



Level 2 Award in  
The Safe Application of Pesticides  
Using Variable Geometry Boom or  
Broadcast Sprayers

**Qualification Specification**

Version 1

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# Qualification Specification

## Lantra Awards Level 2 Award in The Safe Application of Pesticides Using Variable Geometry Boom or Broadcast Sprayers

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# 1. Why has this qualification been developed?

The Lantra Awards Level 2 Award in The Safe Application of Pesticides Using Variable Geometry Boom or Broadcast Sprayers has been developed in direct response to a legal requirement regarding pesticides. Users are now required to hold a recognised specified Certificate before purchasing and using pesticide products to protect plants and crops from pests and diseases, and to control unwanted plants/weeds. There is a legal requirement that anyone who is purchasing a pesticide authorised for professional use must ensure that the product will be used by someone who holds a specified certificate or will be working under the direct supervision of someone who holds one. A specified certificate is one which relates to the relevant use of the product being purchased.

This Level 2 Award in The Safe Application of Pesticides Using Variable Geometry Boom or Broadcast Sprayers is nationally recognised. Learners can achieve certification in the safe use and application of a range of applicators including hand held applicators, and vehicle mounted boom sprayers.

Individuals may undertake training from a variety of sources. However, to achieve the qualification, they must be assessed against all of the Learning Outcomes and Assessment Criteria set out in the qualification.

This Qualification Specification document provides information for Provider staff involved in the planning, delivery and assessment of the Lantra Awards Level 2 Award in The Safe Application of Pesticides Using Variable Geometry Boom or Broadcast Sprayers.

## 2. Who is the qualification for?

This qualification has been developed for anyone involved in the safe use, application and operation of pesticides using variable geometry boom or broadcast sprayers. It provides an opportunity to achieve a recognised national qualification which reflects the national standards for the type of role(s) they perform. This qualification is suitable for those entering work, those who have established themselves in a role and those working at technician/supervisory/management levels.

The qualification is designed to enable learners aged 16+ to develop their knowledge, understanding and skills to support their role(s) and develop their career in the protection of plants and crops from pests and disease, and controlling unwanted plants/weeds. It also provides an opportunity for learners to obtain a recognised specified certificate, without which they would not be able to carry on working with pesticides. The qualification will enhance the ability of personnel to work safely, effectively and efficiently in the workplace, reducing unnecessary risks to themselves and others.

## 2.1 Prerequisites

Entry for this qualification is available to anyone aged 16+ who is capable of achieving the required standard. Provider staff should understand the demands of this qualification and match learners based on their individual capabilities and future progression requirements.

This qualification has been developed to promote equal opportunities by eliminating any avoidable barriers which could restrict access or progression.

## 3. What does this qualification cover?

Learners undertaking this qualification will be able to demonstrate their knowledge of the safe use and application of pesticide using variable geometry boom or broadcast sprayers.

The qualification aims to assess the learner's knowledge and understanding of:

- the regulations regarding safe use of pesticides
- pesticide product information
- hazards and risks associated with pesticides
- personal safety when using boom and broadcast sprayers
- the measures to deal with pesticide poisoning
- safe working practices
- the requirements for protected areas
- environmental risks and protection of wildlife
- how to deal with incidents
- factors to consider when using boom and broadcast sprayers.

Following regulatory requirements for qualifications to have a distinct purpose, this qualification is identified and approved with The Office of Qualifications and Examinations Regulation (Ofqual) to have the following purpose:

Purpose:

- D. Confirm occupational competence and/or 'licence to practice'
- D2. Confirm the ability to meet a 'licence to practice' or other legal requirements made by the relevant sector, professional or industry body.

### 3.1 Progression Routes

This qualification forms part of a wider Lantra Awards' offer. The table below indicates where there are opportunities for learners to progress via accredited training and, where applicable, regulated qualifications.

Training		
Training title	Quartz Code	Product Code
Boom Sprayer – Hydraulic Nozzle	443	PST04
Boom Sprayer – Rotary Atomiser	444	PST04
Granular Applicators	447	PST05
Hand Held Stem Injection	5492	PST07
Pesticide Plugs	5519	PST08

Qualifications		
Qualification title	QAN	Purpose: applies to all qualifications:
Level 2 Award in the Safe Application of Pesticides Using Vehicle Mounted Boom Sprayer Equipment	601/6563/7	Purpose: D: Confirm occupational competence and/or 'licence to practice' D2: Confirm the ability to meet a 'licence to practice' or other legal requirements made by the relevant sector, professional or industry body.
Level 2 Award in the Safe Application of Pesticides Using Granular Equipment	601/6565/0	
Level 2 Award in the Safe Operation of Hand Held Pesticide Stem Injection Equipment	603/0964/7	
Level 2 Award in the Safe Operation of Pesticide Plug Equipment	603/1316/X	
Level 2 Award in the Identification of Invasive and Injurious Species	601/6555/8	
Level 2 Award in the Safe Application of Pesticide Mists and Fogs	603/3237/2	

## 4. Qualification overview

		Where to look for further details
<b>Qualification title</b>	Lantra Awards Level 2 Award in the Safe Application of Pesticides Using Variable Geometry Boom or Broadcast Sprayers	Ofqual's Register of Regulatory Qualifications  <a href="http://register.ofqual.gov.uk">register.ofqual.gov.uk</a>
<b>Qualification number</b>	603/3238/4	
<b>Qualification aim</b>	This qualification is designed to enable learners to become safe and competent users of variable geometry boom or broadcast sprayers, including the Safe Use of Pesticides unit which is the foundation required to safely use and handle pesticides.	
<b>Qualification purpose</b>	This qualification is suitable for all those who need to use variable geometry boom or broadcast sprayers; from those entering work, to those who have established themselves in a role to those working at technician/ supervisory/management levels.	
<b>Qualification start date</b>	01/06/2018	
<b>Level</b>	2	
<b>Credits</b>	6	
<b>GLH</b>	42 The credit value for the qualification will be the same whichever unit is chosen.	
<b>TQT</b>	60	
<b>Quartz ID numbers</b>	Unit- 4547 Principles of the safe use and application of pesticides Unit- 11069 Operating a broadcast sprayer with air assistance Unit- 11070 Operating a vehicle geometry boom sprayer with air assistance  Programme- 5894 Qualification- 307	
<b>Unit numbers and titles</b>	K/507/0952 Principles of the safe use and application of pesticides A/617/0158 Operating a broadcast sprayer with air resistance F/617/0159 Operating a vehicle geometry boom sprayer with air resistance	

<b>Qualification structure</b>	<p>This qualification comprises:</p> <ul style="list-style-type: none"> <li>• one mandatory unit</li> <li>• two optional units.</li> </ul> <p>Learners must complete the mandatory unit requirements and one of the optional units.</p>				
<b>Age group</b>	Pre-16	16–18	18+	19+	
	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
<b>Entry requirements</b>	There are no formal requirements for entry to this qualification.				
<b>Prerequisites</b>	Whilst there are no formal prerequisites for entry to this qualification, learners must be able to read and interpret information provided in English. It is recommended that learners have a basic knowledge of first-aid procedures.				
<b>Recognition of prior learning</b>	Where learners can evidence completion of The Principles of the Safe Use and Application of Pesticides, they will only need to complete one of the optional units.				
<b>Assessment methods</b>	Multiple choice question paper, practical demonstration of assessment activities and professional discussion				
<b>Assessment model</b>	This qualification is externally assessed by a Lantra Awards Assessor. An External Quality Assurer (EQA) will quality assure the Assessor and the assessment decision to validate the outcome.				
<b>Grading</b>	Pass/Fail				
<b>Is there a skills card available?</b>	Yes				Guidance Handbook for Providers
<b>Fees</b>	Fees can be found in the Product Directory. Prices are subject to review on an annual basis so please contact the sales team if you do not have an up to date copy ( <a href="mailto:sales@lantra.co.uk">sales@lantra.co.uk</a> ).				Product Directory; sales team
<b>Related documents</b>	An Assessment Guidance Handbook is available for providers and assessors which can be found on the Lantra Awards website. Other assessment-related paperwork can be located within Quartzweb				<a href="http://www.lantra.co.uk">www.lantra.co.uk</a>
<b>How do I register learners?</b>	Via Quartzweb <a href="http://ordering.lantra.co.uk/Login.aspx">ordering.lantra.co.uk/Login.aspx</a>				Quartzweb User Guide



## 5. Content of qualification

This qualification is made up of one mandatory unit (M) and two optional units (O). Learners must achieve the mandatory unit and one of the optional units.

Unit Title	M/O	GLH	Credits
Principles of the safe use and application of pesticides	M	26	3
Operating a broadcast sprayer with air assistance	O	16	3
Operating a variable geometry boom sprayer with air assistance	O	16	3

<b>Unit title</b>	<b>Principles of the safe use and application of pesticides</b>
<b>Unit reference number</b>	K/507/0952
<b>Unit level</b>	2
<b>Unit credit value</b>	3

<b>Learning Outcomes The learner will:</b>	<b>Assessment Criteria The learner can:</b>
1. Understand the regulations regarding the safe use of pesticides	1.1 Identify relevant legislation when using pesticides
	1.2 Identify the operator's responsibilities under current legislation
2. Understand product information	2.1 Identify authorised products for use
	2.2 Interpret product labels
3. Understand the hazards and risks associated with pesticide	3.1 Identify the measures to minimise risk/prevent and control exposure
4. Understand the importance of personal safety	4.1 Outline the importance of personal hygiene
	4.2 Describe the routes of contamination
	4.3 Describe the symptoms of pesticide poisoning
5. Understand the measures to take to deal with pesticide poisoning	5.1 Describe the measures required for dealing with pesticide poisoning
6. Understand the operator's responsibility for safe working practices	6.1 Identify safety requirements when using pesticide
	6.2 Describe how to safely store pesticides
	6.3 Describe how to safely handle pesticide
	6.4 Describe how to transport pesticide safely
	6.5 Describe how to dispose of product waste safely
	6.6 Describe the emergency procedures for dealing with spillages

7. Understand the requirements for protected areas	7.1 Identify the requirements for protecting surface water and ground water
8. Understand how to minimise environmental risk and protect wildlife	8.1 Describe how to minimise environmental risk and protect wildlife
9. Understand how to deal with an incident	9.1 Describe how to deal with a suspected incident
10. Understand factors to consider when using pesticide	10.1 Identify the records to be retained in accordance with legislation

<b>Taught Content</b>
<p><b>Learning outcome 1. Regulations regarding the safe use of pesticides</b></p> <p><b>1.1</b> Learners must be able to demonstrate awareness of the appropriate Code of Practice and any guidance for those affected by the Plant Protection Products (Sustainable Use) Regulations 2012 (PPP (SU)). Understand that the Sustainable Use Directive provides a framework to achieve a sustainable use of pesticides.</p> <p><b>Health and Safety at Work etc. Act 1974 (HSWA)</b></p> <ul style="list-style-type: none"> <li>• Employers' responsibilities</li> <li>• Employees' responsibilities</li> <li>• Suppliers' responsibilities.</li> </ul> <p><b>Management of Health and Safety at Work Regulations 1999</b></p> <ul style="list-style-type: none"> <li>• Gives employers general obligations to improve health and safety management</li> <li>• Explains what employers and employees must do under HSWA.</li> </ul> <p><b>Control of Substances Hazardous to Health Regulations 2002 (COSHH)</b></p> <ul style="list-style-type: none"> <li>• Assess risks to health with dangerous substances</li> <li>• Eliminate, if possible or adequately control exposure to substances.</li> </ul> <p><b>Personal Protective Equipment Regulations 2002 (PPE)</b> All PPE must comply with PPE regulations and be CE marked.</p> <p><b>Wildlife and Countryside Act 1981</b> The main legal protection of wildlife in Great Britain.</p> <p><b>1.2</b> Learners must appreciate that pesticides should only be used if alternatives are not available or fail to give the required levels of control.</p> <ul style="list-style-type: none"> <li>• Operators must receive adequate training</li> <li>• Follow the code of practice for using Plant Protection Products</li> <li>• Take reasonable precautions to protect health and environment</li> <li>• Confine application to intended target</li> <li>• Learners must have knowledge of suppressing or preventing incidents of pests, diseases and weeds.</li> </ul>

To use pesticides safely and only when necessary as part of an integrated control regime. Knowledge of alternative methods such as, natural predators, pest-resistant plants, and other methods, to preserve a healthy environment and decrease reliance on pesticides. Knowledge of a pest, disease or weeds that are resistant to regular use of a pesticide. Knowledge of the relevance of Herbicides Resistance Action Group (HRAG), Fungicide Resistance Action Group (FRAG) and Insecticide Resistance Action Group (IRAG). Show an understanding of thresholds – when pests need to be controlled.

- Show knowledge of the Voluntary Initiative
- For farmers, Linking Environment and Farming (LEAF) and assurance schemes are important forms of advice
- Comply with the COSHH risk assessment. Carry out and comply with the application site Environmental Risk Assessment (consider alternatives, the effects that the product will have on health and the environment)
- Maintain an up to date knowledge of current pesticide legislation
- Equipment used needs to be tested when required in accordance with the PPP (SU) Regulations and needs to be in good condition and calibrated. Knapsack sprayers and other hand-held equipment need to be regularly checked and calibrated by the operator.

## **Learning outcome 2. Understand product information**

**2.1** Learners must know where to check that the product is still authorised for use – Chemicals Regulation Division (CRD) website.

- Learners must be able to demonstrate if a product label is counterfeit
- Learners must be able to identify if a product is counterfeit, outlining the importance of the statutory status of the label.

**2.2** Learners must be able to interpret information on product labels.

- The conditions detailed in the “Important Information” box such as, field of use, maximum dose rate and the latest timing must be complied with. The current authorisation number must be checked to ensure it is current
- The active ingredient must be the most effective and suitable for the task
- The importance of only using approved adjuvants
- Product symbols e.g. H, F, I and P
- The importance of Extension of Authorisation for Minor Use (EAMU)
- Environmental information sheets (EIS) risks to the environment and how to control them.

### **Learning outcome 3. Hazards and risks associated with pesticide**

**3.1** Learners must be able to identify the hazards and risks to the operator, public, wildlife and the environment.

- Recognise sensitive features e.g. residential areas, water bodies, nature conservation areas and field margins. Protect them appropriately by applying buffer zones between treated areas and neighbouring land and watercourses
- Knowledge of the Voluntary Initiative, which provides guidance on the safe use of pesticides
- Use an alternative method of control
- Using a less dangerous product as per the Plant Protection Products (Sustainable Use) Regulations 2012
- Recognise that using less risky products will help to protect drinking water supplies
- The Amenity Forum provides guidance on identifying and mitigating risks to water and minimising use on hard surfaces
- Understand the risk of run-off from hard surfaces
- Organise work to keep the public away from the areas being treated, only spray when the public are not likely to be around.

Know the requirements for:

- spraying at preferred times of day (to avoid problems such as: when public have access or when children are at school)
- spraying in preferred weather conditions
- warning neighbours and any other interested parties
- public rights of way.

Surface water and groundwater:

- Prevent spillage by using a spill tray when mixing, filling and loading and ensure working away from watercourses, ditches and drains
- Take into account drain flow and surface run-off
- Take appropriate actions to reduce spray drift
- Follow buffer zone and Local Environmental Risk Assessment for Pesticides (LERAP) conditions
- Always spray upstream
- Make sure equipment is well maintained and does not leak or drip
- Technical engineering or operational controls
- Reduce the dose of the product where possible
- Choose the right equipment for the job
- Use a closed cab on a tractor (if applicable)
- Make sure the sprayer is tested regularly
- Use well-maintained equipment
- Calibrate equipment to check accuracy of the dose rate
- Wear appropriate PPE as per the requirements of the product label.

#### **Learning outcome 4. The importance of personal safety**

**4.1** Learners must understand the importance of personal safety.

Eating, drinking and smoking should not be undertaken when using pesticide.

Before removing PPE, wash the PPE, remove it and then wash self before storing to avoid cross contamination.

**4.2** Learners must be able to identify routes of contamination such as absorption (through skin and eyes), inhalation and ingestion (hand to mouth or object to mouth).

**4.3** Learners must be able to identify the symptoms of pesticide poisoning and contamination e.g. headache, stomach pains, airway/skin irritation.

#### **Learning outcome 5. Measures to take to deal with pesticide poisoning**

**5.1** Learners must be able to deal with the contamination of self and others.

##### **Self**

- Identify contamination
- Remove contaminated clothing including PPE
- Obtain medical assistance (if required)
- Stop work and call for medical help (if necessary) and provide information on substance i.e. product label/MSDS.

##### **Conscious casualty**

- Prevent further exposure
- Use appropriate PPE
- Move casualty away from the source (remove contaminated clothing)
- Wash contaminated area with clean water
- For eyes use a sterile pad or lint-free dressing
- For ingestion, follow details on the product label
- Make the casualty rest and keep them warm.

##### **Unconscious casualty**

- Check breathing and pulse
- If there is breathing, put them in the recovery position
- If there are no signs of breathing, perform CPR (if required)  
(To perform CPR the casualty should be on their back, then gently tip the head back to open their airway and start CPR)
- Comply with Reporting of Injuries, Diseases and Dangerous Occurrences Regulations 2013 (RIDDOR) by notifying HSE and completing a RIDDOR form.

## **Learning outcome 6. The operator's responsibility for safe working practices**

**6.1** Learners must be able to judge the suitability and serviceability of PPE including the significance of quality standard markings (equipment that meets European standards will carry the CE mark).

Outline how PPE should be cleaned, maintained, stored and records retained in accordance with manufacturer's instructions

Know the important features of

- face shields
- coveralls
- gloves
- footwear
- Respiratory Protective Equipment
  - type of filter
  - must have a good seal with the wearer's face.

(Consider - facial hair or markings, pre-existing medical conditions, if they wear spectacles or contact lenses; work rate, wear time and vision requirements - face fitting).

**6.2** Learners must have an understanding of how to safely store pesticide minimising risk.

- Show knowledge of the main requirements of a pesticide store including product segregation and precautions to reduce chances of spillage
- Large enough to hold requirements
- Know to store away from areas which present a risk of fire
- The store should not be located in:
  - domestic dwellings/retail areas
  - through areas of larger buildings.
- Check with the Local Authority if planning permission is required
- Know the store construction to be:
  - resistant to fire
  - dry
  - frost-free
  - well ventilated.
- Learners will know the importance of a stock record, maintaining stock security and the return of unused concentrated pesticide to the store
- Authorised pesticides should be stored in its original container with the authorised product label
- The store needs to have equipment available for dealing with contamination, spillage and fires
- Pesticides should never be left unattended.

**6.3** Learners must know the appropriate PPE which must be worn to protect the operator. Comply with the instructions detailed on the product label. Handle pesticides in a well-ventilated area.

- PPE should include:
  - face shield
  - coveralls
  - gloves
  - footwear
  - respiratory protective equipment.

**6.4** Learners must know how to transport pesticides and their mobile storage.

Know how to safely transport pesticides to where they will be applied and safely stored at the site.

Transporting in a vehicle:

- In a secure enclosed chemical container proofed against chemical and vapour
- In a secure cabinet mounted on the outside of the vehicle
- A vehicle with a bulkhead between the cab and the load compartment
- Pesticides should never be left unattended
- Reference to be made to legislation, The Carriage of Dangerous Goods and Use of Transportable Pressure Equipment Regulations 2009 (CDG 2009) – precautions to take when transporting pesticides.

**6.5** Learners must understand reasonable precautions to ensure operations do not endanger human health or the environment.

Always take protection of water into account, particular care needs to be taken where products are sprayed back onto sites that are near to areas of water.

Explain how to reduce the need for disposals by:

- ensuring calculations are accurate
- mixing the pesticide correctly
- ensuring the applicator is calibrated accurately.

#### **Disposal of unwanted concentrated pesticide**

Outline how to dispose of concentrated pesticides:

- if currently authorised return to supplier
- otherwise, arrange collection by a licensed waste disposal contractor if out of authorisation or damaged.

#### **Disposal of dilute pesticide (including sprayer washings)**

Outline how to dispose of dilute pesticides and washings, for example:

- spray back onto site or target if below full rate
- collected by licensed waste disposal contractor
- use specialist effluent treatment plant
- put into a lined biobed.

Reference to be made to legislation:

- Environmental Protection Act 1990 – it is an offence to dispose of controlled waste which is likely to pollute the environment or harm human health
- Outline how to deal with packaging and empty containers.

#### **Pesticide container**

Make sure the container is completely empty and triple rinsed before disposal:

- either triple rinse manually or use built in rinsing systems
- before disposal ensure secure storage.

#### **Packaging**

- If not contaminated it should be recycled
- Otherwise disposed of by licensed waste disposal contractor
- Reference to be made to legislation: Hazardous Waste Regulations 2005 – requirements for handling and disposing of hazardous waste.



**6.6** Learners must understand the actions required to protect the operator, general public, environment and wildlife

- Describe how to deal with spillages
- Learners will understand procedures to:
  - Keep wildlife and people away from the affected area
  - Prevent further spillage
  - Contain spilt materials using an inert, absorbent material such as sand or cat litter
  - Keep the contamination away from surface water, ditches and drains
  - Inform the relevant Environment Agency
  - Remove materials used to contain spillage
  - Dispose of contaminated material safely and legally.
- Outline how to deal with spillages, including:
  - the importance of preventing potential contamination to water as stipulated by the Water Framework Directive, especially in areas where drinking water is abstracted
  - preventing harm to amenity and wildlife.

**Learning outcome 7. Operators responsibility for safe working practices**

**7.1** Learners must understand the associated legislation, Groundwater (England and Wales) Regulations 2009 and Water Framework Directive

- Knowing that special care is needed when working in areas designated by the Water Framework Directive as water protection zones
- Preventing the pollution of groundwater by controlling disposal of substances
- Authorisation is needed before pesticide waste can be applied to land in any way other than authorised by the product
- The importance of specially designated areas such as SSSI's.

**Learning outcome 8. Minimising environmental risk and protecting wildlife**

**8.1** Learners must understand procedures to minimise environmental risk. (Appropriate assessment must be made of the effect of applying pesticide in accordance with the requirements of the Wildlife and Countryside Act, 1981 and the Conservation of Habitats and Species Regulations, 2017).

Knowing the importance of wildlife habitat protection such as:

- avoiding off target contamination (bees and other beneficial insects).

Protecting wildlife – conduct an environmental risk assessment and use the safest pesticide

- Spraying should ideally be carried out in the evening when bees have stopped flying or under conditions when bees are not foraging on flowering plants.

## **Learning outcome 9. How to deal with an incident**

**9.1** Learners must understand procedures for dealing with emergencies such as:  
The importance of Material Safety Data Sheets and what actions to take in an emergency.

- State how to deal with suspected animal poisoning, contact the Wildlife Incident Investigation Scheme (WIIS)
- Dealing with spillages by informing the environment agency and emergency services if required.

## **Learning outcome 10. Factors to consider when using pesticide**

**10.1** Learners must understand the importance of the following:

### **Storage records**

- Regularly updated
- Good stock control
- In case of fire.

### **Pesticide treatment records**

Provide information such as:

- MAPP number of pesticide used
- the time that needs to pass before harvesting
- intervals between repeat applications
- periods when livestock cannot go into a treated area
- when workers cannot enter treated areas.

### **Training records**

Employers to retain records of employees' training for Continuous Professional Development (CPD.)

### **COSHH assessments – an assessment of likely risk to health**

- Applicable if the product is classified as very toxic, toxic, harmful, irritant or corrosive
- Includes substances with a Workplace Exposure Limit (WEL)
- Consider the dangers
- Who could be harmed and how
- Action required to prevent or control exposure
- Record the results
- Revise the assessment when necessary.

### **Environmental Risk Assessment**

- Details the possible risks to wildlife and the environment - habitats
- The steps required to prevent or adequately control exposure to wildlife, environment and water.

**Monitoring exposure**

Employer will monitor exposure detailing the results; monitoring procedures used, length of monitoring, samples taken.

**Exposure control measures**

Records of inspections and tests of engineering controls and respiratory protective equipment.

**Disposal records**

- Retain copies of 'waste transfer' notes
- Written description of the waste for two years
- Hazardous waste: a consignment note to be retained for three years.

<b>Unit title:</b>	<b>Operating a broadcast sprayer with air assistance</b>
<b>Unit level:</b>	2
<b>Unit credit value:</b>	3
<b>Unit reference number:</b>	A/617/0158

<b>Learning outcome The learner will:</b>	<b>Assessment criteria The learner can:</b>
<b>1. Understand the legislative and safety regulations relating to application equipment</b>	1.1 Describe the legal requirements relating to applying pesticides using the application equipment
	1.2 Describe how to apply pesticides safely using application equipment, following industry best practice
<b>2. Be able to assess the environmental factors relating to mixing and application</b>	2.1 Perform an environmental risk assessment
	2.2 Explain how to minimise risks to the environment
	2.3 Explain the potential environmental impact of spray drift
<b>3. Be able to interpret product information</b>	3.1 Read and interpret product information
	3.2 Explain hazards and risks associated with pesticide use
<b>4. Be able to prepare the application equipment</b>	4.1 Identify applicator controls and components
	4.2 Outline different nozzle types and their uses
	4.3 Demonstrate pre-use checks of equipment
<b>5. Be able to calibrate the application equipment</b>	5.1 Demonstrate calibration of selected application equipment
	5.2 Demonstrate recording of relevant data
	5.3 Demonstrate calculating the quantities of pesticide and water
	5.4 Demonstrate setting the nozzle to required pressure
<b>6. Be able to operate the application equipment</b>	6.1 Demonstrate the measurement of required quantities
	6.2 Demonstrate safely adding mix to the selected applicator
	6.3 Demonstrate safe and accurate application procedures
	6.4 Describe low volume spraying techniques and appropriate times for their use
	6.5 Carry out all activities protecting human health and the environment
	6.6 Demonstrate completion of a treatment report

<b>Learning outcome The learner will:</b>	<b>Assessment criteria The learner can:</b>
<b>7. Understand how to carry out post-operational procedures</b>	7.1 Describe how to manage surplus pesticide and dispose of waste materials
	7.2 Describe how to clean and decontaminate the selected application equipment
	7.3 Describe the procedure to check and carry out repairs to equipment
	7.4 Describe the storage requirements for the selected application equipment

<b>Taught Content</b>
<p><b>Learning outcome 1. Understand the legislative and safety regulations relating to application equipment</b></p> <p><b>1.1</b> Learners must be able to describe operator's requirements within a legal framework:</p> <ul style="list-style-type: none"> <li>• Ensure guards are in place that comply with legal requirements</li> <li>• Compliance with Plant Protection Products (Sustainable Use) Regulations 2012</li> <li>• Requirements for operators to hold a relevant specified certificate for the equipment being used.</li> </ul> <p><b>1.2</b> Learners must be able to describe how to apply pesticides safely:</p> <ul style="list-style-type: none"> <li>• Comply with relevant Pesticide Codes of Practice</li> <li>• Adopt industry best practice</li> <li>• Be aware of any safety implications imposed by Risk/COSHH Assessment and comply with the requirements</li> <li>• Be aware of the increased risk of applying pesticides in a confined area.</li> </ul> <p>Identify three items to be checked relating to the compatibility of the sprayer and the tractor/power unit, which may include:</p> <ul style="list-style-type: none"> <li>• Compatibility of the power unit/tractor and sprayer relating to: size, weight, power requirement, attachment type, hydraulic connections, electrical connections, steering systems, braking systems.</li> </ul> <p>Identify one safety consideration when operating the tractor/power unit and sprayer for each of the following:</p> <ul style="list-style-type: none"> <li>• Up and down slopes</li> </ul>

- Wet ground conditions
- Uneven/rough ground
- On the road.

**Learning outcome 2. Be able to assess the environmental factors relating to mixing and application**

**2.1** Learners must be able to identify risks to the environment:

- Ground conditions
- Water courses
- Environmental margins/strips/areas
- Drains
- Boreholes
- Wildlife
- Non-target plants
- Neighbours' land
- Sensitive crops/areas
- Hedgerows
- Housing
- Public access
- Other risks specific to the site.

**2.2** Learners must be able to explain how to minimise these risks, such as:

- use of an appropriate pesticide
- careful timing of application
- check and maintain application rate
- avoid off target application
- observe buffer zones
- comply with air assisted LERAP requirements
- erect warning signs
- inform neighbours before application
- use of anemometer or visual signs at suitable height
- wind direction.

**2.3** Learners must be able to explain the potential environmental impact of spray drift

Factors affecting spray drift may include:

- vehicle speed
- balancing flow rate and atomiser speed
- nozzle type, size and quality
- fan speed and pitch

- target canopy density
- use of airflow deflectors
- airflow direction
- wind speed and other weather conditions
- boom height and geometry
- damaged nozzles
- temperature and humidity
- direction of spraying.

The learner must show an understanding of implications of spray drift.

- Be aware of ways to avoid environmental impact, including:
  - marking out an application site
  - importance of erecting signs
  - careful timing of application
  - compliance with environmental assessment.

Identify the environmentally sensitive areas of the spraying site and in each case state how environmental impact may be minimised. Examples may include:

- Ponds, water courses or dry ditches, boreholes and other water sources
- Footpaths and other Public Rights of Way
- Other non-target crops
- Neighbouring property
- Hedgerows.

Observation and compliance with environmentally sensitive areas and field margins

### **Learning outcome 3. Be able to interpret product information**

**3.1** Learners must be able to read and interpret information, identifying:

- the relevance of pesticide product label information
  - product name
  - active substance(s) (ingredient(s)).

**3.2** Learners must be able to explain hazards and risks associated with pesticide use

Important information:

- Field of use
- Crop/target
- Maximum individual dose
- Maximum total dose
- Maximum number of treatments
- Specific product precautions/warnings
- Operator protection
- Environmental protection
- Restrictions on use.

Crop specific information:

- Crop/target
- Dose rate
- Water volume
- Timing.

Mixing and spraying:

- Filling
- Recommended nozzles
- Recommended pressure
- Spray quality
- Additional label information
- Compatibility.

### **Learning outcome 4. Be able to prepare the application equipment**

**4.1** Learners must be able to identify applicator controls and components, including:

- Pump
- Pulsation damper
- Filling control and devices
- Agitation control
- Pressure or volume regulator/pressure relief valve



- Boom pressure compensation
- On/off controls
- Fan blades and adjustments
- Fan speed settings
- Air deflectors
- Boom isolators
- Tank wash system
- Tank, filters, pump, pressure gauge and other items specific to the applicator
- Spray tank
- Clean water tank
- Controls
- Valve positions.

**4.2** Learners must be able to outline and identify the different nozzle types and their uses, including:

- Flat fan
- Hollow cone
- Air inclusion.

**4.3** Learners must be able to demonstrate pre-use checks on equipment, including:

- A visual check of all nozzles for even spray pattern with no blockages, streaking or pulsing and correct alignment
- Replacing defective nozzles/atomisers
- Lid and seals
- Hoses and pipework
- Air leaks
- Control valves
- Pressure gauge
- Check the anti-drip system valves

May include:

- Guards in place and in good condition
- Visual inspection of the wheels and tyres
- Tyre pressure
- Fuel level adequate
- Engine oil level is within acceptable limits
- Transmission oil level is within acceptable limits
- Coolant level is adequate
- Engine air filter is clean.

Explaining how to replace blocked nozzles/restrictors may include:

- Follow manufacturer's instructions for cleaning flow regulators
- Take care not to walk in contaminated crop/row

- Replacing nozzles according to manufacturer's instructions
- Store spare nozzles in a clean container
- Need to contain spillage.

Be able to identify:

- cabin filter
- fuel level
- hydraulic oil
- coolant
- lubrication points
- use in-cab controls.

Identify the importance of the following:

- Ensuring ventilation system is working correctly
- Closing all windows
- Ensuring the prime mover and applicator are compatible
- Width for row
- Front weights
- Tyre pressures and condition
- Guards being in place and in sound condition.

Demonstrate how to remove, clean and replace a filter, showing how to contain spillage and how to check for defects.

Outline the importance of security of the attachment of:

- bolts and pins
- straps and worn parts
- linkage, side sway restriction and draw bar pins.

## **Learning outcome 5. Be able to calibrate the application equipment**

**5.1** Learners must be able to demonstrate the calibration of selected application equipment including:

- Selecting a suitable forward speed for the sprayer, crop and ground conditions
- Calculating the required sprayer output to comply with the product label
- Selecting nozzle using nozzle data sheet and fit suitable nozzles complying with the product label recommendations
- Checking that the selected nozzle achieves the correct spray quality or LERAP star rating
- Selecting and adjusting pressure.

**5.2** Learners must demonstrate the recording of relevant data

May include:

- Measure and record forward speed
- Record all relevant information, including data that will allow the tractor/ prayer to be clearly identified and quantities of water and pesticide used, as well as engine speed, gear selection, nozzle, pressure, fan speed and blade pitch.

**5.3** Learners must demonstrate calculating the quantities of pesticide and water

May include:

- Calculate the area/volume to be treated
- Calculate quantity of water and pesticide required for a specific area, full tank and part tank.

**5.4** Learners must be able to demonstrate setting the nozzle to the required pressure

May include:

- Select the correct nozzle for the spray quality required in line with label recommendations and calibrated equipment
- Show consideration of drift control using low drift nozzles.

## **Learning outcome 6. Be able to operate the application equipment**

**6.1** Learners must demonstrate the measurement of required quantities, including:

- Accurately measuring the correct water volume
- Accurately measuring and mix the pesticide, avoiding spillage (using a filling device where fitted)
- Adjust air flow.

**6.2** Learners must be able to demonstrate safely adding mix to the selected applicator

May include:

- Show the correct filling procedure, observing the pesticide manufacturer's instructions for mixing, agitation and tank mixes
- Describe how to handle one other pesticide formulation, using industry best practice, (examples, wettable powders (WP), micro emulsions, water dispersible granules (WG)
- Demonstrate correct use of a suitable water supply
- State correct use of PPE.

**6.3** Learners must demonstrate safe and accurate application procedures

- Show consideration of obstacles, e.g. use near electricity poles and stay wires, and changes in wind/ weather conditions
- Explain procedures when application runs out mid field.

**6.4** Learners must describe the effects of varying the fan speed and pitch

May include:

- Describe when and how to carry out reduced/ low volume spraying techniques
- Describe the effect of larger air volumes on the coverage of varying crop density
- Possible damage to delicate crop
- Effect on drift.

**6.5** Learners must carry out all activities protecting human health and the environment

May include:

- Wear appropriate PPE:
  - Coveralls
  - Face shield
  - Suitable gloves
  - Suitable waterproof footwear
  - Respiratory protective equipment
  - Apron (for preparing pesticide)
- Demonstrate the correct application technique, to include the following:

- Safe driving techniques (considering ground conditions and gear control)
- Ensure applicator is level or aligned to target
- Applicator height/blast is adjusted according to type of nozzle/nozzle angle
- Operate controls to start and finish applying accurately at beginning and end of each bout
- Explain the importance of checking and maintaining application rates
- Correct forward speed and pressure for site conditions (as calibrated)
- Awareness of changes to wind speed/ direction
- Accurate matching of bouts/use of driving aids
- All area treated/minimising overlaps and misses
- Avoidance of incorrect dosing.

**6.6** Learners must demonstrate the completion of a treatment report

- Produce accurate and legible application records in accordance with legislation.

**Learning outcome 7. Understand how to carry out post-operational procedures**

**7.1** Learners must be able to describe how to manage surplus pesticide and dispose of waste materials, including:

- Outline one method of dealing with surplus concentrate pesticide
- Outline requirements for dealing with empty containers
  - Triple rinsed
  - Securely stored until disposal
  - Returned to supplier.
- Collected by a licensed waste contractor.

**7.2** Learners must describe how to clean and decontaminate the selected application equipment

May include:

- Using PPE
- When cleaning should take place
- Using an appropriate site
- Thorough washing with water and suitable additive if recommended
- Decontaminate both internal and external surfaces
- Use of in-built systems when provided
- Thorough flushing of systems
- Safe disposal of surplus dilute pesticide
- Dispose of washings in an appropriate manner.

**7.3** Learners to describe the procedure to check and carry out repairs to equipment

May include:

- Select an appropriate containment site and possible containers for contaminated material
- Select and use appropriate PPE
- Ensure that the applicator is made safe (engine stopped, supports if appropriate) before carrying out checks
- Safely isolate, drain and thoroughly decontaminate area or part to be replaced or repaired
- Move away from wash site before repairs undertaken
- Replace any worn or damaged parts.

**7.4** Learners must be able to describe the storage requirements for the selected application equipment, including:

- Requirements for PPE storage
- Ensuring the applicator is clean and dry
- Ensuring system is drained and all valves left in appropriate positions
- If appropriate, drawing antifreeze through system, particularly the pump
- Removing filters and nozzles and store appropriately
- Lubricating as required
- Storage undercover and out of direct sunlight
- Storage in a secure area.

<b>Unit title:</b>	<b>Operating a variable geometry boom sprayer with air assistance</b>
<b>Unit level:</b>	2
<b>Unit credit value:</b>	3
<b>Unit reference number:</b>	F/617/0159

<b>Learning outcome The learner will:</b>	<b>Assessment criteria The learner can:</b>
<b>1. Understand the legislative and safety regulations relating to application equipment</b>	1.1 Describe the legal requirements relating to applying pesticides using the application equipment
	1.2 Describe how to apply pesticides safely using application equipment, following industry best practice
<b>2. Be able to assess the environmental factors relating to mixing and application</b>	2.1 Perform an environmental risk assessment
	2.2 Explain how to minimise risks to the environment
	2.3 Explain the potential environmental impact of spray drift
<b>3. Be able to interpret product information</b>	3.1 Read and interpret product information
	3.2 Explain hazards and risks associated with pesticide use
<b>4. Be able to prepare the application equipment</b>	4.1 Identify applicator controls and components
	4.2 Outline different nozzle types and their uses
	4.3 Demonstrate pre-use checks of equipment
<b>5. Be able to calibrate the application equipment</b>	5.1 Demonstrate calibration of selected application equipment
	5.2 Demonstrate recording of relevant data
	5.3 Demonstrate calculating the quantities of pesticide and water
	5.4 Demonstrate setting the nozzle to required pressure
<b>6. Be able to operate the application equipment</b>	6.1 Demonstrate the measurement of required quantities
	6.2 Demonstrate safely adding mix to the selected applicator
	6.3 Demonstrate safe and accurate application procedures
	6.4 Describe low volume spraying techniques and appropriate times for their use
	6.5 Carry out all activities protecting human health and the environment
	6.6 Demonstrate completion of a treatment report

<b>Learning outcome</b> <b>The learner will:</b>	<b>Assessment criteria</b> <b>The learner can:</b>
<b>7. Understand how to carry out post-operational procedures</b>	7.1 Describe how to manage surplus pesticide and dispose of waste materials
	7.2 Describe how to clean and decontaminate the selected application equipment
	7.3 Describe the procedure to check and carry out repairs to equipment
	7.4 Describe the storage requirements for the selected application equipment

<b>Taught Content</b>
<p><b>Learning outcome 1. Understand the legislative and safety regulations relating to application equipment</b></p> <p><b>1.1</b> Learners must be able to describe operator's requirements within a legal framework:</p> <ul style="list-style-type: none"> <li>• Ensure guards are in place and comply with legal requirements</li> <li>• Compliance with the Plant Protection Products (Sustainable Use) Regulations 2012</li> <li>• Requirements for operators to hold a relevant specified certificate for the equipment being used.</li> </ul> <p><b>1.2</b> Learners must be able to describe how to apply pesticides safely:</p> <ul style="list-style-type: none"> <li>• comply with relevant Pesticide Codes of Practice</li> <li>• adopt industry best practice</li> <li>• be aware of any safety implications imposed by Risk/COSHH Assessment and comply with the requirements</li> <li>• be aware of the increased risk of applying pesticides in a confined area.</li> </ul> <p>Identify three items to be checked relating to the compatibility of the sprayer and the tractor/power unit, which may include:</p> <ul style="list-style-type: none"> <li>• Compatibility of the power unit/tractor and sprayer relating to: size, weight, power requirement, attachment type, hydraulic connections, electrical connections, steering systems, braking systems.</li> </ul>



Identify one safety consideration when operating the tractor/power unit and sprayer for each of the following:

- Up and down slopes
- Wet ground conditions
- Uneven/rough ground
- On the road.

**Learning outcome 2. Be able to assess the environmental factors relating to mixing and application**

**2.1** Learners must be able to identify risks to the environment:

- Ground conditions
- Water courses
- Environmental margins/strips/areas
- Drains
- Boreholes
- Wildlife
- Non-target plants
- Neighbours land
- Sensitive crops/areas
- Hedgerows
- Housing
- Public access
- Other risks specific to the site.

**2.2** Learners must be able to explain how to minimise these risks, such as:

- use of an appropriate pesticide
- careful timing of application
- check and maintain application rate
- avoid off target application
- observe buffer zones
- comply with air assisted LERAP requirements
- erect warning signs
- inform neighbours before application
- use of anemometer or visual signs at suitable height
- wind direction.

**2.3** Learners must be able to explain the potential environmental impact of spray drift

Factors affecting spray drift may include:

- vehicle speed
- balancing flow rate and atomizer speed
- nozzle type, size and quality
- wind speed and other weather conditions

- boom height and geometry
- damaged nozzles
- temperature and humidity
- direction of spraying.

The learner must show an understanding of implications of spray drift.

- Be aware of ways to avoid environmental impact, including:
  - Marking out an application site
  - Importance of erecting signs
  - Careful timing of application
  - Compliance with environmental assessment.

Identify the environmentally sensitive areas of the spraying site and in each case state how environmental impact may be minimised. Examples may include:

- Ponds, water courses or dry ditches, boreholes and other water sources
- Footpaths and other Public Rights of Way
- Other non-target crops
- Neighbouring property
- Hedgerows.

Observation and compliance with environmentally sensitive areas and field margins

### **Learning outcome 3. Be able to interpret product information**

**3.1** Learners must be able to read and interpret information, identifying:

- the relevance of pesticide product label information
  - product name
  - active substance(s) (ingredient(s)).

**3.2** Learners must be able to explain hazards and risks associated with pesticide use

Important information:

- field of use
- crop/target
- maximum individual dose
- maximum total dose
- maximum number of treatments
- specific product precautions/warnings
- operator protection
- environmental protection
- restrictions on use.

Crop specific information:

- crop/target
- dose rate
- water volume
- timing.

Mixing and spraying:

- filling
- recommended nozzles
- recommended pressure
- spray quality
- additional label information
- compatibility.

#### **Learning outcome 4. Be able to prepare the application equipment**

**4.1** Learners must be able to identify applicator controls and components, including:

- Pump
- Pulsation damper
- Filling control and devices
- Agitation control
- Pressure or volume regulator/pressure relief valve
- Boom pressure compensation
- On/off controls
- Fan blades and adjustments
- Fan speed settings
- Air deflectors
- Boom isolators
- Tank wash system
- Tank, filters, pump, pressure gauge and other items specific to the applicator
- Spray tank
- Clean water tank
- Controls
- Valve positions.

**4.2** Learners must be able to outline and identify the different nozzle types and their uses, including:

- Flat fan
- Hollow cone
- Air inclusion.

**4.3** Learners must be able to demonstrate pre-use checks on equipment, including:

- visual check of all nozzles for even spray pattern with no blockages, streaking or pulsing and correct alignment
- replace defective nozzles/atomisers
- lid and seals
- hoses and pipework
- air leaks
- control valves
- pressure gauge
- check the anti-drip system valves.

May include:

- Guards in place and in good condition
- Visual inspection of the wheels and tyres
- Tyre pressure
- Fuel level adequate
- Engine oil level is within acceptable limits
- Transmission oil level is within acceptable limits
- Coolant level is adequate
- Engine air filter is clean.

Explaining how to replace blocked nozzles/restrictors may include:

- Follow manufacturer's instructions for cleaning flow regulators
- Take care not to walk in contaminated crop/row
- Replace nozzles according to manufacturer's instructions
- Store spare nozzles in a clean container
- Need to contain spillage.

Be able to identify:

- cabin filter
- fuel level
- hydraulic oil
- coolant
- lubrication points
- use in-cab controls.

Identify the importance of the following:

- Ensuring ventilation system is working correctly
- Closing all windows
- Ensuring the prime mover and applicator are compatible

- Width for row
- Front weights
- Tyre pressures and condition
- Guards being in place and in sound condition.

Show how to:

- adjust the geometry
- check break-back if appropriate.

Demonstrate how to remove, clean and replace a filter, showing how to contain spillage and how to check for defects.

Outline the importance of security of the attachment of:

- bolts and pins
- straps and worn parts
- linkage, side sway restriction and draw bar pins.

### **Learning outcome 5. Be able to calibrate the application equipment**

**5.1** Learners must be able to demonstrate the calibration of selected application equipment including:

- Select a suitable forward speed for the sprayer, crop and ground conditions
- Calculate the required sprayer output to comply with the product label
- Select nozzle using nozzle data sheet and fit suitable nozzles complying with the product label recommendations
- Check that the selected nozzle achieves the correct spray quality or LERAP star rating
- Select and adjust pressure
- Adjust boom section pressure compensation controls.

**5.2** Learners must demonstrate the recording of relevant data

May include:

- Measure and record forward speed
- Record all relevant information, including data that will allow the tractor/ prayer to be clearly identified and quantities of water and pesticide used, engine speed, gear selection, nozzle, pressure, fan speed and blade pitch.

**5.3** Learners must demonstrate calculating the quantities of pesticide and water

May include:

- Calculate the area/volume to be treated
- Calculate quantity of water and pesticide required for a specific area, full tank and part tank.

**5.4** Learners must be able to demonstrate setting the nozzle to the required pressure

May include:

- Select the correct nozzle for the spray quality required in line with label recommendations and calibrated equipment
- Show consideration of drift control using low drift nozzles.

**Learning outcome 6. Be able to operate the application equipment**

**6.1** Learners must demonstrate the measurement of required quantities, including:

- Accurately measure the correct water volume
- Accurately measure and mix the pesticide, avoiding spillage (using a filling device where fitted)
- Adjust air flow.

**6.2** Learners must be able to demonstrate safely adding mix to the selected applicator

May include:

- Show the correct filling procedure, observing the pesticide manufacturer's instructions for mixing, agitation and tank mixes.
- Describe how to handle one other pesticide formulation, using industry best practice, (examples, wettable powders (WP), micro emulsions, water dispersible granules (WG)
- Demonstrate correct use of a suitable water supply
- State correct use of PPE.

**6.3** Learners must demonstrate safe and accurate application procedures

- Show consideration of obstacles, e.g. use near electricity poles and stay wires, and changes in wind/ weather conditions
- Explain procedures when application runs out mid field.

**6.4** Learners must describe the effects of varying the fan speed and pitch

May include:

- Describe when and how to carry out reduced/ low volume spraying techniques
- Describe the effect of larger air volumes on the coverage of varying crop density
- Possible damage to delicate crop
- Effect on drift.

**6.5** Learners must carry out all activities protecting human health and the environment

May include:

- Wear appropriate PPE:
  - Coveralls
  - Face shield
  - Suitable gloves
  - Suitable waterproof footwear
  - Respiratory protective equipment
  - Apron (for preparing pesticide).
- Demonstrate the correct application technique, to include the following:
  - Safe driving techniques (considering ground conditions and gear control)
  - Ensure boom geometry is aligned to target
  - Boom geometry is appropriate to nozzle type/angle
  - Operate controls to start and finish applying accurately at beginning and end of each bout
  - Explain the importance of checking and maintaining application rates
  - Correct forward speed and pressure for site conditions (as calibrated)
  - Awareness of changes to wind speed/ direction
  - Accurate matching of bouts/use of driving aids
  - All area treated/minimising overlaps and misses
  - Avoidance of incorrect dosing.

**6.6** Learners must demonstrate the completion of a treatment report

- Produce accurate and legible application records in accordance with legislation.

**Learning outcome 7. Understand how to carry out post-operational procedures**

**7.1** Learners must be able to describe how to manage surplus pesticide and dispose of waste materials, including:

- Outline one method of dealing with surplus concentrate pesticide
- Outline requirements for dealing with empty containers
  - Triple rinsed
  - Securely stored until disposal
  - Returned to supplier.
- Collected by a licensed waste contractor.

**7.2** Learners must describe how to clean and decontaminate the selected application equipment

May include:

- Using PPE
- When cleaning should take place
- Using an appropriate site
- Thorough washing with water and suitable additive if recommended
- Decontaminate both internal and external surfaces
- Use of in-built systems when provided
- Thorough flushing of systems
- Safe disposal of surplus dilute pesticide
- Dispose of washings in an appropriate manner.

**7.3** Learners to describe the procedure to check and carry out repairs to equipment

May include:

- Select an appropriate containment site and possible containers for contaminated material.
- Select and use appropriate PPE
- Ensure that the applicator is made safe (engine stopped, supports if appropriate) before carrying out checks.
- Safely isolate, drain and thoroughly decontaminate area or part to be replaced or repaired
- Move away from wash site before repairs undertaken
- Replace any worn or damaged parts.

**7.4** Learners must be able to describe the storage requirements for the selected application equipment, including:

- Requirements for PPE storage
- Ensuring the applicator is clean and dry
- Ensuring system is drained and all valves left in appropriate positions
- If appropriate, drawing antifreeze through system, particularly the pump
- Removing filters and nozzles and store appropriately
- Lubricating as required
- Storage undercover and out of direct sunlight
- Storage in a secure area.



## 6. Level descriptors

This qualification has been accredited at Level 2, this means that upon achieving the qualification the learner can be relied upon to possess the skills or knowledge described below.

Level	Knowledge Descriptor The learner has:	Skills Descriptor The learner can:
2	<ul style="list-style-type: none"> <li>• The knowledge and understanding of facts, procedures and ideas in an area of study or field of work necessary to complete well-defined tasks and address straightforward problems</li> <li>• The ability to interpret relevant information and ideas</li> <li>• Awareness of a range of information that is relevant to the area of study or work.</li> </ul>	<ul style="list-style-type: none"> <li>• Select and use relevant cognitive and practical skills to complete well-defined, generally routine tasks and address straightforward problems</li> <li>• Identify, gather and use relevant information to inform actions</li> <li>• Identify how effective actions have been.</li> </ul>

## 7. How is this qualification delivered?

In order to deliver this qualification, you will need to be a Lantra-approved provider. Details of how to become an approved provider are available by emailing our sales team, [sales@lantra.co.uk](mailto:sales@lantra.co.uk).

Approved providers should contact our quality and standards team to register for delivery of the qualification. It is important that providers are approved on a per-qualification basis as we are required to ensure that we have a quality-assurance strategy in place. It also ensures that providers receive the support they need. Upon scheme approval, you will receive the relevant documentation for delivery.

Learners must be registered via Quartzweb. Details of this process are available in the Quartzweb User Guide. Providers must submit the required information for learner registration. Learners should be registered for the qualification once they have been enrolled with the provider. Failure to register learners may prevent assessments from taking place. Sanctions may be imposed on providers if learners are not registered before the assessment takes place.

Learners will be required to undertake a practical demonstration of assessment activities and a professional discussion prompted by the assessor

### 7.1 Delivery in the UK

The specification for this qualification is approved for delivery in the United Kingdom. Ofqual regulates the qualification in England, and it is accredited on the Regulated Qualifications Framework (RQF). It has the following qualification accreditation number (QAN) 603/3238/4.

Regulated qualifications are subject to regular reviews to ensure their ongoing regulatory compliance and also to ensure that the content remains relevant and current throughout the life cycle of the qualification.

When the qualification is deemed no longer suitable, for example if technology has moved on and working practices are no longer relevant, Lantra will advise providers of a qualification end date. The end date marks the end of registrations. Any learners registered before this date will be allowed time to complete the qualification. For this qualification that period will stand as six months.

## 7.2 Who can deliver this Qualification?

Only approved Lantra providers can deliver this qualification. For information on becoming approved please contact Lantra via [sales@lantra.co.uk](mailto:sales@lantra.co.uk) or call on 02476 69 69 96.

## 7.3 Key safety-critical and technically critical aspects

The assessment for the Lantra Awards Level 2 Award in The Safe Application of Pesticides Using Variable Geometry Boom or Broadcast Sprayers requires learners to know relevant health and safety legislation and environmental good practice, and how environmental damage of using pesticides can be minimised.

Key safety-critical and technically critical aspects of the learning outcomes and assessment criteria have been identified (see below) to assist the assessor with assessment decisions during the observation of practical activities. If the learner is assessed to be at risk of not performing the activity to the required standard or endangering animal welfare or risks the health and safety of themselves or others, the assessor may stop the assessment and use their professional judgement to either:

- restart the assessment with the agreement of the learner
- or
- state that the assessment has not been achieved and advise the learner that they will need to apply to be assessed at a later date following further training.

The assessor must record the use, reasons and subsequent decision of the key safety-critical and/or technically-critical aspects to stop an assessment on the Assessment Report Form.

Please note the safety-critical and technically-critical assessment criteria are the same for the optional units as detailed below.

<b>Learning outcome The learner will:</b>	<b>Assessment criteria The learner can:</b>
4. Be able to calibrate the applicator	4.1 Carry out pre-use checks to the applicator
	4.2 Adjust settings appropriate to the application requirements
	4.3 Calibrate the applicator and record relevant data
	4.4 Measure the area/ volume to be treated
	4.5 Calculate the area or volume to be treated
	4.6 Calculate the quantities of pesticide and water required, if appropriate

<b>Learning outcome The learner will:</b>	<b>Assessment criteria The learner can:</b>
5. Be able to operate the application equipment	5.1 Measure the required quantities and add to the applicator, or attach a pesticide container
	5.2 Demonstrate safe and accurate application procedures
	5.3 Carry out all activities protecting human health and the environment
	5.4 Complete a treatment record

Where safety is breached, the assessor must record the way in which the key safety-critical and/or technically critical aspects have been applied and the reasons for any subsequent decision to stop an assessment on the Assessment Report Form.

In order to achieve the qualification and certification learners will be assessed on and must achieve **all** of the learning outcomes.

## 7.4 Provider resources

You need to consider things such as:

- up to date product labels
- a risk assessment for the activities/tasks/site
- a selection of nozzles and accessories
- a tape measure (2m and 25m)
- Personal Protective Equipment (PPE)
- timing equipment, for example a stop-watch
- measuring jugs, large and small
- marker poles or cones
- a wind speed indicator
- a magnifying glass.

## 7.5 Quality assurance and certification

### 7.5.1 Quality assurance of assessment decisions

This qualification is assessed using practical demonstration of assessment activities, professional discussion and a multiple-choice assessment paper, where previous achievement of the Principles of the safe use and application of pesticides unit has not been achieved. The assessor will indicate on the assessment report form whether a learner successfully demonstrates/discusses criterion. The assessment form and assessment paper are issued and marked by Lantra. Providers must return the signed and dated attendance register, the Assessment Report Forms, Assessment Papers (where applicable) and the Learner

Registration and Assessment Results form (LRAR). Quality assurance of the marking process is carried out to ensure that learners receive a validated outcome.

Providers must inform Lantra when an assessment is taking place as Lantra reserves the right, as part of its quality assurance process, to observe the invigilation of an assessment. This is to ensure that it is conducted according to requirements.

### **7.5.2 Claiming certification**

One of the assessment documents that providers need to submit is a completed LRAR which allows Lantra to process the certificates following quality assurance approval.

Once a learner has completed the assessment requirements, certificates will be issued by Lantra for providers to distribute to individual learners. Certificates will be issued to learners who achieve the necessary mark once assessment papers have been quality assured.

### **7.5.3 Skills Identity Card**

If the learner requires a Skills Identity Card they must supply the provider with one passport-style photograph. The provider must verify that the photograph is of the learner being assessed by signing the back of it. Alternatively, suitable photographs can be taken by the provider using a digital camera and emailed to [qualifications@lantra.co.uk](mailto:qualifications@lantra.co.uk). Please note, a high-resolution image must be used and cannot be cropped or cut out from a larger image.

The submission of the photograph must contain a declaration either on the back or within the email confirming that the image is of the learner: "I certify that this is a true likeness of [learner's full name]". Where a digital image is provided, the email should also include the provider's name, the qualification title, order ID and the date of the assessment.

Lantra requires the file name of the photograph to be the learner's name and the Quartz order number so that it can be easily reconciled with other assessment paperwork, e.g. joebloggs123456. Images which do not conform to this convention may cause a delay to the card being issued.

### **7.5.4 Replacement certification and Skills Identity Card**

If a learner loses the original certificate or Skills Identity Card, Lantra can issue a replacement. The learner will need to provide proof of identity (e.g. a passport or driving licence) and the details of the provider they were registered with. Lantra will check all claims for replacement certificates against the original Certificate Claim Form. The provider may be contacted for authentication. The certificate will be marked as a replacement. A fee is payable for replacement certificates and Skills Identity Cards. Please contact Lantra for the current fee.

## **7.6 Enquiries about results and appeals**

Lantra has an Enquiries about Results Policy and Appeals Procedure which can be used when a learner or provider has reason to believe there has been an error in either the administrative processes leading to an incorrect qualification award or there has been an issue in the assessment of the learner. Fees payable for enquiries about results will be refunded in full if the enquiry is upheld or if a learner's results are changed as a result of an enquiry.

Appeals can be made following the outcome of an enquiry about results if the learner/provider remains unhappy with the outcome or has further grounds to query the decision. Please note that appeals will not be accepted before a paid result enquiry has been conducted.

Providers must ensure that learner consent is obtained before an enquiry about a result is requested. Learners must be informed that assessment outcomes can change both positively and negatively.

Please refer to the Provider Handbook for further details.

## **7.7 Malpractice and maladministration**

Where malpractice is suspected, especially where there is doubt about the integrity of the assessment process, Lantra will immediately suspend further certification claims whilst an investigation is carried out. The regulatory authorities will be notified of any investigations and their outcome.

The claimant will be required to provide information about the suspected malpractice and the circumstances surrounding the matter. Malpractice, if found, may result in sanctions being imposed on the provider, certificates being revoked or even providers being barred from Lantra membership and reported to regulatory authorities.

Maladministration is linked to malpractice and can result in a malpractice investigation being launched. Maladministration could impact on the credibility of the assessment taking place or the outcomes achieved; for example, in the event of a failure to investigate suspected malpractice when asked to do so by Lantra. Please refer to the Lantra Malpractice and Maladministration Policy for further details.

## **7.8 Recognition of prior learning**

Recognition of prior learning (RPL) is defined as "A method of assessment that considers whether a learner can demonstrate that they can meet the assessment requirements for a qualification through knowledge, understanding or skills they already possess and do not need to develop through a course of learning."

It is important that providers make it clear to learners that the RPL process is associated with how the learner has acquired the required knowledge, understanding or skills; it does not mean the learner will be exempt from the assessment.

It is the responsibility of the assessor to decide if evidence provided by the learner is valid, reliable and current, and also meets the relevant assessment criteria. Where the assessor decides that the RPL does meet the assessment criteria, this must be clearly signposted in the tracking documentation.

It is recommended that providers refer to the Provider Handbook for further information on the implementation of RPL.

Where learners already hold the Principles of the Safe Use and Application of Pesticides unit or equivalent, evidence is to be provided to Lantra when claiming certificates. Learners will not be required to undertake the multiple-choice assessment paper if they wish to be certificated for another type of applicator.

## **7.9 Safeguarding - young people and vulnerable adults**

This qualification can be offered to learners in the 16–19 age group, as well as learners aged 19+. The Health and Safety at Work Act 1974 requires employers to ensure the health, safety and welfare at work of their employees and for providers to safeguard learners. Young people under the age of 18 and vulnerable adults can be exposed to risk when using work equipment due to immaturity, lack of experience or lack of awareness of existing or potential risks. Therefore, young people and vulnerable adults may need closer supervision.

For more information about young people at work, see Management of Health and Safety at Work Regulations 1999.

## **7.10 Additional requirements and reasonable adjustments**

Providers are expected to make appropriate arrangements, including reasonable adjustments, to ensure that learners with additional needs can access assessment wherever possible. These are detailed in the Equality and Diversity Policy within the provider Handbook which covers alternative assessment arrangements which can be made for learners.

Reasonable adjustments must not, however, result in a change to the learning outcomes and assessment criteria. For example, within this qualification learners must understand product information, which includes being able to interpret product labels written in English.

A provider must apply to Lantra for reasonable adjustments using the Reasonable Adjustments Request Form. Lantra recommends reasonable adjustment requests be submitted no later than six weeks prior to the assessment taking place, to allow a decision on their suitability to be made before the assessment. However, Lantra recognises that this may not always be possible, and we will do our best to process requests received after this point. Please note that no reasonable adjustment should be implemented without the prior approval of Lantra.

## 8. What does a provider need to do?

### 8.1 Management support

Experience has shown that qualification programmes run more effectively when given support by senior management. This can be achieved by appointing a person from the senior management team or a designated Qualification Manager and ensuring they are given the authority to monitor the quality management systems for the programme and to implement any required changes. This role is separate from the required role of an Internal Quality Assurer (IQA).

Management support can be demonstrated by ensuring that appropriate team members are allocated to the programme and given sufficient time and resources to carry out their roles effectively.

### 8.2 Provider records

Providers are required to retain learner records, which include the details listed below. Providers may already have their own systems which can be used to store records. If the necessary information is accessible and conforms to the requirements below, then no further records need to be created. Lantra does not prescribe the format in which records are kept.

Provider records must include:

- data about individual learners, including any reasonable adjustments
- assessment and action plans
- learner registration
- learner induction plan
- achievement of units
- feedback given to learners by assessors.

All records must be stored securely to avoid being falsified or fraudulent claims being made. All assessment records must be retained by the provider for at least **three years** after the learner has completed the assessment. It is the responsibility of the provider to ensure that data is cleansed at the appropriate time.

There is no prescribed format for these records and providers may wish to incorporate them into documentation they already maintain within their own organisation. If the provider already works to quality management systems such as the Scottish Quality Management System (SQMS), the ISO 9001 series or is required to maintain records for government-funded training schemes, that documentation will almost certainly provide an adequate basis for assessor records.



Providers may also need to adhere to separate requirements, where appropriate, with regard to the retention of records such as funding applications. Please refer to the specific requirements of the funding agency.

### **8.3 Support for learners**

Learners will need to follow an induction programme when enrolled on the qualification. This should be designed around a particular element or unit of the qualification so that they become familiar with the way the qualification operates.

Many learners will already have pre-existing skills and knowledge. A system will need to be introduced to identify these skills and how evidence from prior achievements can be recorded — see section 7.8 Recognition of prior learning.

Throughout the programme tutors and/or instructors should aim to provide feedback to learners on how they are progressing through the qualification. This is to ensure that, on the day of the assessment they are ready for the requirements of the question paper and the practical assessment. Feedback should be positive, constructive and used for future planning.

Some providers will have staff working in education support; in others, assessors may offer this support. It is important for each learner to have appropriate guidance and be directed towards additional information as required. Guidance on career opportunities may also be appropriate.

Learners with particular characteristics may need additional support from the provider/instructor. Refer to Lantra's Equality and Diversity Policy for further information relating to reasonable adjustments/special considerations. Learners with certain protected characteristics should not be discriminated against. They should be offered an assessment, where adjustments can be made to the assessment evidence requirements which would allow them to demonstrate competence or knowledge in different ways.

Learners must be informed when they have been registered for a qualification. It is also a regulatory requirement that Lantra be informed if a learner later withdraws from a qualification. Providers must also ensure that learners are informed when they have been withdrawn from a qualification for any reason and retain evidence of this.

Learners will not be recognised by Lantra until they have been registered. Lantra will have no obligation to unregistered learners if there is a problem completing the qualification, e.g. if provider ceases operations.

If for any reason a provider is not intending to renew their membership whilst they still have uncertified learners registered on a qualification, regulatory requirements stipulate that learner interests must be maintained. The provider may choose to transfer learners to another awarding organisation, otherwise the provider will still be required to complete the assessment of learners with Lantra and pay any fees due for quality assurance or certification.

## **9. Administration and important information**

### **9.1 Administration process for registration and certification**

The Quartzweb User Guide contains instructions on how to register learners.

Learners may transfer registration from one unit/qualification to another provided they are both offered by Lantra. This will incur an administration fee. If the registration fee for the new qualification is higher than for the previous one, providers will be invoiced for the difference. No refunds will be made if the registration fee for the new qualification is lower. Learners transferring to a different provider must register again with the new provider. Lantra may need to charge the learner's new provider an administration fee.

Learners must be informed when they have been registered for a qualification.

#### **9.1.1 Registering the learner**

Learners **must** be registered for a qualification before an assessment can take place. Please refer to the Quartzweb User Guide for details on how to register learners.

Each learner must give their surname/family name, forename, date of birth and postcode. The date of birth is important to distinguish between learners with the same name. Data on gender, ethnic origin and whether any reasonable adjustments have been requested are also required by the regulatory bodies so that achievements can be monitored for equal opportunities purposes and to ensure fair access to training and qualifications is achieved.

#### **9.1.2 Certificate claims**

Certificates can only be claimed for learners who are registered on Quartzweb. All certificate claims are checked against provider approval records and learner registration records. Certificates will not be issued to learners who are not registered before the assessment takes place. The learner's name will appear on the certificate in the same way as it is entered on Quartzweb.

#### **9.1.3 Regulatory authorities**

Occasionally Ofqual (the qualification regulator) may visit providers and require access to premises, meetings, learner assessment records, internal verification records, documents, data, learners and staff. If providers refuse access, Lantra will be required to suspend all future certificate claims until the requirements of the regulatory visit have been satisfied.

## 9.2 Assessment strategy

For this qualification, an assessment guidance document is available which includes full details of the assessment requirements. Below is a summary of the assessment strategy which supports this qualification. The assessment guidance contains details on:

- methods of assessment
- types of evidence which may be suitable
- key safety-critical and technically critical aspects.

Providers and assessors must ensure that they are familiar with the specifications and the requirements of the qualification.

Given the nature of the potentially hazardous work undertaken by operatives in the pesticides sector, the method used to assess whether the learner is occupationally competent is determined by legislation and the industry for which the qualification and relevant associated unit has been designed.

Unit and qualification assessment requirements set out the scope of evidence required in terms of equipment, services, statutory regulations and industry standards and systems.

Methods of assessment:

- Multiple-choice Assessment Paper
- Observation of practical activities
- Professional discussion.

Assessment requirements:

- For practical observations competence must be demonstrated and evidenced
- The assessor may decide that further observations are required to ensure that all assessment criteria have been met
- Assessors must be capable of identifying when competence has been demonstrated by the learner based on their own professional judgement
- The evidence is sufficient when the assessor judges the requirements of the qualification have been met and competence has been demonstrated by the learner
- There are no formal time limits to complete the qualification, or limits to the number of assessment opportunities provided. However, providers may wish to set guidelines for the length of time or amount of tuition offered to learners for financial or logistical reasons, taking into account the stated key safety-critical and technically critical aspects of the assessment. It is estimated that the practical assessment will take approximately two hours, depending on the learner.

**Access to assessment:**

- Learners should not be put forward for an assessment until they are deemed ready to be assessed
- This can be demonstrated through an evaluation of the learner's previous training and experience
- This underpins the assumption that the learner has sufficient technical expertise, knowledge, skill and maturity to meet the assessment requirements
- Key considerations for evaluation of the learner's previous training and experience include:
  - health and safety considerations
  - knowledge of pesticide legislation and pesticide products.

### 9.3 Funding

Approved qualifications may be eligible for funding from either the Education and Skills Funding Agency (ESFA) or the Skills Funding Agency (SFA), or equivalent bodies in Wales and Northern Ireland. The qualification is listed on The Ofqual Register of Regulated Qualifications and the Learning Records Service (LRS). Funding may be available to organisations which meet the requirements of the relevant agency.

In order for the funding to be linked to the learner, a Unique Learner Number (ULN) must be provided. This should be entered in the ULN field when registering the learner on Quartzweb. For information on how to obtain ULNs for your learners, please refer to the LRS guidance: [www.gov.uk/government/publications/lrs-unique-learner-numbers](http://www.gov.uk/government/publications/lrs-unique-learner-numbers)

### 9.4 Feedback, compliments and complaints

Lantra recognises that from time to time providers, learners, assessors and other personnel may have reason to provide feedback on a process, or have grounds for a complaint. We would also welcome compliments when aspects of our courses have been well received so that we can seek to implement best practice across our suite of products. The Lantra Feedback, Compliments and Complaints Procedure is published on the Lantra Awards website.

## Appendix 1 – Glossary of terms

Knowledge	Factual information that can be recalled as required. Individual can (for example) “identify” and/or “describe” key information relevant to the subject area.
Understanding	The application and extension of knowledge allowing organised thought, the generation of original ideas and critical thinking. Individual can (for example) “explain”, “analyse” and/or “evaluate”.
Skill	The application of knowledge and/or understanding in a practical context demonstrating practical competency. Individual can (for example) “operate”, “use” and/or “carry out”.
Learning outcome	How the learner will be changed by the learning/assessment process. That which the learner will, due to learning experiences, newly know, understand or be able to do.
Assessment criteria	Discrete criteria which holistically deliver on the promised objective of the qualification and which must all be evidenced to a unified (and/or graded) standard.
Qualification objective	A succinct summation of the overarching development of the learner in terms of tangible work or further developmental opportunities available as a result of achieving this qualification.
Qualification aim	A succinct summation of why this qualification is of value to the learner (without reference to assessment).
Transferable	Knowledge, understanding or skills which can be applied beyond the context in which they were taught to benefit the learner in different job roles, industries, contexts and/or personal situations.
Assessment guidance	Guidance used to advise centres on a general level of expectation rather than to prescribe a definitive list of evidence.
Delivery guidance	Guidance which, without reference to assessment, illustrates opportunities for evidence which might: <ul style="list-style-type: none"> <li>• Be naturally generated through the learning process</li> <li>• Offer innovative examples of delivery gathered through centre/learner consultation</li> <li>• Minimise the burden of assessment on centres and learners.</li> </ul>
Guided learning hours (GLH)	Approximate number of hours under immediate guidance or supervision of a lecturer, supervisor, tutor or teacher.
Directed study	An estimate of the number of hours a Learner will reasonably be likely to spend in preparation, study or any other form of participation in education or training, including assessment, which takes place as directed by – but, <b>unlike</b> Guided Learning, not under the <b>immediate</b> Guidance or Supervision of – a lecturer, supervisor, tutor or other appropriate provider of education or training.
Total qualification time (TQT)	Guided learning hours + directed study Total Qualification Time is the number of notional hours which represents an estimate of the total amount of time that could reasonably be expected to be required in order for a Learner to achieve and demonstrate the achievement of the level of attainment necessary for the award of a qualification.
Recognition of prior learning	A method of assessment that considers whether a learner can demonstrate that they meet the assessment requirements for a unit through knowledge, understanding or skills they already possess and do not need to develop through a course of learning.

## Appendix 2 – Census Ethnic Group Classifications (2011)

Please use the following code(s) to indicate ethnicity when completing the learner registration.

England and Wales		Northern Ireland		Scotland	
01	<b>White:</b> English/Welsh/Scottish/ Northern Irish/British	19	<b>White:</b> White	30	<b>White:</b> Scottish
02	Irish	20	Irish Traveller	31	British
03	Gypsy or Irish Traveller	21	<b>Asian/Asian British:</b> Indian	32	Irish
04	Any other White background	22	Pakistani	33	Any other White background
05	<b>Mixed/multiple ethnic groups</b> White and Black Caribbean	23	Bangladeshi	34	<b>Mixed:</b> Any mixed/multiple Ethnic background
06	White and Black African	24	Chinese		<b>Asian, Asian Scottish or Asian British:</b>
07	White and Asian	25	<b>Black, Black Irish or Black British:</b> Black Caribbean	35	Indian
08	Any other Mixed/multiple ethnic background	26	Black African	36	Pakistani
09	<b>Asian/Asian British:</b> Indian	27	Black other	37	Bangladeshi
10	Pakistani	28	<b>Mixed:</b> Mixed ethnic group	38	Chinese
11	Bangladeshi	29	<b>Other ethnic group:</b> Any other ethnic group	39	Any other Asian background
12	Chinese			40	<b>Black, Black Scottish or Black British:</b> Caribbean
13	Any other Asian background			41	African
14	<b>Black/African/Caribbean/ Black British:</b> African			42	Any other Black background
15	Caribbean			43	<b>Other ethnic group:</b> Any other ethnic group
16	Any other Black/African/ Caribbean background				
17	<b>Other ethnic group:</b> Arab				
18	Any other ethnic group				



**LANTRA**  
AWARDS

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