



Unit 8: Animal Production Systems

Delivery guidance

Approaching the unit

This unit focuses on the skills, knowledge and behaviours that will enable learners to explore the production of animals in a variety of settings.

Learners will investigate the factors that affect animal production in agriculture and the systems that can be used.

Learners will investigate the housing and husbandry requirements to enable animals to grow to maturity. You will demonstrate how learners could use numeracy skills to measure different aspects of livestock.

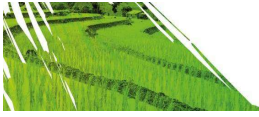
You should demonstrate good practice in relation to animal and human health and disease prevention. This is an exciting and excellent opportunity for learners to demonstrate their practical housing and husbandry skills.

You should prepare your learners before they undertake any practical work with livestock by providing enough information and guidance on health and safety and the risk of zoonoses. You should encourage learners to undertake practical activities in order to develop their skills that will enable them to work successfully in their preferred industry.

Delivery of this unit can be flexible and draw upon expertise and knowledge from a range of tutors, such as from the vocational area or ICT specialists. The unit may be combined with delivery of other relevant units such as Unit 2: Estate Skills or Unit 12: International Sheep Production.

Access to ICT facilities and mobile technology (e.g. for recording practical activities) will be required for the delivery and assessment of this unit.

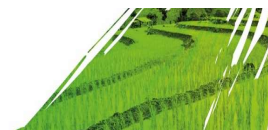
You could introduce learning aim A by focusing on the factors that affect animal production, for example geographic, financial and the environment. Learning aim A will encourage learners to consider animal production a national and international level, considering domestic and commercial breeds and their suitability for production systems. This learning aim offers the opportunity to gain a wider understanding of animal production systems and the factors that affect animal production in agriculture. It would be useful to ask guest speakers from industry to deliver aspects of animal production and production systems. Visits to agricultural establishments would enhance the delivery of this learning aim.



Learning aim B focuses on the environment and housing and husbandry needs of animals in production systems. You could introduce learning aim B by looking at how the design of animal accommodation can impact on their health and welfare. Learners could calculate ration formulations for the livestock in their care and identify how suitable rations can contribute to animal growth and maturity.

Learners would benefit from visits to different agricultural establishments to observe the different stages of production in a variety of production systems. You could invite a guest speaker such as an animal nutritionist to enhance the delivery of this learning aim.

You could introduce learning aim C by considering the zoonotic diseases that have and are affecting populations nationally and internationally. You could use case studies to demonstrate the importance of disease prevention and the biosecurity measures that should be in place to protect animals and humans. You could invite guest speakers such as Animal Health Inspectors who can outline measures in place to prevent the spread of zoonotic infections.



Assessment model

Learning aim	Key content areas	Recommended assessment approach
A Explore the role of animal production in agriculture	A1 Factors affecting animal production A2 Animal production in agriculture	A case study and report on the measures taken to protect animal and human health during animal production
B Investigate animal production systems	B1 Housing and husbandry requirements B2 Animal growth and maturity B3 Performance indicators	
C Examine animal and human health during animal production	C1 Human health C2 Animal health	

Assessment guidance

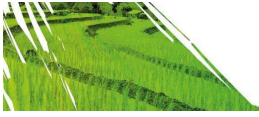
This is an internally assessed unit. The report should include how and why animals are used in agriculture and how they are provided with the appropriate environment in order to grow to maturity. Learners must also include how to prevent and control potential hazards that can occur during commercial animal production in order to preserve the health of animals and humans.

It would be useful for the tutor to develop external links with a range of work experience land-based businesses to allow for a range of work placement opportunities and visits. It will also be helpful for learners to be able to access opportunities to help them develop independent working and interpersonal skills.

The case study could contain a range of evidence such as environmental impact assessments, feeding plans, health plans and observation records. The report should evaluate the measures taken to protect both animals and humans during animal production and consider the effectiveness of the control measures that can be implemented and the importance of accountability and traceability in food production.

Evidence can be presented imaginatively, for example as a hard copy, or as an electronically. Other suitable methods of assessment could include:

- blogs
- vlogs
- wikis
- YouTube links



- presentation and speaker notes
- fact files and/or leaflets

This unit provides the flexibility to combine assessments from other related units into a single assessment that provides evidence for more than one unit. For example, it may be possible to combine assignments for Unit 7 Work Experience in the Land-Based Sectors, Unit 9 International Poultry Production, Unit 12 International Sheep Production, Unit 13 International Beef Production or Unit 14 International Dairy Production with this unit. Careful planning would be needed to ensure that the BTEC assessment rules are not breached. It is important to remember that all learning aims and assessment criteria from each unit must be clearly set out and met in any integrated assignment and that the assessment follows the required delivery so that learners are working independently.



Getting started

This provides you with a starting place for one way of delivering the unit, based around the recommended assessment approach in the specification.

Unit 8: Animal Production Systems

Introduction

Learners will develop their awareness of the global agricultural industry and their contribution to it. You can start this by assessing their awareness of the sector and the different methods of animal production systems. You can expand this by looking at how systems differ on a national and international scale. Learners will benefit from visits to animal production establishments to see at first hand the different production systems in place. This will help learners to make judgments about whether they are successful or not.

Learners will carry out practical activities such as assessment of feed suitability and animal health checks. Learners are also required to plan, monitor and record information relating to animal production systems.

Learners will develop the practical skills that are required to enable entry into employment in the land-based sector (such as working in animal or crop production). The research they undertake will help them identify potential areas for further study (for example animal science, crop science or estate management) or in an apprenticeship in land-based sectors.

Learners will benefit from the opportunity to carry out independent research.

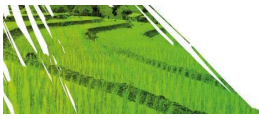
It is important to build and maintain links with industry, such as local businesses and organisations that may be willing to provide visits for learners.

You could invite representatives from such organisations to talk to your learners about the different production systems in use and how common transmissible and zoonotic diseases can be controlled to ensure the maintenance of animal and human health.

Learning aim A - Explore the role of animal production in agriculture

A1

- You could begin by discussing the Learning Aim and ask learners to think about the different types of animal production system in use.
- Ask learners to research the differences between the systems used to produce meat, milk, wool and eggs. They should consider the breeds, domestic and commercial and their suitability for different production systems. Learners could produce an identification guide which shows the breeds used and their associated production systems.
- Lead a discussion (possibly with the help of a guest speaker from industry as a link to industry) on current conditions in the industry, nationally and internationally. Ask learners to produce a fact sheet(s) which discusses how these conditions impact stock numbers, range of products and consumer trends.
- Ask learners to research the geographic and environmental factors affect production systems and how climate, altitude, seasonal changes, soil fertility and availability of land, impact on animal production systems. This could be linked to other factors that affect the choice of production system, such as financial, economic, environment and current relevant



legislation and codes of practice. Paired learners could then use their research to produce a presentation on how these factors affect the choice of production system.

- Introduce learners to the availability of funding available to support animal producers. Discuss the local, national and international levels of financial support that can be applied for. A specialist guest speaker may be required to support this.

A2

- Lead a discussion on the different roles that people have within small, medium and large-scale animal production and the impact on the local, national and international economy. Learners should complete a research task based on a type of production system they are interested in, they should consider intensive and extensive production and the environmental impact, how waste can be successfully managed, and pollution controlled.
- Ask learners to research how best practice can be shared. Learners can produce a leaflet which outlines where support and networking is available.
- Lead a discussion on the issues associated with large-scale production systems, such as its design, work routines, allocation and roles of staff and stock turnover. Learners would benefit from a visit to a small, medium and large-scale animal production system. They could then compare the differences between the systems.

Learning aim B – Investigate animal production systems

Learning Aim B is concerned with the welfare of animals kept in production systems and how best to provide for their needs and monitor their health and growth. Access to a variety of animal production systems will be essential for the delivery of this Learning Aim.

B1

- Lead a discussion on the needs of animals that are kept in different types of production systems. Paired students can research different systems and animal needs including design of accommodation, fixtures and fittings and how the design of accommodation impacts on animal health and welfare and the environment. Learners could identify ideal accommodation to meet the needs of animals in different production systems.
- Learners will benefit from visits to a variety of animal production systems – small, medium and large scale. Ask learners to carry out an environmental assessment on one of the establishments visited and suggest possible improvements.
- Learners will identify the stages of the production cycle for one production system, including the resources and equipment required, along with the need for planning, monitoring and recording. Learners should also consider all current legislative requirements with respect to the production cycle.

B2

- Ask learners to research the nutritional requirements for animals in a production system, taking into consideration life stage, energy requirements, feed intake and supplements. They should also look at how body weight and growth can be monitored and recorded. It would be beneficial for learners to carry out condition scoring of livestock in production systems. Review the different scoring systems and into which category different markets require carcasses to fit.



B3

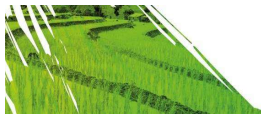
- Lead a discussion on the purpose of performance targets and indicators used in animal production systems. Ask learners to research the types of targets and indicators used and how they can be used to maximise efficiency and production.
- Use case studies to have learners consider selection of breeding stock
- Have learners produce their own livestock reports including graphs, charts, storage, veterinary, deaths and disposal, and husbandry.

Learning aim C – Examine animal and human health protection during animal production

Learning Aim C considers the need for good hygiene measures in order to prevent the spread of disease to both animals and humans. Learners will consider the factors that affect spread of disease and the measures that can be taken to prevent it.

C1 & C2

- Ask learners to research the different types of common transmissible and zoonotic disease and pathogens that affect livestock and humans. This should be at local, national and global levels. Learners could produce a fact sheet(s) on the information gathered for future reference.
- Lead a discussion (possibly with the help of an industry specialist, such as a livestock vet or Environmental Health Officer) on traceability of livestock in the food production chain. Include how hazards can be controlled and use of biosecurity in the control and prevention of the spread of disease. Research past biosecurity issues and their long-term affect on livestock farming.
- Provide learners with a case study of a major disease outbreak in the food production system and ask them to review it in terms of the factors that affect the spread of disease amongst animals and the interventions that can be put in place to prevent epidemics. They should also consider current relevant legislation and standards designed to ensure the health and welfare of animals in food production systems.



Details of links to other BTEC units and qualifications, and to other relevant units/qualifications

This unit links to all units in the Pearson BTEC Level 3 Nationals in Land-Based Studies, but particularly:

- Unit 9: International Poultry Production
- Unit 10: Farm Livestock Husbandry
- Unit 11: International Pig Production
- Unit 12: International Sheep Production
- Unit 13: International Beef Production
- Unit 14: International Dairy Production

Resources

In addition to the resources listed below, publishers are likely to produce Pearson-endorsed textbooks that support this unit of the BTEC Nationals in XX. Check the Pearson website (<http://qualifications.pearson.com/endorsed-resources>) for more information as titles achieve endorsement.

Textbooks

[Alphabetical: author surname, initial, *Book title* (edition), publisher, year ISBN
Explain why this textbook is useful.]

Beeken, F.L. *Chicken Manual: A Complete Step-by-Step Guide to Keeping Chickens*, (1st edition) J.H.Haynes and Co. LTD., 2010, ISBN: 9781844257294. This is a useful introduction to chicken keeping.

Blawley, R. *The Veterinary Book for Dairy Farmers* (4th edition) Old Pond Publishing, 2016 ISBN: 9781908397775. This book details the veterinary requirements for dairy animals.

Ofem, R. *Poultry Farming for Beginners: Practical Guide to Start Poultry Farming from the Beginning* (1st edition) CreateSpace Independent Publishing Platform, 2018 ISBN: 9781719400954

Phillips, C.J.C. *Principles of Cattle Production* (3rd edition), CABI 2018 ISBN: 9781786392718

Shankland, L. *Sheep Manual: The Complete Step-by-Step Guide to Caring for Your Flock* (1st edition) J.H.Haynes and Co. LTD, 2015 ISBN: 9780857337702

Shankland, L. *Smallholding Manual: The Complete Step-by-Step Guide* (1st edition) J.H.Haynes and Co. LTD, 2012 ISBN: 9780857332257

Vyas, N.K. *Diagnosis of Dairy Farming and Poultry Diseases* (1st edition) Westbury Publishing 2020 ISBN: 9781913229016

Winter, A.C. *Sheep Health, Husbandry and Disease: A Photographic Guide* (1st edition) The Crowood Press 2011, ISBN: 978184972354



Websites

Visit the International Farm management Association website. This website is of interest to those who have an interest in agriculture and livestock production. They produce educational resources, videos and reports.

The official website of the European Union and can be used to search legislation relating to the European Union.

Pearson is not responsible for the content of any external internet sites. It is essential for tutors to preview each website before using it in class so as to ensure that the URL is still accurate, relevant and appropriate. We suggest that tutors bookmark useful websites and consider enabling students to access them through the school/college intranet.