

<b>Title</b>	<b>Demonstrate knowledge of methods to maximise tractor efficiency during cultivation</b>		
<b>Level</b>	<b>4</b>	<b>Credits</b>	<b>4</b>

<b>Purpose</b>	<p>This unit standard is for people working in the primary industry.</p> <p>People credited with this unit standard are able to demonstrate knowledge of: the factors that affect, and methods to maximise, tractor efficiency during cultivation; the importance of matching implements to the tractor and task to achieve optimum efficiency during cultivation; and tyre features and cultivation patterns which maximise tractor efficiency.</p>
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<b>Classification</b>	Agriculture > Agricultural Vehicles and Machinery
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<b>Available grade</b>	Achieved
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### Guidance Information

None.

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### Outcomes and performance criteria

#### Outcome 1

Demonstrate knowledge of the factors that affect, and methods to maximise, tractor efficiency during cultivation.

#### Performance criteria

- 1.1 Identify methods for achieving optimum wheel slippage during cultivation.
- 1.2 Explain hydraulic draft control principles in terms of tractor efficiency during cultivation.
- 1.3 Explain the relationship between engine revolutions per minute (RPM), ground speed, and power take off (PTO) speed in terms of the most efficient use of the tractor during cultivation.
- 1.4 Explain the effect of altering tractor ballast on tractor efficiency during cultivation.

**Outcome 2**

Demonstrate knowledge of the importance of matching implements to the tractor and task to achieve optimum efficiency during cultivation.

**Performance criteria**

- 2.1 Explain the reasons for matching implements to the tractor and task in terms of achieving maximum efficiency.
- 2.2 Identify tractor and machinery combinations for different soil types in terms of their suitability to achieve optimum efficiency.

**Outcome 3**

Demonstrate knowledge of tyre features and cultivation patterns which maximise tractor efficiency.

**Performance criteria**

- 3.1 Compare different tyre treads and types in terms of their effects on tractor efficiency.
- 3.2 Explain the effect of varying tyre pressure in terms of achieving optimum tractor efficiency.
- 3.3 Compare different tyre features in terms of their effect on soil compaction.  
Range dual tyres, tyre size, tyre type, ballast.
- 3.4 Compare different cultivation patterns in terms of their effects on tractor efficiency during cultivation.

<b>Planned review date</b>	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	25 June 2002	31 December 2013
Review	2	20 May 2008	31 December 2013
Review	3	21 June 2012	31 December 2021
Review	4	24 October 2019	N/A

<b>Consent and Moderation Requirements (CMR) reference</b>	0052
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This CMR can be accessed at <http://www.nzqa.govt.nz/framework/search/index.do>.

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**Comments on this unit standard**

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