery underneath and close to overhead powerlines.

Overhead powerlines or laneways should be re-located where there is risk of contact with vehicles or other plant or equipment.

Identify, placard and include on the farm map, the location of all overhead and underground power lines.

Before you dig, bore, drill or if you are unsure about the location of any underground services (electricity, gas and telephone), contact Dial Before You Dig on 1100.

Overhead powerlines can also be identified by installing rat's tails and reflectors.

Hazards and Risks	Risk Controls
<p>Many electrical incidents are caused by faulty wiring, electrical installation and damaged or worn portable electrical appliances and extension leads.</p> <p>Overloaded power circuits and power boards also cause problems - with too many appliances on the one circuit or when heavy duty equipment is used on a circuit not designed to supply the required current.</p>	<p>A Residual Current Device (RCD) should be installed at the fuse box to provide protection for all power circuits. If power circuits are not protected, then a portable RCD can be plugged directly into electrical outlets until a permanent RCD is fitted to the power board.</p> <p>RCDs should be checked and tested regularly, at least annually.</p> <p>Note. Circuit Breakers are not RCDs. They offer no protection to people.</p> <p>Only licensed electricians should undertake work and repair electrical equipment installations and wiring.</p> <p>A system should be put in place for regular inspection and testing of portable electrical leads and equipment to identify electrical hazards.</p> <p>(Note that in some States, routine testing and tagging of electrical extension cords and appliances may be required by law, especially when used in hostile (wet and dusty work environments).</p> <p>Workers should be instructed to report any faulty electrical equipment or installations immediately.</p> <p>No work should be undertaken while standing in wet areas while using electrical equipment.</p>
<b>Dust and Fumes</b>	
<p>Fumes, smoke and gases produced by petrol or diesel motors in the packing shed pose health risks to workers.</p> <p>Dusts can also cause respiratory problems for workers such as asthma in susceptible people.</p>	<p>Design of processes for dust reduction is an important control measure that should be considered in the planning of the packing shed operations.</p> <p>Use electrically driven engines where possible.</p> <p>Locate other motors (e.g. petrol generators,</p>



## Hazards and Risks



## Risk Controls

air compressors) outside the packing shed, or vent the exhaust gases to the outside, and keep all seals well maintained.

Ensure adequate ventilation, including exhaust/ extraction systems to help reduce dust levels in the shed.

Dusty work areas can be vacuumed and swept with a wet broom to reduce dust.



Use of appropriate Personal Protective Equipment such as face masks or respirators where necessary.

Maintaining air conditioners, filters and seals as well as general attention to cleaning up dusty areas and machinery will reduce dust exposure.

Chemicals used by post-harvest treatment of produce (pesticide sprays and dips) can cause health problems for workers.

Consider ways of isolating chemical sprays and dusty work processes; for instance isolation booths may be used to separate people from the dust or chemical hazards.

Use of appropriate Personal Protective Equipment such as face masks, respirators, gloves and protective clothing where necessary.

## Smoking in the workplace

Smoking is a well-known risk to the long-term health of smokers and exposure to exhaled smoke is a well established risk for bystanders.

No-Smoking rules should be established and enforced within the packing shed, including within the eating and mess areas. Additionally, all vehicles (tractors, utes etc) should be non-smoking.

There is a risk of explosion from using fuels, LPG gas and ethylene in packing sheds.

Outdoor smoking areas should be located away from and be safe from traffic hazards.

## Amenities


Lack of clean and adequate rest and eating facilities for use during work breaks reduces productivity and increases risk of ill health.

An adequate mess and meal area should be provided that is separate from the work areas. The area should be free from noise and kept in clean condition. There should be adequate seating for all workers.

Hazards and Risks	Risk Controls
	Hand washing facilities should be close to the eating area.
Lack of clean and accessible toilet and wash-up facilities puts the health of workers at risk.	Adequate washing and toilet facilities should be provided and be reasonably accessible from the work areas. These should be clean, private, secure and properly maintained.

### 3.6 Handling Bulk Produce

Handling of bulk produce can be associated with a range of WHS risks that must be eliminated or controlled. Risks are predominantly related to potential crush injury from toppling bins. Where possible, work systems should include lifting aids to reduce the need for manual handling.

Hazards and Risk	Risk Controls
<b>Picking Bins and Containers</b>	
Handling bins may pose risk of musculoskeletal injury if manual handling is involved in their movement, the risk being greater if containers are overfull.	Pallet jacks and fork lift trucks should be used to move bins in the packing shed.
Movement of containers on trailers or by forklift poses risk of crush injury.	Systems should be designed to handle bulk produce safely, where possible avoiding the need for bins to be handled or moved manually.
Containers and bins that are stacked unevenly or too high can collapse causing injury.	Containers should be in good repair and not overfilled.
	Moving bins, pallets and other containers should not pose risk of collision with workers or injury associated with the use of forklifts or other mobile plant.
<b>Storage Racks</b>	
Crush injury can be caused by falling packaging, equipment, containers bins or racks being overloaded.	Storage racks should be of adequate strength to ensure that they do not collapse under the weight of stored produce. Racks must be placarded with their SWL.

**Hazards and Risk****Risk Controls**

Racks should be secure and containers stacked to ensure that they do not fall.

Pallets and bins should not be stacked too high.

**3.7 Washing, Grading and Packing**

Work includes assembling packaging, preparing, grading/sorting and packing produce; stacking boxes, trays and bags onto pallets or other areas ready for movement to storage or transport.

A key challenge for managers of packing sheds is to design the workplace and work procedures to control the risk of injury associated with repetitive work over the working day - particularly manual handling risks. Other mechanical hazards must also be controlled.

**Hazards and Risks****Risk Controls****Access to work stations**

Injury can occur if access to any workstation is not clear and free from obstacles and tripping hazards.

Access to each work station should be free from obstacles and tripping hazards.

Wet floors and produce left on the floor poses and increased risk of slipping and falling.

Strict adherence to rules ensuring that dropped produce is picked up and binned.

Ensure that floors are kept clean and dry.

Access to raised workstations can result in trips and falls and serious injury.

Fitting handrails on raised work platforms will reduce the risk of workers falling.

Hazards and Risks	Risk Controls
<b>Handling Produce</b>	
<p>Produce being graded and packed may pose risks from surface contamination by soil, saps or chemicals causing skin conditions, infection or poisoning due to contact or absorption of saps and chemicals through the skin.</p>	<p>Suitable gloves should be provide and worn for the produce being handled, e.g. mangos, the task being undertaken and/ or the potential chemical exposure from post harvest treatments.</p>
<b>Repetitive Manual Work - Ergonomic Injury</b>	
<p>Standing at work on hard surfaces such as concrete floors causes pressure on feet, large joints and backs. Standing for long periods on hard floors is associated with musculoskeletal pain and injury.</p> <p>Pain, fatigue and injury to muscles and joints including back, neck, shoulders and wrists is a risk where the working height is too high or too low for workers and/or where work involves stretching and/or twisting, or awkward movements.</p>	<p>Where work is undertaken in a standing position on a concrete floor, laying rubber matting will reduce leg and back fatigue.</p> <p>Design work to avoid unnecessary bending or lifting to or from the ground. Use mechanical lifting and moving devices wherever possible. Have items such as bags or cartons placed on a bench rather than the floor if they have to be lifted again.</p> <p>Rotate workers to perform and vary work to prevent ergonomic fatigue.</p>
<p>Work rates that are too high are associated with injury.</p> <p>Workers who are tired and in pain are much less productive and are at risk of injury.</p> <p>Cartons and packages that are heavy and/or awkward to lift and carry pose risk of back and other musculoskeletal damage.</p>	<p>Provide sitting and standing options at workstations, and adjustable working height to accommodate the height of workers.</p> <p>Examine the physical task to be undertaken at each workstation. Where possible modify the work to ensure that the task does not require stretching or lifting and twisting action.</p>
	<p>Regularly review the speed of the conveyor, in consultation with workers, to ensure that the rate is not unsafe or cause difficulty for any worker.</p>
	<p>Where possible job rotation should be adopted as usual practice, taking into account the needs of the individuals in the work team.</p> <p>Regular work breaks should be provided - frequent short breaks may be preferable to longer less frequent breaks where the purpose is to reduce the effects of fatigue and allow affected muscles to relax. New</p>

Hazards and Risks	Risk Controls
	<p>workers or workers returning to work after an absence of more than 2 weeks may need a period of adjustment.</p> <p>All new workers should receive safety induction and ergonomic training/ instruction to safely work in the packing line. Workers should be made aware and encouraged to report problems early.</p>
<b>Mechanical Hazards of Conveyors and Packing Lines</b>	
<p>Exposed moving parts in any area of the conveyor systems may cause risk of pinch or crush injury to workers, bystanders and visitors.</p> <p>Pinch points are common at the point where the conveyor comes into contact with the rigid frame of the system.</p> <p>Unguarded moving parts such as belts, flywheels, cranking points, drive shafts, pulleys etc are associated with crush injury in packing sheds.</p>	<p>Conveyors should be free of crush and pinch points that are accessible by workers.</p> <p>All exposed crush and pinch points must be guarded to ensure that workers cannot be harmed.</p> <p>Rules and supervision to ensure that guards are kept in place.</p> <p>An effective lock-out/tag-out system should be part of the system with accompanying workplace rules that ensure that the machine cannot be started while maintenance or adjustment activity is being carried out or when a guard is removed.</p>

### 3.8 Post-Harvest Treatments

Post-harvest treatment of produce may pose a risk to those who are treating produce and those on the packing line handling wet or freshly treated avocados. The predominant risk associated with post-harvest treatments are those associated with the use of chemicals and pesticides for insect disinfestation for quarantine and preventing fungal disease when being stored.

Hazards and Risks	Risk Controls
<b>Hazardous Chemicals</b>	
<p>Most post harvest pesticide treatments are classified as Hazardous Chemicals under States Work Health and Safety Regulations and are poisonous to workers.</p> <p>Workers or bystanders, including children, may be exposed to hazardous chemicals through contact with the skin, by inhalation</p>	<p>The label on the chemical contained should be checked to ensure that the chemical is being used correctly.</p> <p>All restrictions on use of the chemical are followed and all use is in accordance with label directions. This is a requirement under State “pesticide control of use” legislation.</p>

or ingestion, causing short term or long term adverse health effects.

Contact may occur during mixing and loading, during treatment, handling and packaging treated produce.

Workers in the packing shed may be adversely affected by fumes and odours associated with treatment of produce.



Drums and containers should be stored in a secured area away from the main work area.

Equipment being used for mixing and applying chemical treatments should be designed to reduce risk of exposure to workers. The treatment area should be physically separate from the grading and packing area and fumes should be exhausted away from work areas.

The packing shed should be well ventilated to ensure that fumes and odours do not affect other workers.

Only persons who have been trained in the safe use of chemicals should be allowed to handle pesticides.

Safety instructions on chemical labels must be followed and the required Personal Protective Equipment (PPE) should be provided and used. Pesticide users should be supervised and PPE should be kept clean and in good condition.

Safety Data Sheets (SDS) should be available for all people handling pesticides, hazardous substances and chemicals.

Relevant records of pesticides that are stored and used should be kept in accordance with State WHS and “pesticide control of use” laws.

### **Fumigation Treatments**

Fumigation is a special case of post-harvest treatment where all the risks associated with handling and use of hazardous substances apply, with the added risk of use of fumigants in a confined space.

All the risk control requirements for hazardous substances should be in place where fumigation is the method of post-harvest treatment.

### **Manual Handling**

Lifting and manual handling heavy loads, drums and other packaging may cause musculoskeletal injury.

Store drums and packaged produce on pallets. Use pallet jacks and forklifts to move produce around packing sheds.



### Mechanical hazards

Equipment used for post-harvest treatment may be the source of mechanical hazards that put workers and bystanders at risk of crush and other injury.

Unguarded moving parts such as belts, drive shafts, chains and pulleys are associated with crush injury.

Mechanical hazards of equipment used for post-harvest equipment should be identified and eliminated or risk controlled.

All exposed moving parts should be properly guarded.

### 3.9 Forklift Operation

The operation of forklifts in packing sheds has been associated with death and serious injury. Careful attention is required by the employer and all workers to ensure every person's safety.

Hazard and Risks	Risk Controls
<b>Purchasing a Forklift</b>	
<p>Purchasing a forklift that will meet the requirements of your packing shed operation and meet your safety requirements will reduce risk of injury.</p>	<p>Consult with workers over features to be taken into account when buying a new forklift. The operator knows the tasks and operational needs.</p>
<p>Injury risk may be associated with:</p> <ul style="list-style-type: none"> <li>• Loads exceeding the lifting capacity increasing likelihood of tipping and rollover</li> <li>• Poor operator protection - No ROPS</li> <li>• Poor access for the operator - nearly one third of forklift injuries are caused by slips, trips and falls that occur when getting on and off the forklift</li> </ul>	<p>Ensure that the forklift has a stamped capacity plate containing:</p> <ul style="list-style-type: none"> <li>• Make, model and serial number</li> <li>• Rated load capacity</li> <li>• Mast tilt</li> <li>• Maximum lift height</li> <li>• Tyre pressure</li> <li>• Gross vehicle weight and steer axle load, or drive and steer axle loads.</li> </ul>

- Operation of internal combustion engines in enclosed areas e.g. cool rooms - resulting in carbon monoxide poisoning and/or oxygen depletion



Ensure that the forklift's lifting capacity exceeds both current and planned requirements of the packing shed.

Forklifts should be fitted with required operator protective devices:

- Roll-Over Protective Structure (ROPS)
- Falling Object Protective Structure (FOPS)
- Seatbelt. It is recommended that seatbelts are worn and consider installing an interlocking device preventing operation when operator is not wearing the seatbelt.



Forklifts should have good non-slip steps and operator platform as well as grab handles for operator access.

Forklifts are required to be fitted with warning mechanisms including an audible horn, flashing warning lights and reversing beeper.

Forklifts should be fitted with tilt restrictors and speed limiters on the mast

If the forklift is operated most of the time in enclosed or semi-enclosed areas then a battery operated forklift may reduce the risk of poisoning from carbon monoxide and other dangerous gases from internal combustion engines.

Do not operate a forklift within 3 metres of overhead power lines.

### Operator Skills

Workers who do not possess the appropriate plant and workplace training put themselves and others at greater risk of injury in the packing shed.

All forklift operators must be trained and hold a High Risk Work License endorsed for operating a Forklift Truck (FL), including mast type forklifts attached to tractors.

Allowing any person to operate forklifts without the appropriate High Risk Work Licenses (except when being trained), is contrary to National Work Health and

Workers who operate forklifts should be trained and assessed as competent with the forklifts used in the packing shed.



Safety Regulations for the use of forklift trucks.



Forklift operators should receive site specific induction which includes:

- Relevant workplace safety policies, practices and rules of operation
- Pre-operation checks
- The operating conditions of the workplace
- Information on specific forklift features including control positions and functions
- Reporting of hazards
- Servicing, maintenance and repair responsibilities.

Training and assessment should be recorded. High Risk Work Licenses should be recorded.

### Forklift Maintenance

Injury risk is increased when maintenance is neglected.

The risk of injury is high during maintenance from collapsing forks and mast.

Implementing a proper maintenance schedule as advised by manufacturers can reduce the risk of breakdown and other malfunction which may cause injury

When forklifts are unserviceable or are removed from work for maintenance or repair, appropriate tags and warning signs should be used to prevent use.

Forklifts should be immobilised during maintenance by doing the following:

- Lowering the mast and forks
- Remove the key from ignition
- Apply the parking brake
- Chock the wheels
- Disconnect the battery
- Shut off fuel systems.

Maintenance should not be performed in hazardous locations e.g. the packing shed floor, unless it has broken down and cannot be removed before it is repaired. Signs and barricades should be used to divert traffic around such forklifts.

DO NOT charge forklift truck batteries in the packing shed.

Maintenance and repair records should be kept identifying:

- The forklift
- Date of maintenance
- Hours of operation (when hour meter fitted)
- The work undertaken
- The person who undertook the maintenance

### 3.8 Pallets Storage and Stacking

Storage of pallets requires specific attention to ensure the safety of all people in the vicinity of pallet stacks.

Hazards and Risks	Risk Controls
<b>Stacked pallets</b>	
Stacked pallets and bins that are stacked too high pose risk of injury from falling stacks.	Pallet and bin stacks should be located in areas that are safe for stacking, un-stacking and storage.
	Pallets should be stacked neatly and only as high as the reach of forklifts.

### 3.9 Cool Rooms and Controlled Atmosphere Storages

Cool rooms, modified atmosphere chambers and chambers used for fumigant treatments and ripening fruit should be considered to be Confined Spaces. These pose risks to persons entering these environments and are subject to specific requirements under WHS regulations.

Hazard and Risks	Risk Controls
<b>Cool Rooms</b>	
Cool rooms pose a risk to persons entering and remaining in a cold environment for any length of time.	Cool room doors should be designed so that doors can be unlocked and opened from the inside to prevent persons being

Other risks include injury from slipping on wet floors.

inadvertently locked inside.

An alarm or an alarm system that can be activated from the inside should be installed, maintained and regularly tested.

Workplace rules restricting unauthorized persons entering cool rooms.

Cool rooms should be placarded with appropriate warning signs indicating hazards and the authorization of persons to enter.

### Ripening Rooms - Controlled Atmospheres and Modified Atmospheres

Using controlled atmospheres and modified atmospheres to extend storage life, where oxygen is reduced and carbon dioxide is increased, poses risks to persons entering the chamber due to oxygen depletion.

Modified atmosphere stores should be such that persons cannot be inadvertently locked in the Confined Space and an alarm system that can be activated from the inside should be installed, maintained and regularly tested.

Persons entering chambers used for post-harvest fumigation or management are at risk of being exposure to other chemicals or gases being used.

Training is required for all workers who enter and work in Confined Spaces (modified atmosphere stores, fumigation chambers and ripening rooms).

Persons could be at risk of suffocation and injury from explosion where electric motors are poorly maintained in environments where ethylene is used.

Rules should be established to restrict unauthorized persons entering confined spaces, controlled atmosphere cool rooms, stores and ripening rooms.



Controlled atmosphere stores should be signed appropriately indicating hazards and the authorization of persons to enter.

eg

Controlled Atmosphere Store  
Confined Spaces  
Entry by Permit Only

All stores and chambers should be vented before opening to enter the store.

Relevant personal protective equipment is required in line with label safety directions.

Respirators with air supply should be available to workers opening chambers



following fumigation.

Training is required for workers who enter confined spaces.

Post harvest treatment areas should be appropriately placarded indicating hazards and the authorization of persons to enter.

No Smoking rules should be enforced in and around post harvest treatment and ripening areas where ethylene is used.

Electric equipment and motors should be regularly maintained to prevent sparks.

### 3.10 Loading Areas

The loading area is an area of special risk of injury to workers and to visitors associated with traffic movement and falling loads.

Hazard and Risks	Risk Controls
<b>Loading Areas</b>	
<p>Loading areas and vehicle traffic area are associated with risk of collision with other vehicles and runover of workers and visitors.</p> <p>The risk of collision increases when trucks are being loaded at night.</p>	<p>The loading area should be kept clear of obstacles, provide good visibility to drivers and pedestrians in the area.</p> <p>Signage of traffic areas should indicate speed limits and the direction of traffic to ensure safety of pedestrians and other workers.</p> <p>Ensure there is good light in loading bays and workers are wearing high visibility clothing to prevent being run-over, especially at night.</p>

### 3.11 Machinery Maintenance

Maintenance of machinery and equipment is a high risk activity in most enterprises and attention should be made to ensuring the safety of those undertaking maintenance work, whether employees, contractors or the employer. The safety of bystanders during maintenance work needs protection.

Hazard and risk	Risk controls
<b>Lock-out and Tag Systems</b>	
Serious injury can occur when there is no effective lock-out/tag-out system for use during adjustment or routine maintenance.	An effective lock-out/tag-out system should be part of the system with accompanying workplace rules that ensure that the machine cannot be started while maintenance or adjustment activity is being carried out.
<b>Tools and Equipment</b>	
Eye and hand injury is associated with use of hand- and powered tools used in machinery maintenance.	Powered tools and equipment should be kept in good condition. Guards well maintained and used in accordance with the safety guidelines in the operator's manual.  Suitable Personal Protective Equipment should be used e.g. goggles for grinding.

### 3.12 People at Special Risk

The employer or person in control of the packing shed has responsibility to provide a safe workplace for all people in the workplace including workers, contractors and visitors.

Many packing sheds in the fruit and vegetable industries in Australia are located on family farms and are accessible to family members, including children. The safety of all, including children and family visitors must be ensured.

Hazard and risk	Risk controls
<b>Children and Visitors</b>	
Children are at special risk of injury in packing sheds.	Young children must not be permitted in the packing shed except under close supervision of a responsible adult.
Farmers have responsibility to protect the safety of other workers and visitors to the farm workplace.	Visitors should not be permitted in the packing shed during work unless they are supervised to ensure their safety.
<b>Contractors</b>	
Employers have responsibility to provide a safe workplace for contractors who enter the farm workplace.	Contractors including transport operators should be inducted into the safety systems and rules of the packing shed and be made aware of their obligations.

### 3.13 Emergency Preparedness

All packing sheds and work places must be ready for emergencies. Being well prepared with an Emergency Plan and equipment will ensure that the damage to people and property is minimized when accidents happen.

## Emergency Plans

### General

Emergency plans should be prepared and communicated to all workers.

Emergency plans should include plans for dealing with personal injury, poisoning, fire, explosion, spills of Hazardous Substances/ Dangerous Chemicals and evacuation of the packing shed and accounting for workers.

All workers should be aware of Emergency Plans which should be on display in the packing shed. It is also recommended that they are displayed in meal rooms and beside all phones and two way radios.

Emergency Plans should be explained and communicated to all workers during a safety induction, regularly updated and tested by conducting an emergency safety drill.

Location of telephones and emergency numbers for ambulance, fire, police and emergency services should be included in emergency plans and worker safety induction.

Communication systems should be in place to ensure that all workers are in contact with others on the farm and that emergencies can be notified immediately.

### Fire

The packing shed should be kept clear of flammable materials.

Fire extinguishers should be available where fire is a hazard.

All workers should be aware of and trained in emergency fire procedures.

## 4. Further information and important contacts

### State/ Territory Health and Safety Authorities

#### *New South Wales*

WorkCover NSW

Ph: 13 10 50

[www.workcover.nsw.gov.au](http://www.workcover.nsw.gov.au)

#### *Australian Capital Territory*

ACT WorkCover

Ph: 02 6207 3000

[www.worksafe.act.gov.au](http://www.worksafe.act.gov.au)

#### *Victoria*

Victorian WorkCover Authority

Ph: 1800 136 089

[www.workcover.vic.gov.au](http://www.workcover.vic.gov.au)

#### *Tasmania*

WorkCover Tasmania

Ph: 1300 366 322

[www.workcover.tas.gov.au](http://www.workcover.tas.gov.au)

#### *South Australia*

WorkCover Corporation

Ph: 13 18 55

[www.workcover.com](http://www.workcover.com)

#### *Western Australia*

WorkSafe - Consumer and Employment Protection

Ph: 1300 30 78 77

[www.safetyline.wa.gov.au](http://www.safetyline.wa.gov.au)

#### *Northern Territory*

Northern Territory WorkSafe

Ph: 1800 019 115

[www.worksafe.nt.gov.au](http://www.worksafe.nt.gov.au)

#### *Queensland*

Queensland Workplace Health and Safety

Ph: 1300 369 915

[www.deir.qld.gov.au/workplace](http://www.deir.qld.gov.au/workplace)

### National Contacts

Safe Work Australia

Ph: 1300 551 832

[www.swa.gov.au](http://www.swa.gov.au)

Standards Australia

Ph: 1800 035 822

[www.standards.com.au](http://www.standards.com.au)

Farmsafe Australia

Ph: 02 6752 8218

[www.farmsafe.org.au](http://www.farmsafe.org.au)

Australian Centre for Agricultural Health and Safety

Ph: 02 6752 8210

[www.aghealh.org.au](http://www.aghealh.org.au)



AUSTRALIAN CENTRE FOR AGRICULTURAL HEALTH AND SAFETY