

ASSESSMENT GUIDELINES

Unit 21554

Demonstrate knowledge of safety with
agricultural chemicals.

Level 2, Credit 3, Version 1

Demonstrate knowledge of safety with agrichemicals

Unit standard 21554

Level 2, Credit 3, Version 1

Level of performance required for this unit standard

This is a level 2 unit standard. At this level trainees are expected to demonstrate the following abilities when completing assessment tasks:

- To work under general supervision, as directed; with some responsibility for the standard of the outcome achieved.
- To complete tasks that are established and familiar, with a moderate range of skill and knowledge.
- To apply basic operational knowledge, use readily available information and known solutions to solve familiar problems.

Workplace assessment:

For guidelines on Workplace Assessment, please refer to the NZHITO Workplace Assessors Manual, and for further information, please contact: NZHITO, P O Box 8638, Christchurch. Ph 03 9644 735, Fax 03 9644 737, Website: www.hortito.org.nz

Special notes:

1. This unit standard is concerned with minimising risks to the health of users from the use and handling of agrichemicals.
2. Legislation and relevant regulations relevant to this unit standard include but are not limited to – Hazardous Substances and New Organisms Act 1996, and relevant regulations; Health and Safety in Employment Act 1992.
3. The New Zealand Standard applicable to this unit standard is NZS 8409:2004 *The Management of Agrichemicals*, available from <http://www.standards.co.nz>.
4. Codes and related documentation applicable to this unit standard include but are not limited to: *Responsible Care Management System*, available from the New Zealand Chemical Industry Council (NZCIC, PO Box 5069, Wellington).

5. Definition - *agrichemical* – any substance, whether inorganic or organic, man-made or naturally occurring, modified or in its original state, that is used in any agriculture, horticulture or related activity, to eradicate, modify or control flora and fauna. It includes agricultural compounds, fertilisers, vertebrate pest control products and oral nutrition products (this definition differs to that given in NZS 8409:2004, where *agrichemicals* exclude fertilisers, vertebrate pest control products and oral nutrition products).

Acknowledgement

At the back of this assessment guide is an *Agriculture ITO* endorsed question paper, with answers attached, which has been developed for this unit standard. The attached question paper may be used by the Workplace Assessor to carry out assessment and marking of this unit standard on-job.

If you do decide to use the question paper as your method of assessment we only require you to submit the completion form to the NZHITO once the student is deemed to be competent, as is our normal practice.

**Unit 21554: Demonstrate knowledge of safety with agrichemicals.
(Apprentice copy)**

ELEMENT	Competent	Range of evidence an assessor should consider
Element 1 Describe the routes of entry of agrichemicals into the body, and types of agrichemical poisoning.	Yes/No	<ul style="list-style-type: none"> ▪ Describe agrichemicals in terms of their routes of entry into the body. Range: inhalation, dermal (including eyes), oral, injection; give evidence is required for at last three. ▪ Describe agrichemical poisoning in terms of the types. Range: acute, chronic.
Element 2 Describe how to minimise health risks to agrichemical users.	Yes/No	<ul style="list-style-type: none"> ▪ Describe safety procedures when working with agrichemicals in terms of NZS 8409:2004, and current legislation. Range: includes but is not limited to – transport, storage, measuring, mixing, applying, re-entry time or period, animal handling interval, use of protective clothing and equipment; disposal of – washings, residues, surplus spray mixtures.
Element 3 Describe the signs, symptoms, and first aid management of agrichemical poisoning.	Yes/No	<ul style="list-style-type: none"> ▪ Describe the signs and symptoms of agrichemical poisoning in terms of manufacturer’s information. ▪ Describe the information sources for agrichemical poisoning first aid. Range: evidence is required for at least three information sources. ▪ Describe the actions to be taken for agrichemical poisoning in accordance with information sources. Range: evidence is required for at least three information sources.

_____ (Name of Apprentice)

is **Competent** / **Not yet competent** in Unit Standard 21554, version 1

Signed (Assessor): _____

WPA Registration Number: _____ Date: _____

**Unit 21554: Demonstrate knowledge of safety with agrichemicals.
(Assessor copy)**

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Please send this page to your NZHITO Regional Manager, who will forward it to National Office to register the credits on your NZQA Record of Learning.

Unit 21554: Demonstrate knowledge of safety with agrichemicals.

(Name of Apprentice)

is Competent in Unit Standard 21554. (version 1)

Signed (Assessor):

WPA Registration Number: _____

Date: _____

Demonstrate Knowledge of Safety with Agrichemicals

Instructions:

1. Write your name, address and the date you hand in this Assessment in the box below.
2. Answer all questions. Use more paper if required.
3. All answers must be in your own words.
4. You must show that you have achieved the standard in all elements of the unit standard.
5. If you do not attain the standard you will have an opportunity to attempt part or all of the assessment again either orally or written, after some further study.
6. If there are any questions you don't understand, or if you have any difficulty reading the questions, please ask your tutor or supervisor for some help.
7. This is a supervised assessment. Students may have access to chemical labels, Haz notes, and Safety Data sheets and NZS 8409:2004 The Management of Agrichemicals. Students will not have access to their course notes.

Student To Complete:

Student Name:	
Address:	
Date Handed In:	
Declaration:	This assessment is all my own work (Your signature)

Assessor To Complete:

Course Number/Name:	
Standard Achieved:	Yes / No (Delete One)
Assessor's Name & Signature:	
Date:	
Comments:	
Questions to Resit:	

Assessment Retake Date:	
Standard Achieved:	Yes / No (Delete One)
Assessor's Name & Signature:	

Demonstrate Knowledge of Safety with Agrichemicals

Unit 21554

Level 2

Credits 3

Element 1

1. What are four (4) ways an Agrichemical can enter the body? For each give at least one example of how this can accidentally happen when using agrichemicals.

	Methods of Entry	An Example of How This Can Occur
1.		
2.		
3.		
4.		

2. Describe the following terms: -

1. Acute Poisoning

2. Chronic Poisoning

3. At what stage during agrichemical use are you most likely to get acute poisoning?

Element 2

4. Under the following headings list recommended safety procedures.

Agrichemical Transport

Agrichemical Storage

Measuring and Mixing Agrichemicals

Agrichemical Application

Cleaning up after you have used agrichemicals

5. (a) Where would you find two (2) sources of accurate information for what personal protective equipment is required for a specific chemical e.g. Tordon Gold.

1. _____

2. _____

(b) List five (5) pieces of Personal Protective Equipment available to an agrichemical user to protect them from poisoning.

1. _____

2. _____

3. _____

4. _____

5. _____

6. _____

6. What is a re-entry period and why should you observe it?

7. What is an animal handling interval and why should you observe it?

8. Describe recommended procedures to: -

(a) Dispose of empty agrichemical containers.

(b) Dispose of surplus mixed agrichemical and/or washings.

(c) Dispose of unwanted agrichemical concentrate.

Element 3 Answer the following questions in relation to the agrichemical Gramoxone.

9. What are the signs/symptoms of someone who has been poisoned by this chemical?

10. Where did you get this information from (list more than one source)?

11. Describe the first aid procedures for suspected poisoning from this agrichemical.

12. Where did you get this information from (list more than one source)?

13. List the protective clothing necessary to protect yourself appropriately when using this agrichemical.

14. Where did you get this information from?

15. Write down two phone numbers that may be of use to obtain emergency information regarding this agrichemical.

1.

2.

MARKING SCHEDULE

Demonstrate Knowledge of Safety with Agrichemicals

Unit 21554

Level 2

Credits 3

Question	Element	Evidence	Judgement
1	1	<ul style="list-style-type: none"> i. Oral (By mouth) eg drink from unlabelled bottle, don't wash hands after using agchem and either smoke or eat food, splash chemical on lips when mixing. ii. Dermal Absorption (via skin) eg not wearing gloves when mixing, not wearing long sleeves or trousers when spraying, splashing into eyes. iii. Inhalation (breathe it in) e.g. poor ventilation when spraying, inhale fumes when mixing agchems. iv. Injection eg accidentally stab self instead of intended animal. 	Must state 3 methods and for each give one practical example of how it could happen when using agchems.
2	1	<p>Acute is immediate resulting from a single dose. Chronic occurs after a period of time from an accumulation of small doses.</p>	Answer identifies difference in time frame.
3	1	Measuring and mixing concentrated formulations.	Not strictly required for credit.
4	2	<ul style="list-style-type: none"> ▪ Transport – Secured, in and on the vehicle, segregation, information, emergency procedure guide. ▪ Storage – In appropriate, well ventilated, secure (locked) location, spillage kits. ▪ Measuring/Mixing – Wear required PPE appropriate for the agrichemical being mixed – always use waterproof gloves. Use accurate, clean measuring equipment in a safe location. Don't smoke or eat during handling. ▪ Application – Equipment checked for function; appropriate PPE worn, equipment fit for use take care with how chemicals are applied to minimise exposure to self and others. May mention: Re-Entry Periods observed / Product Handling – Follow label directions. ▪ Disposal/Clean Up – Wear PPE appropriate for agrichemical clean and store PPE properly. Must wash hands and exposed skin after use. Wash clothes you wore for spraying – don't wear them again until washed. 	<ul style="list-style-type: none"> ▪ Secured mentioned. ▪ Answer to include security, well ventilated. ▪ Use of PPE, accurate clean measuring and location. ▪ Answer to include equipment check, PPE and spray drift or environmental conditions. ▪ Appropriate PPE, cleaned and stored. Personnel hygiene requirement to include wash hands and exposed skin.

5 (a)	2	<ul style="list-style-type: none"> ▪ Novachem manual (or similar) ▪ Product label ▪ SDS ▪ Hazchem note ▪ Manufacturer 	Must include two items.
5 (b)	2	<ul style="list-style-type: none"> ▪ Chemical resistant boots ▪ Chemical resistant gloves (or at least waterproof) when mixing ▪ Washable cotton overalls or equipment ▪ Long sleeve shirt, pants ▪ Respirator ▪ Face-shield, goggles (for mixing) ▪ Full chemical resistant suit (for dangerous poisons) 	Mentions 5
6	3	<p>The time which should elapse between treatment of a crop or agrichemical use situation and when it can be re-entered without the use of protective clothing or equipment.</p> <p>Why observe? – To avoid poisoning from contact with chemical until it has been absorbed or washed off treated areas.</p>	Idea evident
7		<p>The period which should elapse between treatment of an animal with an animal remedy and when it can be handled without protective clothing or equipment.</p> <p>Why? To avoid contact poisoning or inhaling fumes of the chemical that is residual on the animals coat or skin.</p>	Idea evident
8 (a)		<ol style="list-style-type: none"> 1. Triple rinse add rinsole to tank. 2. Recycle 3. Dispose as per label <p>(Answer may differ regionally based on Council airplan)</p>	Must get 1 and either of the others.
8 (b)		<p>If possible dispose over the area originally intended for use i.e. repeat application over part of area after dilution. If not possible then apply to waste ground or other area at label rate and observe any WHP and re-entry periods.</p>	Must include over original area and/or waste ground.
8 (c)		<p>Either: -</p> <ol style="list-style-type: none"> 1. Collection by Regional Authority 2. Use if legally allowed to on waste ground as for (b) above. 3. Chemical disposal company. 	Similar (should be able to find this from NZS which they have reference to).

For element 3: answers relate to Gramoxone. Assessors should change example answers if using different chemicals.

9	3	<p>Symptoms:</p> <p>Vomiting & diarrhea, abdominal discomfort inflammation of mouth, throat, & oesophagus,</p> <p>Difficulty swallowing, kidney & liver damage, multiple organ failure & circulatory collapse</p> <p>Severe eye irritation, skin irritation white spots on nails, nose bleeds possible if inhaled.</p>	All to be correct.
10	3	<p>Where is info sourced?: label, SDS, Haz note</p>	Includes 3 sources of information
11	3	<p>IMMEDIATE medical attention if poisoned by any exposive route. Activated charcoal or fillers earth, irrigate eyes for 15 minutes, wash skin first with water & then water & soap.</p>	All to be correct and includes 3 sources of information.

Question	Element	Evidence	Judgement
12	3	Where is info sourced?: label, SDS, Haz note	Includes 3 sources of information
13	3	Cotton overalls, elbow length PVC gloves, face shield or goggles, waterproof footwear and clothing necessary	All to be correct
14	3	1. 0800 734 617 – Syngenta Crop Protection 2. 0800 POISON (0800 764 766) – Poisons Information Centre	2 given and correct.
15	3	Where is info sourced?: label, SDS, Haz note	Includes 3 sources of information

Assessment Guidelines for Unit Standard 21554

(To accompany Agriculture ITO 'Example' Assessment)

This assessment covers basic safety knowledge to do with use of agrichemicals (not just pesticides). The assessment should be run under supervised conditions where candidates have reference to NZS 8409:2004 and various agchem labels, SDS and dangerous goods notes. Students should not have access to their course notes when completing this assessment.

This assessment can be conducted orally.

Element One:

Could substitute question one with a task to draw a poster, flow chart or mind map showing routes of poisoning and how they might occur. Judgement will be the same as per example assessment ie must cover 3 routes of entry to body and an example for each route of how it could occur.

Element Two:

Students should have access to NZS8409:2004 The management of agrichemicals.

If you use alternative questions remember the entire range statement needs to be covered.

Element Three:

Supply chemical labels, SDS and dangerous goods notes for one or more agrichemicals. If use different chemicals to the one supplied with example assessment update the marking schedule.