

## PIL305A Co-ordinate a permaculture crop regulation program

This competency standard covers the process of coordinating a crop regulation program in which thinning and pruning of flower, fruit or vegetable crops is undertaken to control yield and quality. Crop regulation methods may include manual thinning, chemical thinning, selective harvesting, training, summer and winter pruning, hedging, skirting, topping and trimming. Irrigation and plant nutrition programs are covered in other units of competency.

Coordinating a crop regulation program is likely to be under limited supervision from others with checking only related to overall progress. The work requires the application of horticultural knowledge and a broad range of horticultural skills. Coordination is usually done within routines, methods and procedures where some discretion and judgement are required in the selection of equipment and materials, organisation of work and the achievement of outcomes within time and budgetary constraints.

Element		Performance Criteria	
1	Prepare for the crop regulation program	1.1	The site and operational requirements of the <b>crop regulation program</b> are identified according to the site plan and <b>enterprise work procedures</b>
		1.2	<b>Crop regulation materials</b> are selected according to enterprise work procedures
		1.3	<b>Services</b> are located using site plans and in consultation with the supervisor
		1.4	<b>OHS hazards</b> are identified, risks assessed, controls implemented and reported to the supervisor
		1.5	Suitable <b>safety</b> and <b>personal protective equipment (PPE)</b> are selected, used and maintained
2	Prepare crop regulation equipment	2.1	<b>Tools, equipment and machinery</b> are selected according to enterprise work procedures

		2.2	Pre-operational and safety checks are carried out on tools, equipment and machinery according to manufacturers specifications and enterprise work procedures
		2.3	Tools, equipment and machinery are calibrated and adjusted according to manufacturers guidelines and enterprise work procedures
3	Implement the crop regulation program	3.1	Enterprise work team and contractors are identified and work tasks are coordinated in a sequential, timely and effective manner in consultation with the supervisor
		3.2	Work pattern is planned to cover the site in an efficient, sequential and coordinated manner according to enterprise work procedures
		3.3	Crop regulation tasks are undertaken according to <b>OHS requirements</b> and with due consideration of the <b>environmental implications</b>
		3.4	Crop regulation tasks are monitored and remedial action is undertaken where necessary to achieve program objectives
		3.5	A <b>clean and safe work area</b> is maintained throughout and on completion of work
4	Complete crop regulation activities	4.1	<b>Waste material</b> is removed from the site and disposed of in an environmentally aware and safe manner according to enterprise work procedures
		4.2	Tools, equipment and machinery are cleaned, maintained and stored according to enterprise work procedures
		4.3	Work outcomes are recorded or reported to the supervisor 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 tasks may be undertaken in the <b>crop regulation program</b> ?	The program may include manual thinning, selective harvesting, training, summer and winter pruning, hedging, skirting, topping and trimming.
What <b>enterprise work procedures</b> may apply to this standard?	Work procedures will be based on sound horticultural principles and practices and may include supervisors oral or written instructions, crop regulation program, enterprise standard operating procedures (SOP), specifications, routine maintenance schedules, work notes; product labels and Material Safety Data Sheets (MSDS); manufacturers service specifications and operators manuals; waste disposal, recycling and re-use guidelines; and OHS procedures.
What <b>crop regulation materials</b> may be selected for the program?	Materials may include trellising and training materials.
What <b>services</b> may need to be located?	Services may include water supply, gas, power (electricity), telecommunications, irrigation, stormwater and drainage including passive water catchment and irrigation systems.
What <b>OHS hazards</b> may be associated with the crop regulation program?	Hazards may include disturbance or interruption of services, solar radiation, dust, noise, soil- and air-borne micro-organisms, some chemicals in treatments, sharp hand tools and equipment, manual handling, moving vehicles, machinery and machinery parts, uneven surfaces and flying objects.
What <b>safety equipment</b> may be required?	Safety equipment may include signage and barriers.
What <b>PPE</b> may be required when regulating crops?	PPE may include hat, boots, overalls, gloves, spray clothing, goggles, respirator or face mask, face guard, hearing protection, sunscreen lotion and hard hat.

What **tools, equipment and machinery** may be required for the crop regulation program?

Application equipment and machinery may include backpack spray equipment, tractors and trailed or 3 point linkage spray equipment, pumps and pump fittings.

Pruning tools, equipment and machinery may include knives, handsaws, hand and battery-powered secateurs, pneumatic snips and compressor, hedge trimmers both manual and powered, small chainsaws, specialised mechanical pruning machinery, chippers, ladders, picking platforms, powered ladders and scissor lifts.

Plant training equipment may include trellising and specialised training systems.

What **OHS requirements** may be relevant to this standard?

OHS requirements may include identifying hazards; assessing risks and implementing controls; cleaning, maintaining and storing tools, equipment and machinery; appropriate use of PPE including sun protection; safe operation of tools, equipment and machinery; safe handling, use and storage of chemicals and hazardous substances; correct manual handling; basic first aid; personal hygiene and reporting problems to supervisors.

What **environmental implications** may be associated with the regulation of crops?

Environmental impacts may arise where crop regulation activities produce excess noise, dust or water run-off, or off-site ground water or soils are contaminated from solids, debris, nutrients, chemicals and water run-off.

How may a **clean and safe work area** be maintained?

Tasks may include disabling unused tools, equipment and machinery and storing neatly out of the way of crop regulation activities; safely storing materials on site; using signage and safety barriers during and removing after crop regulation activities are completed; and swiftly and efficiently removing and processing debris and waste from the work area.

What **waste material** may be relevant to this standard?

Waste material may include plant debris, litter and broken components.

Plant-based material may be mulched or composted, plastic, metal, paper-based materials may be recycled, re-used, returned to the manufacturer or disposed of according to enterprise work procedures.

## Evidence Guide

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

Competence in coordinating a crop regulation program requires evidence that a person is able to prepare for crop regulation activities, coordinate work groups and implement crop regulation activities to achieve enterprise crop production targets in terms of yield and quality.

The skills and knowledge required to coordinate a crop regulation program must be **transferable** to a different work environment. For example, this could include different crops, canopy management requirements and workplaces.

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#### What specific knowledge is needed to achieve the performance criteria?

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:

- Permaculture principles and practices relating to producing a yield
- Principles of thinning and pruning and the methods used to achieve crop regulation goals
- Effects on plant growth, habit and production levels of thinning and pruning operations in relation to the market goals of the enterprise
- Maintenance of soil health and impact on production
- Enterprise quality procedures and characteristics of a crop relative to varying market requirements

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#### 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:

- Communicate orally and in writing with work team members, supervisors and contractors
- Utilise proforma recording, reporting and work procedure documents
- Interpret site plans and crop regulation specifications
- Measure quantities, calculate material requirements, area, volume, ratios and application rates, and calibrate machinery
- Coordinate work group, contractors and own activities

- Monitor enterprise plants for quality
- Minimise noise, dust, high activity vehicle traffic and water run-off to prevent nuisance-level environmental disturbance.

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### 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.

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1. How can <b>communication of ideas and information (1)</b> be applied?	Written, oral and tele-communication of ideas and information relating to crop regulation activities and problems encountered will be required with the work group, supervisor and contractors.
2. How can <b>information be collected, analysed and organised (1)</b> ?	Enterprise work procedures and site plan should be consulted, interpreted and applied to coordinate crop regulation activities with further clarification sought from the supervisor when necessary.
3. How are <b>activities planned and organised (1)</b> ?	Work activities for the work group, contractors and self will be planned prior to and adjusted during the crop regulation program.
4. How can <b>team work (2)</b> be applied?	The crop regulation program will involve facilitating and leading members of a team to complete the program on time and budget.
5. How can the use of <b>mathematical ideas and techniques (1)</b> be applied?	Mathematical application will be required to calculate the spatial and logistical requirements of the crop regulation program.
6. How can <b>problem solving skills (1)</b> be applied?	Site contingencies, personnel difficulties and timeline failures may require problem solving techniques.
7. How can the <b>use of technology (1)</b> be applied?	Technological understanding will be required to use crop regulation tools, equipment and machinery, undertake crop regulation activities, communicate 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.

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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**.

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