

Title	Explain agrichemical use for primary sector applications		
Level	3	Credits	6

Purpose	<p>This unit standard is for people working in sectors that handle agrichemicals.</p> <p>People credited with this unit standard are able to explain: modes of action of agrichemicals; agrichemical formulations; the uses of spray additives; resistance to agrichemicals; and agrichemical degradation.</p>
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Classification	Primary Sector > Plant Pest, Weed, and Disease Control
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Available grade	Achieved
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Guidance Information

- Legislation and regulations relevant to this unit standard include but is not limited to:
 - Agricultural Compounds and Veterinary Medicines Act 1997;
 - Hazardous Substances and New Organisms Act 1996;
 - Health and Safety at Work Act 2015;
 - Resource Management Act 1991;
 - Local regional and territorial authority regulatory requirements.
- The New Zealand Standard applicable to this unit standard is NZS 8409:2004 *Management of agrichemicals*, or subsequent replacement, available from www.standards.govt.nz.
- Agrichemical* – any substance, whether inorganic or organic, man-made or naturally occurring, modified or in its original state, that is used to eradicate, modify or control flora and fauna. It is a subset of agricultural compounds and includes pesticides, spray additives, fertilisers, vertebrate pest control products, and oral nutrition products.

Outcomes and performance criteria

Outcome 1

Explain modes of action of agrichemicals when used for primary industry applications.

Performance criteria

- 1.1 Explain invertebrate pesticides in terms of their modes of action to control invertebrate pests.
- Range contact, ingestion, systemic, fumigant, ovicidal.
- 1.2 Explain agrichemicals in terms of their modes of action to control diseases.
- Range protectant, eradicant, systemic.
- 1.3 Explain herbicides in terms of their modes of action to control plant growth.
- Range contact, dessicant, translocated, selective, non-selective, residual, hormone-type, pre-emergence, post-emergence.
- 1.4 Explain plant growth regulators in terms of their modes of action to regulate plant growth.
- Range plant growth regulators may include – dormancy breaker, growth regulator, crop load regulator, ripening agent; evidence of one plant growth regulator is required.

Outcome 2

Explain agrichemical formulations used for primary industry applications.

Range may include but is not limited to – emulsifiable concentrates, soluble concentrates, wettable powders, water dispersible granules, suspension concentrates, prills, granules, pellets, dusts, gases, aerosols, baits; evidence of at least five is required.

Performance criteria

- 2.1 Explain agrichemical formulations in relation to how they work.
- 2.2 Explain agrichemical formulations in terms of their advantages and disadvantages for primary industry applications.
- 2.3 Explain agrichemical formulations in terms of potential incompatibility issues between formulations.

Outcome 3

Explain the uses of spray additives.

Range may include but is not limited to – surfactants, buffers, spray drift reducers, penetrants, markers, stickers, bulking agents, carriers, stenching agents, emetics; evidence of at least four is required.

Performance criteria

3.1 Explain spray additives in terms of their uses.

Outcome 4

Explain resistance to agrichemicals.

Performance criteria

4.1 Explain agrichemical resistance in terms of how it develops.

4.2 Explain agrichemical resistance in terms of the management strategies required to prevent and mitigate its occurrence.

Outcome 5

Explain agrichemical degradation.

Performance criteria

5.1 Explain agrichemical degradation in the environment in terms of the process.

Range hydrolysis, photodegradation, microbial or oxidation.

5.2 Explain the degradation of agrichemicals in terms of absorption and adsorption and how they persist in the environment.

5.3 Explain the detrimental consequences of agrichemical degradation in terms of the impact on the environment.

Range may include but is not limited to leaching, soil residues, crop residues, surface run-off, food-chain accumulation; evidence of two detrimental consequences is required.

Planned review date	31 December 2024
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Status information and last date for assessment for superseded versions

Process	Version	Date	Last Date for Assessment
Registration	1	27 May 2005	31 December 2013
Review	2	18 August 2011	31 December 2022
Review	3	28 November 2019	N/A

Consent and Moderation Requirements (CMR) reference	0232
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This CMR can be accessed at <http://www.nzqa.govt.nz/framework/search/index.do>.

Comments on this unit standard

Please contact the Primary Industry Training Organisation standards@primaryito.ac.nz if you wish to suggest changes to the content of this unit standard.