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40. Health and Safety in the Packing Shed

A Practical Guide

Farmsafe Australia Inc

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1. Introduction

1.1 This publication – its purpose

This publication aims to provide a practical guideline for horticulturalists, employers and workers to improve and ensure the safety of those who work in horticulture enterprises, and those who are in the vicinity of areas where fruit and vegetable production work is being undertaken.

The document briefly provides guidelines on the hazards and risks associated with fruit and vegetable production and practical guidelines on how to implement effective occupational health and safety (OHS) risk control that will not only reduce risk, but will assist producers to meet OHS regulatory requirements.

Horticulture production businesses should use this document in association with the *Managing Health and Safety in the Horticulture Industries* risk management package – a practical management tool for implementing OHS in the horticulture workplace - available on the Farmsafe Australia website www.farmsafe.org.au.

The publication has been prepared under the direction of the Farmsafe Australia Horticulture Industries Safety Reference Group, comprising producers, State work health authorities, Farmsafe extension officers with representatives of Horticulture Australia.

1.2 Health and safety problems in horticulture production

People working in the horticulture industries are exposed to risk of injury associated with a range of hazards, many of which are common to other sectors in agriculture, but many of which are specific to horticulture.

Hazards associated with production of fruit and vegetables:

- Mechanical hazards – of the machinery, of the means of transportation of goods and workers (ATVs, utilities), of hand-tools and associated with manual handling in the field and in packing sheds
- Biological hazards – moulds, saps and infectious diseases eg leptospirosis, legionella
- Chemicals – insecticides, fungicides and herbicides
- Dusts
- 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 (more than 10 each year on fruit and vegetable farms), serious injury requiring hospitalization and down time, to "nuisance" injury that stops work for a short time, or makes work slower and reducing productivity.

1.3 Legal obligations of the people in horticulture production enterprises

State OHS Acts are similar in all States, in that they lay down the responsibilities of key parties involved in reducing risk of injury and illness associated with work.

Responsibilities of *employers* include:

- Consultation with workers to implement OHS program
- Providing a safe working environment
- Organisation of safe systems of work
- Maintaining work areas, machinery and equipment in a safe condition
- Ensuring safe use, handling, storage and transport of plant and hazardous substances
- Assessment of health and safety risks to employees and others in the workplace, and institution of effective risk control measures
- Providing adequate information, induction, instruction, training and supervision to employees
- Providing adequate facilities for the welfare of workers

Employees also have responsibilities. Workers must take reasonable care of the health and safety of themselves and others, and cooperate with management in (its) efforts to comply with occupational health and safety requirements.

Employers and self-employed persons must ensure the health and safety of people visiting or working at their places of work, who are not their employees, by not exposing them to risk. This includes contractors.

Manufacturers, designers and suppliers of plant and 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 safe use.

Each of these OHS obligations must be met in the horticulture industries and on each individual enterprise.

2. Finding and fixing safety problems in the packing shed

The key processes (or steps) that must be set in place to manage OHS risk are:

1. Involve your workers – *Consultation*

There must be ways for workers to actively participate in the OHS program of the enterprise. How managers and employers involve workers will be different on different properties and methods may include:

- Regular meetings where safety issues are discussed
- Systems whereby safety representative are nominated to have specific responsibility for liaison between workers and managers

Whatever system is in use, it is essential that there is a clear commitment to safety of the owner and manager, and that this is obvious by the safety behaviour and activity taken on a day-to-day basis.

2. Look for unsafe conditions and unsafe practice – *Hazard identification*

Safety hazards must be identified in a systematic way.

This means that property owners, managers and workers must identify those jobs and situations that may cause injury or illness, not only to people doing the work, but also to bystanders and visitors.

Hazard identification should be an ongoing and be carried out:

- At least annually
- When systems are changed – new equipment, changed facilities, changed practice

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

3. 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.

4. 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:

1. Elimination of the hazard

Where possible, the hazard 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, OHS regulations require employers to consider this option. If it is not possible, then the next most effective solution should be sought and put in place.

2. 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.

3. 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.

4. 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 provision of information to workers about the safety risk associated with the work to be done and how these risks can be minimised.

5. Personal protective equipment

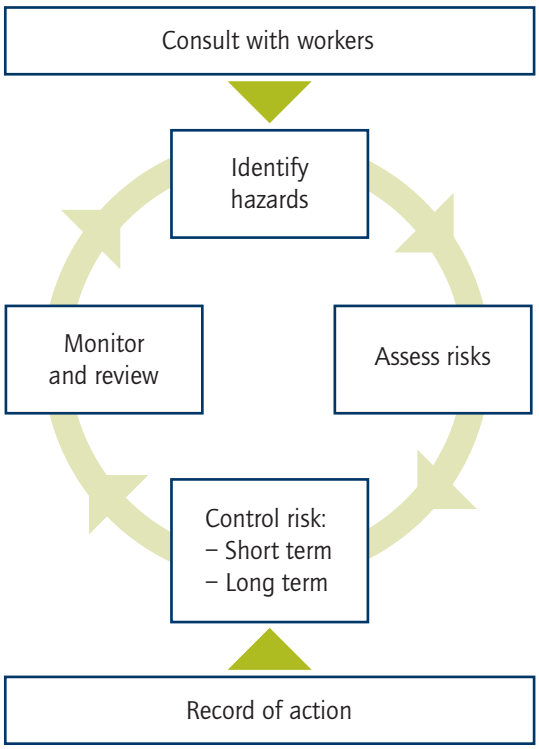
Personal protective equipment must be provided and used where workers cannot be protected from a hazard by a control measure higher up the order (1-4 above). This includes providing helmets to protect from head injury for riders of motorcycles and ATVs.

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

6. Keep a written note of your OHS activity – Record keeping

Records of all activity in your OHS program 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 processes should become a key part of the management of the whole business. Successful businesses invest significantly in OHS in terms of time, money and commitment at all levels. These businesses understand that overall performance of the business benefits from good OHS practice. Such 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 is a critical management skill.

3. Hazards, risk and risk control

3.1 Packing shed design for safety

Arguably 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 in relation to each other. Smooth flow of produce and of people and of work is not only more efficient it is generally safer for workers, contractors and other bystanders.

Hazard and risk	Risk controls
Poor design and layout poses risk of injury and chronic medical conditions associated with poor working conditions, unnecessary handling of produce and packages, exposure to dusts and noise, and risk of collision with mobile plant and people. 	Review the design and layout of the various sections of the packing shed, taking into account the smooth flow of produce, materials, people and machines. Consult with workers to identify potential hazards and improvements that could be made to packing shed layout. Consult with others in the industry who are experienced in design and layout of packing sheds to develop safer layout of the packing shed.

3.2 Traffic flow, access to work and movement around the packing shed

The safety of people should be ensured in planning and organizing for traffic flow of outdoor traffic such as trucks, all-terrain vehicles (ATVs), all-terrain utilities (ATUs) and other vehicles, and indoor traffic such as forklifts and other light vehicles.

Hazard and risk	Risk controls
Workers and visitors to the packing shed are at risk of injury if access to the workplace is cluttered, if stairways and walkways are in an unsafe condition, and if there is risk of collision with traffic or other people.	Access to the packing shed for all workers and visitors should be clearly defined and separated from vehicular traffic. Machinery and other items that reduce visibility should be located away from doorways and corners and other high traffic areas, and any hazardous conditions or locations should be sign-posted. Steps should be provided for access to high shed, they should have wide treads and a non-slip surface, and a handrail.
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 severely reduced briefly.	Photo-sensitive alarms can be used to notify forklift operators of pedestrians in the vicinity of shared mobile plant pedestrian zones. Alarms (beepers) installed on vehicles can warn pedestrians of vehicles working or reversing in the vicinity. Use of one-way traffic systems will reduce the risk of vehicle collision at packing shed entrances. Warning signs should be in place and driver 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 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.

Hazard and risk	Risk controls
Workers and visitors in the packing shed are at risk of injury if there is no separation of walkways from 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 or coloured/reflective tape. All workers must receive safety induction, instruction and supervision to ensure that workplace rules ensuring the safety of pedestrians are adhered to.
Children who have unrestricted access to the packing shed are at risk of injury from the whole range of hazards.	Farm family rules that restrict access of children except under close adult supervision should be enforced by family and packing shed workers.

3.3 The packing shed work environment

There are a number of specific work environment hazards in many packing sheds that commonly pose risk of injury or illness. These risks must be eliminated or controlled to ensure the health and safety of workers and to comply with OHS regulations.

Hazard and risk	Risk controls
Temperature Excessive heat or cold can have impact on the health and safety of workers. Working in hot conditions can cause heat stress – heat rash, heat exhaustion and in extreme cases, heat stroke. Early signs of heat exhaustion include: Headache, irritability, thirst, fatigue, nausea, stomach and muscle cramps, shortness of breath. muscle weakness and lack of coordination, cold clammy skin, confusion, rapid pulse.	Modifications that can be made to reduce heat in packing sheds include: • Insulation of roof • Installation of vents, windows adjacent to work areas and on opposite sides of the shed to increase through-ventilation • Installation of vents at or near the ridge of the roof to increase ventilation • Ceiling or pedestal fans • Air-conditioning • Shiny or white-painted roofs reflect heat and are cooler than weathered, unpainted corrugated roofs.
Working in cold conditions can exacerbate musculoskeletal conditions such as arthritis and the need to wear warm heavy clothing can increase risk of injury. 	Work practices to reduce risk of heat stress include: • Wearing loose cool clothing • Ensure adequate water is accessible to workers at all workstations • Job rotation • Ensuring that all work breaks are taken • Reduce the work pace or allow extra breaks in extreme heat • Ensure that everyone know the risks, the signs of heat stress and the importance of drinking • Reschedule work to avoid work in the hottest part of the day. Packing shed modification to reduce impact of working in cold conditions include: • Blocking up draughts from windows • Installation of heaters Work practices to reduce problems with the cold include: • Wearing suitable clothing that does not restrict work – eg several layers of light warm clothing, where layers can be removed as the day becomes warmer

Hazard and risk	Risk controls
Light Poor lighting can affect the safety of workers by: • Increasing risk of slips, trips and falls by not being able to see steps, and other hazards • Causing mistakes and errors in work, and unsafe work in taking corrective action. Too much light, or flickering light can cause headache and reduce safe practice.	Lighting at each individual work station should be controlled separately to ensure adequate light for each worker, rather having a setup where all the lights in the packing shed are either on or off. People working on the grading/sorting line require indirect but constantly good light at the work level. Lighting should be adequate in all other areas to ensure that there is good visibility for safe movement of people and vehicles.
Noise Noise is a common hazard in packing sheds posing risk of permanent hearing loss and tinnitus (ringing in the ears) for workers. Damaging noise levels are generated by operation of machinery and equipment for treatment of produce, sorting and grading, forklift operation and vehicle movement. Noise is increased if music is played. 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. To properly assess risk, noise levels at work stations should be measured. Maximum exposure that is permitted by OHS regulations is 85 dBA for 8 hours per day.	Elimination of the noise hazard is generally not practical for packing sheds where mechanical systems are in use in the processes of treating, grading and packing produce. When choosing new equipment or machinery consider the noise it produces and find out if less noisy equipment is available. Sometimes mufflers or similar add-ons such as noise covers that reduce noise are available. Where possible locate noisy equipment such as a generator and air compressors away from the main work. Noise may also be reduced by: • fitting sound absorbing materials to ceilings and walls, • improving exhaust systems, • installing noise dampers, • using double-glazed glass • Proper maintenance and repair of machinery and equipment Provision of suitable earmuffs and earplugs will be necessary where the noise level cannot be reduced to acceptable levels.

Hazard and risk	Risk controls
Noise continued	Workers should be consulted over how exposure to damaging noise levels will be achieved. Rules will include: • Limiting the use and volume of radio and CD players if they produce too much noise. 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 involving work underneath overhead powerlines is a major risk. Many electrical accidents are caused by faulty wiring and electrical installation. Overloaded installations 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 electricity. Electrocution is more likely to occur when: • Fixed wiring, electrical cords or equipment has been installed, altered or repaired by anyone other than a registered electrician • Damaged equipment, extension leads, wiring or fittings are used • 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 too close to overhead powerlines • Earth connections on fixed electrical items are corroded or not properly connected • Electrical equipment is used in wet areas • Trenches or holes are dug and connect with underground cable	Overhead powerlines or laneways should be re-located where there is risk of contact with vehicles or other plant or equipment. A Residual Current Device (RCD) should optimally be installed at the fuse box to provide protection across the whole electrical system. If the whole system is not protected, then portable RCDs can be plugged directly into electrical outlets. (Note that Circuit Breakers are not RCDs. They offer no protection to people.) Only licensed electricians should undertake electrical installations, extensions, alterations and repairs. RCDs should be checked regularly. A system of regular inspections of electrical leads, fittings and equipment to identify electrical hazards should be put in place. (Note that in some States, routine testing and tagging of electrical extension cords and appliances may be required by law.) Workers should be instructed to report any faulty electrical equipment or installations immediately. No work should be undertaken while standing in wet areas while using electrical equipment.

Hazard and risk	Risk controls
Dust and fumes	
Dusts generated in packing sheds can cause respiratory problems for workers such as asthma in susceptible people.	Design of processes for dust reduction is an important control measure that should be considered in the planning of the packing shed operations.
Fumes generated by post-harvest treatment of produce can cause health problems for workers.	Use electrically driven engines where possible.
Fumes, smoke and gases produced by petrol or diesel motors in the packing shed pose health risks to workers.	Locate other motor 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.
	Consider ways of isolating dusty work processes; for instance isolation booths may be used to separate people from the dust hazard.
	Maintenance of air conditioners, filters and seals as well as general attention to cleaning up dusty areas and machinery will reduce dust exposure.
	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.
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.
There is a risk of explosion from using fuels, LPG gas and ethylene in packing sheds.	Outdoor areas where workers may smoke should be safe from traffic hazards.
Amenities	
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.
Lack of clean and adequate rest and eating facilities for use during work breaks reduces productivity and increases risk of ill health.	An adequate eating and mess 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.
	Hand washing facilities should be close to the eating area.

3.4 Handling bulk produce

Handling of bulk produce can be associated with a range of OHS risks that must be eliminated or controlled. Where possible, work systems should reduce the need for manual handling.

Hazard and risk	Risk controls
Container movement	
Handling bins and lugs may pose risk of musculoskeletal injury if manual handling is involved in their movement, the risk being greater if containers are overfull.	Systems should be designed to handle bulk produce safely, where possible avoiding the need for contained to be handled or moved manually.
Movement of containers on trailers or by forklift poses risk of mechanical injury.	Containers should be in good repair and not overfilled.
Containers can collapse causing injury.	Mechanical means of moving containers should not pose risk of collision with workers or injury associated with the mobile plant.
	Racks should be of adequate strength to ensure that they do not collapse under the weight of stored produce.
Storage	
Injury can be caused by falling containers or collapsing racks.	Racks should be secure and containers stacked securely to ensure that they do not fall.
	Pallets and bins should not be stacked too high.
Workers and visitors may be exposed to hazardous chemicals on the surface of treated produce, eg seed potatoes, if they are accessible and not secured away.	Treated produce should be stored in an area secured from access by workers or visitors.

3.5 Post-harvest treatment

Work in the post-harvest treatment area may pose risk to those who are undertaking the treatment work as well as others working close by. Hazards associated with post-harvest treatments include chemical, mechanical, electrical and noise hazards.

Hazard and risk	Risk controls
Hazardous substances Post-harvest treatments may involve handling pesticides, many of which are classified as Hazardous Substances under States' Occupational Health and Safety Regulations. Workers or bystanders, including children, may be exposed to hazardous substances through contact with the skin, by inhalation or ingestion, causing short term or long term adverse health effects. Contact may occur during mixing and loading, during treatment and by handling treated produce. Workers in the packing shed may be adversely affected by fumes and odours associated with treatment of produce.	The label on the chemical contained should be checked to ensure that the chemical is being used in the correct manner that any restrictions on use of the chemical are noted and that use of the chemical is in accordance with label directions. This is a requirement under States' "Control of Use" legislation for pesticides. Drums and containers should be stored in a secured area away from the main work area. Equipment being used for mixing and use of 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 safe use of chemicals should be permitted to handle pesticides. Safety instructions on chemical labels must be followed, and the necessary Personal Protective Equipment (PPE) should be available and used. Use should be supervised, and PPE should be kept clean and in good condition. Material Safety Data Sheets (MSDS) should be available for all people handling hazardous substances. Relevant records of chemicals that are stored and use should be kept in accordance with State OHS and "Control of Use" regulations.

Hazard and risk	Risk controls
Fumigation treatment 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 Manual handling 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, flywheels, cranking points, drive shafts, pulleys etc 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 guarded. 

3.6 Work in the grading, sorting and packing line

This section includes work 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 undertaking repetitive work over the working day – particular forms of manual handling risks. Other mechanical hazards must also be controlled.

Hazard and risk	Risk controls
Access to work station Injury can occur if access to any workstation is not clear and free from obstacles and tripping hazards. Produce left on the floor poses risk of slipping and falling. Access to raised workstations can result in trips and falls and serious injury.	Access to each work station should be free from obstacles and tripping hazards. Strict adherence to rules that ensure that dropped produce is picked up and binned should be a requirement of the packing shed.
Handling produce Produce being graded and packed may pose risks from surface contamination by sap, chemicals and soil causing skin conditions, infection or poisoning due to absorption of chemicals through the skin.	Gloves should be provide and worn that are suitable for the produce being handled, the task being undertaken and/or the chemical of potential exposure. 

Hazard and risk	Risk controls
Repetitive manual work Standing to work on hard surfaces such as a concrete floor causes pressure on feet, large joints and backs, and is associated with musculoskeletal pain and injury. Pain, fatigue and injury to muscles and joints including back, neck, shoulders and wrists is a high 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. Work rates that are too high are associated with injury. Workers who are tired and in pain are much less productive and are at risk of injury. 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. Cartons and packages that are heavy and/or awkward to lift and carry pose risk of back and other musculoskeletal damage. 	The safety and wellbeing of workers should be a key issue in planning and designing the grading and packing line. However, modifications can be made in the shorter term to existing systems to achieve improved safety. Where work is undertaken in standing position on a concrete floor, consider laying rubber matting. 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. Provide sitting and standing options at workstations, and adjustable working height to accommodate the height of workers. 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. 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. Where possible job rotation should be adopted as usual practice, taking into account the needs of the individuals in the work team. 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 workers or workers returning to work after an absence of more than 2 weeks may need a period of adjustment. All new workers should receive induction and training to safely undertaken work in the packing line, and be made aware that early reporting of problems is encouraged.

Occupational Overuse Syndrome

(based on information provided by NOHSC)

Occupational overuse syndrome (OOS) is also known as repetition strain injury (RSI). It is a collective term for a range of conditions characterised by discomfort or persistent pain in muscles, tendons and other soft tissues in the back, neck, shoulder, elbows, wrists, hands or fingers.

OOS may affect workers in any occupation, particularly those doing tasks which involve repetitive or forceful movement of both arms, and/or maintenance of constrained or awkward postures.

Process work, including assembly line, sorting, packing and press operations, poses risk of OOS.

Occupational overuse injuries can be serious and debilitating:

- People suffering from these injuries often need time off work.
- Unplanned time off work can cause disruption to the business' productivity.
- Workers' compensation claims for these injuries can be costly.

The approach to preventing occupational overuse injuries generally involves:

- Avoiding risks in the first place by safe design of plant, work processes, equipment and products.
- The identification, assessment and control of risks arising from occupational overuse
- Providing training and information to employees on correct work methods and postures and the correct use of tools, machinery and other equipment.

Suggested practical solutions which can help to reduce the risk of occupational overuse injuries include:

- Reorganise work to mix repetitive and non-repetitive activities.
- Introduce frequent, short, rest breaks if the job cannot be varied or rotated.
- Review work rates to ensure they are realistic and are within employees' physical and psychological capabilities.
- Use ergonomically designed chairs or stools that can be adjusted to suit employees of different sizes.
- Rearrange the work area so that materials, equipment and controls can be easily reached without stretching or twisting.
- Hand tools for repetitive tasks should be a comfortable size, shape and weight, be well-balanced with a comfortable grip and need no more than reasonable force to operate.
- If the job needs precise movements, make sure the task is done slightly above elbow level.
- If the job needs a lot of muscle strength, make sure the task is done slightly below elbow level.

Hazard and risk	Risk controls
Mechanical hazards of the conveyor system	
Exposed moving parts in any area of the conveyor systems may cause risk of crush injury to workers and/or visitors and bystanders.	The conveyor system should be free of pinch points that are accessible by workers. Guarding or other engineering solutions should be instituted to ensure that workers cannot be harmed.
Pinch points are common at the point where the conveyor comes into contact with the rigid frame of the system.	Rules and supervision to ensure that guards are kept in place.
Unguarded moving parts such as belts, flywheels, cranking points, drive shafts, pulleys etc are associated with crush injury in packing sheds.	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.

3.7 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 risk	Risk controls
Buying a forklift Purchasing a forklift that will meet the requirements of your packing shed operation and meet your safety requirements will reduce risk of injury. Injury risk may be associated with: • Loads exceeding the lifting capacity increasing likelihood of tipping and rollover • Poor operator protection • 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 • Operation of internal combustion engines in enclosed area – resulting in carbon monoxide poisoning and/or oxygen depletion 	Consult with workers over features to be taken into account when buying a new forklift. The operator knows the tasks and operational needs. Ensure that the forklift has a stamped capacity plate containing: • Make, model and serial number • Rated load capacity • Mast tilt • Maximum lift height • Tyre pressure • Gross vehicle weight and steer axle load, or drive and steer axle loads. Ensure that forklift's lifting capacity exceeds current and planned needs 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 entry and exit. 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.

Hazard and risk	Risk controls
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. Allowing individuals to operate forklifts without the appropriate National Plant Operators Certification will be a breech of State OHS laws. 	Forklift operators should possess a national certificate of competency for *Forklift Truck Operation*. Workers who operate forklifts should be trained and assessed as competent with the forklifts used in the packing shed. 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 of specific forklift including control positions and functions • Reporting of hazards • Servicing, maintenance and repair responsibilities. Training and assessment should be recorded. Workplace licenses may be issued as part of this recording system.
Forklift Maintenance Injury risk is increased of maintenance is neglected. Injury risk is high during maintenance.	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 removed from work for maintenance or repair appropriate tags and warning signs should be used to prevent use. Further forklifts should be immobilised during maintenance by doing the following: • 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 eg 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. 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

Forklift Pre-operation checklist

Prior to operation the forklift operator should:

- Check the capacity plate to ensure that the forklift is able to handle the days tasks
- Inspect the lift and tilt mechanisms including mast, hydraulic cylinders, chains and cables
- Check fluid levels including, engine oil and coolant, hydraulic and transmission oil, brake fluid and battery water.
- Check under the forklift for any fluid leaks
- Check fuel level
- Check tyres for correct pressure and any cracks
- Check that warning lights, horn and reversing beeper work.
- Check that brakes, steering, mast and tilt controls work
- Check seat position and condition

Forklift Rules of Operation

No passenger policy

Pay regard to pedestrians where there are shared traffic areas

Speed should be managed to reduce the risk of runover and forklift rollover

- Forklifts should be speed limited
- Speed limits should be signed

Do not leave internal combustion engines to idle in enclosed or semi-enclosed areas.

When parking forklifts:

- Park on level ground
- Lower attachments
- Apply park brake and place into low gear
- Remove key
- On LPG driven forklifts shut off the fuel isolating valve.

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.

Hazard and risk	Risk controls
Stacked pallets Stacked pallets pose risk of injury from stacks falling. 	Pallet 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 areas

Cool rooms, controlled atmospheres chambers and chambers uses for fumigant treatments should be considered to be confined spaces, pose risks to persons entering these environments and are subject to specific requirements under OHS regulations.

Hazard and risk	Risk controls
Buying a forklift Cool rooms pose risk to persons entering and remaining in the cold environment for any length of time. Other risks include injury from slips on wet floors	Doors of chamber 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 and maintained. Training is required for workers who enter confined spaces. Workplace rules restricting unauthorized persons entering cool rooms. Cool rooms should be signed appropriately indicating hazards and the authorization of persons to enter.
Controlled Atmospheres and Modified Atmospheres Use of 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.	Doors of chamber 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 and maintained. Training is required for workers who enter confined spaces. Workplace rules should be established restricting unauthorized persons entering confined spaces and controlled atmosphere cool rooms. Controlled atmosphere stores should be signed appropriately indicating hazards and the authorization of persons to enter.

Hazard and risk	Risk controls
Post harvest treatment	
Persons entering chambers used for fumigants post-harvest treatments are at risk of toxicity from the chemical.	Doors of chamber 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 and maintained. Chambers should be vented before opening to enter the chamber. Relevant personal protective equipment is required in line with label safety directions. Respirators with air supply should be available to workers entering chambers following fumigation. Training is required for workers who enter confined spaces Workplace rules restricting unauthorized persons entering confined spaces and fumigating/post harvest treatment areas. Post harvest treatment areas should be signed appropriately indicating hazards and the authorization of persons to enter.
Persons could be at risk of injury from explosions where electric motors are poorly maintained in environments where ethylene is used.	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 area

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 risk	Risk controls
Loading area The loading area and the vehicle traffic area is associated with risk of collision with workers and visitors.	The loading area should be kept clear of obstacles, provide good visibility to drivers and pedestrians in the area Signage of traffic areas should indicate speed limits and direction of traffic to ensure safety.

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
Lock-out system Serious crush injury can occur where 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.
Tools and equipment Eye and hand injury is associated with use of hand-tools and powered tools used in 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 eg goggles for grinding.

3.12 People at special risk

The employer, and/or the person in control of the packing shed workplace 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
Children and visitors	
Children are at special risk of injury in packing sheds. Farmers have responsibility to protect the safety of other visitors to the farm workplace.	Young children must not be permitted in the packing shed except under close supervision of a responsible adult. Visitors should not be permitted in the packing shed during work unless they are supervised to ensure their safety.
Contactors	
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 must be "emergency ready". Being well prepared with emergency plans and equipment will ensure that the damage to people and property is minimized when accidents happen.

Risk controls

General

Emergency plans should be prepared and communicated to all workers.

Emergency plans should include plans for dealing with injury, poisoning, fire, explosion, spills of hazardous substances and evacuation, and accounting for workers.

All workers should be aware of emergency plans at induction, and be regularly updated.

Location of telephones and emergency numbers for ambulance, fire, police and emergency services should be included in plans and 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. OHS policies and procedures

4.1 Induction form for new workers

The safety induction form (overleaf) provides horticulture employers with a proposed approach to safety induction for new workers.

It should be noted:

1. That this form is for use as an introduction to safety only – it is a preliminary communication to new workers about the importance of safety on the property.

Specific safety induction and safe work methods statements are needed for all jobs that workers will undertake.

4.2 Managing Horticulture Production Safety - Hazard checklist and Business Plan

Horticultural producers can obtain a copy of the Managing Horticulture Production Safety kit through Farmsafe Australia, or can download a copy on the Farmsafe Australia website. www.farmsafe.org.au.

5. 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

Australian Capital Territory
ACT WorkCover
Ph: 02 6205 020
www.workcover.act.gov.au

Victoria
Victorian WorkCover Authority
Ph: 1800 136 08
www.workcover.vic.gov.au

Tasmania
WorkCover Tasmania
Ph: 1300 366 322
www.workcover.tas.gov.au

South Australia
WorkCover Corporation
Ph: 13 18 55
www.workcover.com

Western Australia
WorkSafe – Consumer and Employment Protection
Ph: 08 9327 880
www.safetyline.wa.gov.au

Northern Territory
Northern Territory WorkSafe
Ph: 1800 019 115
www.nt.gov.au/deet/worksafe

Queensland
Department of Industrial Relations – Workplace Health and Safety
Ph: 1300 369 915
www.whs.qld.gov.au

National Contacts

National Occupational Health and Safety Commission (NOHSC)
Ph: 02 6279 100
www.nohsc.gov.au

Standards Australia
Ph: 1300 65 46 46
www.standards.com.au

Farmsafe Australia
Ph: 02 6752 8218
www.farmsafe.org.au

Australian Centre for Agricultural Health and Safety
Ph: 02 6752 8210
www.acahs.med.usyd.edu.au