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| **Title** | **Describe nutrient applicators and nutrient application, and operate nutrient-application machinery efficiently.** | | |
| **Level** | **4** | **Credits** | **4** |

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| **Purpose** | People credited with this unit standard are able to: describe the technical design of nutrient applicators and implications for nutrient application; describe nutrient-applicator certification; select nutrient-application machinery settings and operate nutrient-application machinery efficiently; and describe the consequences of poor nutrient application. |

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| **Classification** | Agriculture > General Agriculture |

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| **Available grade** | Achieved |

**Guidance Information**

1 Legislation and references
Legislation, regulations and/or industry standards relevant to this unit standard include but are not limited to the:

- Agricultural Compounds and Veterinary Medicines Act 1997;
- Hazardous Substances and New Organisms Act 1996;
- Health and Safety at Work Act 2015;
- Land Transport Act 1998;
- Resource Management Act 1991;
- The *Spreadmark Code of Practice*, available from Groundspread NZ.

Any new, amended or replacement Acts, regulations, standards, codes of practice, guidelines, or authority requirements or conditions affecting this unit standard will take precedence for assessment purposes, pending review of this unit standard.

Refer to *The Spreadmark Code of Practice* for acceptable use of industry specific terms, unless stated otherwise. For information on the use and content of *The Spreadmark Code of Practice*, contact Groundspread NZ.

2 Definition
*Industry requirements* refers to relevant policies, processes, methodologies, industry codes of practice, site specific health and safety plans, standard operating procedures, site safety plans, quality plans, work plans, traffic management plans, contract work programmes, job safety analysis, safe work method statements, job instructions, manufacturer's requirements, contract specifications, manuals, procedural documents.

3 Assessment information
Evidence presented for assessment against this unit standard must be consistent with safe working practices and be in accordance with relevant legislative and industry requirements.

## Outcomes and performance criteria

### Outcome 1

Describe the technical design of nutrient applicators and implications for nutrient application.

**Performance criteria**

1.1 Describe hopper design in terms of the varying levels of hopper loadings and feed.

1.2 Describe drag chain and belt design in terms of the use of mechanical and computer systems to control flow rate.

1.3 Describe disc design and speed in terms of control systems.

1.4 Describe nutrient-application patterns in terms of bout width, nutrient particle size, and machine set-up.

1.5 Describe the evenness of nutrient application in terms of the transverse and longitudinal coefficient of variation (CV).

1.6 Describe nutrient applicator performance in terms of nutrient build-up and poor load distribution.

### Outcome 2

Describe nutrient applicator certification.

**Performance criteria**

2.1 Describe nutrient applicator certification in terms of pre-calibration of nutrient-application machinery.

2.2 Describe nutrient-applicator certification in terms of the procedures for calibration of nutrient-application machinery, and the role of the operator and/or driver in the procedure.

2.3 Describe nutrient applicator certification in terms of post-calibration field tests for field adjustment of nutrient-application machinery.

### Outcome 3

Select nutrient-application machinery settings and operate nutrient-application machinery efficiently.

**Performance criteria**

3.1 Select settings that match nutrient characteristics, application rate, and bout width.

3.2 Match selection of areas of operation and terrain to vehicle loading.

3.3 Demonstrate safety precautions before and during nutrient application, and while servicing machinery.

3.4 Optimise nutrient application while avoiding damage to property, vehicles and equipment, through appropriate negotiation of terrain and hazards.

3.5 Take remedial action following indicators of malfunctions, in accordance with manufacturer's recommendations.

3.6 Implement techniques to minimise possible environmental damage.

Range includes but is not limited to – cut-off systems, riparian strips, buffer and soakage.

**Outcome 4**

Describe the consequences of poor nutrient application.

**Performance criteria**

4.1 Describe the consequences of poor nutrient application, including applying excessive amounts of nutrients, in terms of the environmental implications.

4.2 Describe the consequences of poor nutrient application in terms of client confidence and company reputation.

4.3 Describe the consequences of poor nutrient application in terms of civil and criminal liability.

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| **Planned review date** | 31 December 2028 |

**Status information and last date for assessment for superseded versions**

| Process | Version | Date | Last Date for Assessment |
|---|---|---|---|
| Registration | 1 | 19 April 2002 | 31 December 2018 |
| Rollover | 2 | 20 May 2008 | 31 December 2018 |
| Review | 3 | 2 November 2018 | 31 December 2018 |
| Reinstatement | 4 | 28 September 2023 | N/A |

| Consent and Moderation Requirements (CMR) reference | 0052 |
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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 Muka Tangata - People, Food and Fibre Workforce Development Council qualifications@mukatangata.nz if you wish to suggest changes to the content of this unit standard.