

PIL313A Coordinate preparation and storage of permaculture products.

This competency standard covers the process of coordinating the preparation and storage of permaculture products. It requires knowledge of permaculture principles and ethics, integrated pest management principles, and handling and storage requirements of products. Coordinating the preparation and storage of permaculture products requires the ability to plan for treatment of permaculture products, coordinate treatment and preparation of permaculture products, implement treatments, storage and presentation requirements.

Element	Performance Criteria
1 Plan for treatment of permaculture products	1.1 Treatment work to be performed is identified according to enterprise procedures and confirmed with the supervisor
	1.2 Materials, tools, equipment and machinery are selected according to enterprise work procedures
	1.3 Pre-operational and safety checks are carried out on tools, equipment and machinery according to manufacturers specifications and enterprise work procedures
	1.4 OHS hazards are identified, risks assessed, controls implemented and reported to the supervisor
	1.5 Suitable safety and personal protective equipment (PPE) are selected, used and maintained
2 Coordinate treatment and preparation of permaculture products	2.1 Enterprise work team is identified and tasks are coordinated in a sequential, timely and effective manner in consultation with the supervisor
	2.2 Operations are undertaken according to OHS requirements and with due consideration of the environmental implications
	2.3 A clean, safe and hygienic work area is

			maintained throughout and on completion of work
3	Implement treatments	3.1	Harvested produce and products are graded and labelled according to the marketing plan and enterprise work procedures
		3.2	Products that do not meet specifications and enterprise standards are identified and disposed of according to enterprise environmental procedures
		3.3	Treatments are selected according to harvested products requirements, the enterprise integrated pest management strategy and the marketing plan
		3.4	Timing, rate, application method, environmental requirements and handling techniques conform to the requirements of the harvested products, enterprise work procedures and industry best practice
		3.5	Postharvest practices are economical, methodical, meet established work schedules and minimise damage to products
		3.6	Tools, equipment and machinery are cleaned and maintained according to enterprise work procedures
4	Implement presentation requirements of products	4.1	Packing and presentation requirements specified in the marketing plan and enterprise work procedures are reviewed and operational tasks determined
		4.2	Packing and presentation of products conform to the requirements of the harvested product, the marketing plan and industry best practice
		4.3	Packing and presentation processes are monitored and remedial action taken where necessary
		4.4	Packing and presentation processes are recorded according to enterprise work procedures

5	Implement storage requirements of products	5.1	Storage requirements specified in the marketing plan and enterprise work procedures are reviewed and operational tasks determined
		5.2	Storage and handling of products conforms to the requirements of the harvested products, the marketing plan and industry best practice
		5.3	Storage processes and facilities are monitored and remedial action taken where necessary
		5.4	Storage processes and conditions are recorded according to enterprise work procedures

Range of Variables

The Range of Variables explains the contexts within which the performance and knowledge requirements of this standard may be assessed. The scope of variables chosen in particular training and assessment requirements may depend on the work situations available.

What postharvest operations may apply to this standard?	Postharvest operations may include transporting harvested products from the field to postharvest processing or storage facilities, grading, applying treatments, packing, labelling and storing harvested products
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How may the marketing plan affect the implementation of a postharvest program?	The marketing plan will address client specifications that may include quality of plant products (and various grades) such as variety, shape, size, weight, length, colour, maturity, moisture content, ripeness, texture, skin condition, blemishes, bud count and health which are subject to seasonal and market forces. Client preferences may also specify packaging materials, containers, filling techniques, labelling and storage requirements from field to client.
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What enterprise work procedures may apply to this standard?	Work procedures will be based on sound permaculture principles and practices and may include supervisors oral or written instructions, permaculture principles and zone and sector planning, postharvest program or production schedule, marketing plan, enterprise standard operating procedures (SOP), specifications, routine
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	<p>maintenance schedules, work notes; industry best practice guidelines on quality, food safety and hygiene; product labels and Material Safety Data Sheets (MSDS); manufacturers service specifications and operators manuals; waste disposal, recycling and re-use guidelines; and OHS procedures.</p>
<p>What materials, tools, equipment and machinery may be used to implement a postharvest program?</p>	<p>Materials may include preservatives, appropriate chemicals, and labels.</p> <p>Tools, equipment and machinery may include tractors, trailers, light trucks, forklifts, snips, knives, gloves, containers, grading machinery, washers, brushes, dryers, labelling devices, packing tools, scales, pallets, hand trolleys and lifting aids, coolrooms and storage facilities.</p>
<p>What OHS hazards may be associated with implementing a postharvest program?</p>	<p>Hazards may include a wet working environment including electricity, solar radiation, dust, pollen, soil-borne micro-organisms, noise, hazardous substances, confined spaces, sharp hand tools and equipment, manual handling, slippery or uneven surfaces, and moving equipment, machinery and vehicles.</p>
<p>What safety equipment may be required?</p>	<p>Safety equipment may include signage and barriers, and operational safety exits from coolrooms and gassing chambers.</p>
<p>What PPE may be required when implementing a postharvest program?</p>	<p>PPE may include hat, boots, overalls, gloves, apron, waterproof clothing, spray clothing, goggles, face mask, face guard, hearing protection, sunscreen lotion and hard hat.</p>
<p>What OHS requirements may be relevant to this standard?</p>	<p>OHS requirements may include identifying hazards; assessing and reporting risks; cleaning, maintaining and storing tools, equipment and machinery; appropriate use of PPE; safe operation of tools, equipment and machinery, ensuring operational safety exits from coolrooms and gassing chambers; confined spaces policy and procedures; safe handling, use and storage of hazardous substances; correct manual handling; basic first aid; personal hygiene and reporting problems to supervisors.</p>
<p>How may a clean, safe and hygienic work area be maintained?</p>	<p>Tasks may include disabling unused tools, equipment and machinery and storing neatly out of the way of postharvest activities, safely storing materials, using signage and safety barriers during and removing after</p>

	<p>postharvest activities are completed; cleaning, fumigating or sterilising postharvest equipment and storage facilities; and swiftly and efficiently removing and processing debris from the work area.</p>
<p>How will enterprise environmental procedures affect the implementation of a postharvest program?</p>	<p>Enterprise environmental procedures may include procedures for the treatment of out-of-standard products, value adding and recycling residual and 'waste' materials.</p>
<p>What postharvest treatments may apply to this standard?</p>	<p>Postharvest treatments may include removal of dirt and foreign material, stripping excess leaves and/or trimming, brushing, washing/hydration, drying, applying preservatives, or dipping, ripening, observing quarantine requirements and storing in a controlled environment. Treatments should comply with appropriate organic standards.</p>
<p>What postharvest practices may be employed to minimise damage to products?</p>	<p>Field handling practices may include observing the fill level of containers, lifting rather than dragging containers to avoid contact with dirt, correctly stacking containers on transport to reduce the risk of bruising, squashing or damaging the products, and smoothly transporting the harvested products to the postharvest processing or storage facility.</p> <p>Harvested crops may need to be stored in the shade, in water-filled or covered containers in the field. In the shed storage may occur in a temperature-controlled environment such as a coolroom. These may include forced air coolrooms for tablegrapes, hydro coolrooms for stonefruit and vacuum coolrooms for mushrooms.</p> <p>Products damage may be minimised by wearing gloves, maintaining sharp tools, placing rather than dropping products into containers, cutting fingernails, observing fill heights, arrangement of products and packing instructions for containers, and correctly stacking containers on transport.</p>
<p>What packing and presentation requirements will need to be determined?</p>	<p>Packing and presentation requirements for specific products and clients may include specifications for packaging materials and containers, filling techniques and arrangement of products within the container, and for labelling.</p>

<p>What storage requirements will need to be determined?</p>	<p>Storage requirements for specific products and clients may include specifications for storage facilities, environmental conditions such as temperature, humidity and light, length of storage, position in the storage facility and cleaning processes to ensure a level of hygiene that protects the quality and health status of the stored products.</p>
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Evidence Guide

What evidence is required to demonstrate competence for this standard as a whole?

Competence in coordinating the preparation and storage of permaculture products requires evidence that a person can coordinate postharvest operations, implement postharvest treatments and storage requirements according to industry best practice and market specifications.

The skills and knowledge required to coordinate the preparation and storage of permaculture products must be **transferable** to different work environments. For example, this could include different crops, harvesting methods and enterprises.

<p>What specific knowledge is needed to achieve the performance criteria?</p>	<p>Knowledge and understanding are essential to apply this standard in the workplace, to transfer the skills to other contexts and to deal with unplanned events. The knowledge requirements for this competency standard are listed below:</p> <ul style="list-style-type: none"> • Permaculture principles and ethics • The attributes of products in relation to the desired quality of products to be presented to the client • Integrated Pest Management principles and enterprise policy • The importance of maintaining the quality of products including handling and storage requirements • The correct storage conditions for a range of products • Hygiene issues in the handling and storage of plant products
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<p>What specific skills are needed to achieve the performance criteria?</p>	<p>To achieve the performance criteria, appropriate literacy and numeracy levels as well as some complementary skills are required. These include the ability to:</p> <ul style="list-style-type: none"> • Communicate orally and in writing with team members and supervisors
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- Interpret and confirm chemical labels, MSDS, work instructions and enterprise work procedures
- Record information about work activities on proformas
- Participate in teams and contribute to team objectives
- Count and calculate quantities, treatment application rates and storage requirements
- Correctly dispose of chemical substances, their containers and other waste materials to minimise environmental impact
- Implement enterprise OHS policy and procedures.

What processes should be applied to this competency standard?

There are a number of processes that are learnt throughout work and life which are required in all jobs. They are fundamental processes and generally transferable to other work functions. Some of these are covered by the **key competencies**, although others may be added. The questions below highlight how these processes are applied in this competency standard. Following each question a number in brackets indicates the level to which the key competency needs to be demonstrated where 0 = not required, 1 = perform the process, 2 = perform and administer the process and 3 = perform, administer and design the process.

1. How can communication of ideas and information (2) be applied?	Written, oral and tele- communication of ideas and information relating to postharvest activities and problems encountered may be required with the work group and supervisor.
2. How can information be collected, analysed and organised (2) ?	Enterprise work procedures and client specifications in the marketing plan should be consulted, interpreted and applied to coordinate the postharvest program with further clarification sought from the supervisor when necessary.
3. How are activities planned and organised (2) ?	Work activities for the work group and self will be planned prior to and adjusted during the postharvest program.
4. How can team work (2) be applied?	The postharvest program will involve facilitating and leading members of a team to complete the program on time and budget.
5. How can the use of mathematical ideas and techniques (2) be applied?	Mathematical application will be required to calculate and apply the spatial and logistical requirements of the postharvest program.

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| 6. How can problem solving skills (2) be applied? | Products quality issues, the selection and sourcing of treatments and products, coordination with the work group and work activities may require negotiation and the ability to devise alternative courses of action. |
| 7. How can the use of technology (2) be applied? | Technological understanding will be required to access and apply program specifications, undertake postharvest activities, communicate, report and keep records. |
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Are there other competency standards that could be assessed with this one?

This competency standard can be assessed on its own or in combination with other competencies relevant to the job function.

For information about assessing this competency standard for consistent performance and where and how it may be assessed, refer to the **Permaculture International Ltd Course Documentation**.
