

PIL206A Establish and maintain permaculture crops

This competency standard covers the process of establishing and maintaining plants in a permaculture cropping system. This work is likely to be under routine supervision with intermittent checking. Responsibility for some roles and coordination within a team may be required. Competency at this level requires the application of knowledge and skills to a range of planting tasks, including site preparation, the handling and planting of a range of planting materials, and the maintenance of crops.

Element		Performance Criteria	
1	Prepare for plant establishment	1.1	Instructions about establishing plants are interpreted and clarified with the supervisor
		1.2	Machinery, equipment and tools are selected and prepared for the task being undertaken
		1.3	OHS hazards are identified, risks assessed and reported to the supervisor
		1.4	The environmental implications of the plant establishment program are identified and discussed with the supervisor
		1.5	Suitable personal protective equipment (PPE) is selected, used and maintained
2	Prepare the site for planting	2.1	Old plants, weeds and other residual materials are removed or slashed and treated in full consideration of environmental implications
		2.2	Soil treatments/amendments are applied according to supervisors instructions
		2.3	Plant protection is implemented according to enterprise guidelines
		2.6	The planting pattern is marked out according to the plant establishment plan, enterprise guidelines and plant guilds and companion planting associations
		2.7	Machinery, equipment and tools are operated according to enterprise guidelines
3	Carry out planting operations	3.1	Planting material is selected according to

		enterprise quality standards
	3.2	Material for planting to be planted is maintained under conditions which will ensure maximum viability
	3.3	Material for planting is handled and transported to the site with no signs of transport damage
	3.4	Planting is carried out according to planting plan, guild, plant companion associations and patterns.

4	Maintain plants	4.1	Treatments are applied to plantings according to supervisors instructions
		4.2	Water is applied to plantings according to the irrigation schedule and established sustainable farming practices
		4.3	Treatments to counter soil nutrient depletion including legume planting, compost, and other approved organic treatments are applied

		4.4	Plants are trained according to supervisors directions
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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 instructions may be relevant to this standard?	Instructions may include Standard Operating Procedures (SOP), enterprise policy and procedures in regard plant establishment, and verbal directions from supervisor, or enterprise manager.
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What machinery, equipment and tools are likely to be used for plant maintenance?	Machinery, equipment and tools may include tractors, rotary hoes, cultivators, fertiliser spreaders, surveying and measuring equipment, seeding or planting tools, equipment and machinery.
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What OHS hazards may be associated with crop establishment?	Hazards may include, use of machinery, moving machinery and machinery parts, falling trees and plant debris, manual handling, solar radiation, dust, noise. Also insect, animal and snake bites and stings.
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What are the environmental implications associated with crop establishment?	Negative environmental implications may include the contamination of off-site ground water or soils from solids, debris, nutrients or chemicals; depletion of soil nutrients or humus levels, land disturbance, spread of noxious weeds, and water run-off.
What PPE may be required to undertake turf renovation?	PPE may include hat, boots, overalls, gloves, goggles, respirator or face mask, hearing protection, sunscreen lotion and hard hat.
How may the residual materials be treated ?	Treatments may include recycling, leaving in-situ, ploughing organic residues into the soil, mulching or composting of plant material, bagging and removal of seed heads, and disposal according to industry requirements and standards.
What soil treatments/ amendments may apply to this standard?	Soil treatments/amendments may include gypsum, organic matter, appropriate fertilisers and composts, or the planting of a temporary or permanent cover crop.
What type of plant protection may be required for crop establishment?	Plant protection may include wind protection such as artificial structures, permanent shelter belts or temporary plantings of grasses; trellises and stakes; and mulches.
What types of planting material may be used to establish a crop?	Planting material may include seeds, seedlings, runners, cuttings, marcots or bare rooted trees.
What treatments may apply to the maintenance of plants?	Treatments may include pest and disease prevention and control, weed prevention and control, frost protection, fertilisers, mulch.
In what way may plants be trained ?	Training may involve thinning, trimming, staking or trellising.

Evidence Guide

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

Competence in establishing and maintaining plants in a permaculture system requires evidence that a person can interpret a basic planting plan, prepare the soil and site for planting, install and maintain plants.

The skills and knowledge required to establish and maintain plants in a permaculture system must be **transferable** to a different work environment. For example, this will include different plants, planting techniques and enterprise procedures.

What specific	Knowledge and understanding are essential to apply this
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knowledge is needed to achieve the performance criteria?

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:

- Permaculture principles and ethics.
- Principles of sustainable horticultural practices.
- Planting techniques
- Basic plant nutrition and soils.
- Companion planting
- Plant growth and development.
- Methods of waste disposal causing minimal impact on the environment.

What specific skills are needed to achieve the performance criteria?

To achieve the performance criteria, appropriate literacy and numeracy levels as well as some complementary skills are required. These include the ability to:

- Prepare for plant establishment
- Prepare the site for planting
- Carry out planting operations
- Maintain plants

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 (1)** be applied?

Ideas and information relating to preparation, planting and maintenance problems encountered should be discussed with other members of the work team and the supervisor.

2. How can **information be collected, analysed and organised (1)**?

Enterprise work procedures should be consulted, interpreted and applied to tasks with further clarification sought from the supervisor where necessary.

3. How are **activities planned**

Equipment, materials and work procedures will

and organised (1)?	need to be arranged before and between work periods and there may be some responsibility for coordinating work with others.
4. How can team work (1) be applied?	Coordination and participation with other members of a team will often be required to complete specified tasks and quality requirements.
5. How can the use of mathematical ideas and techniques (1) be applied?	Mathematical concepts will be required to count and tally quantities as required.
6. How can problem solving skills (1) be applied?	Problems relating to daily work activities will need to be identified, reported and discussed with other members of the work team and the supervisor.
7. How can the use of technology (1) be applied?	Technology may be applied in the preparation, use and maintenance of tools, equipment and machinery.

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**.
