Higher National Unit Specification

General information for centres

Unit title: Livestock Growth, Health and Welfare

Unit code: F2E8 34

Unit purpose: This Unit will equip candidates with a fundamental knowledge and understanding of the principles of animal growth, health and welfare. The Unit may be suitable for candidates who are studying for a Group Award in an area related to agriculture, or the rural economy.

On completion of the Unit the candidate should be able to:

1   Describe the range of feeds used for livestock and explain their nutrient value and use.
2   Explain the physiology of growth and lactation and the ability to manipulate these processes to influence meat quality and milk composition.
3   Explain the principles of maintaining livestock health.
4   Explain the welfare standards set for cattle, sheep, pigs and poultry.

Credit points and level: 1 HN credit at SCQF level 7: (8 SCQF credit points at SCQF level 7*).

SCQF credit points are used to allocate credit to qualifications in the Scottish Credit and Qualifications Framework (SCQF). Each qualification in the Framework is allocated a number of SCQF credit points at an SCQF level. There are 12 SCQF levels, ranging from Access 1 to Doctorates.

Recommended prior knowledge and skills: Though there are no formal prior knowledge requirements for this Unit it would be an advantage for candidates to have studied biology at SCQF level 5 or 6.

Core Skills: There are opportunities to develop the Core Skills of *Communication* at SCQF 6, *Information Technology* SCQF level 4, although there is no automatic certification of Core Skills or Core Skills components.

Context for delivery: If this Unit is delivered as part of a Group Award, it is recommended that it should be taught and assessed within the subject area of the Group Award to which it contributes.

Assessment: All Outcomes may be assessed by closed-book, restricted response questions. These could be a combination of multiple choice, short answer, drawing or labelling diagrams and restricted responses. Alternatively, part of Outcome 4 could be assessed by an assignment.

Higher National Unit specification: statement of standards

Unit title: Livestock Growth, Health and Welfare

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The sections of the Unit stating the Outcomes, Knowledge and/or Skills, and Evidence Requirements are mandatory.

Where evidence for Outcomes is assessed on a sample basis, the whole of the content listed in the Knowledge and/or Skills section must be taught and available for assessment. Candidates should not know in advance the items on which they will be assessed and different items should be sampled on each assessment occasion.

Outcome 1

Describe the range of feeds used for livestock and explain their nutrient value and use

Knowledge and/or Skills

♦   Digestive system of ruminant and non ruminant livestock
♦   Feed recognition and classification
♦   Feed quality
♦   Maintenance and production requirements

Evidence Requirements

Candidates will need to provide evidence to demonstrate their Knowledge and/or Skills by showing that they can:

♦   explain the difference between ruminant and non ruminants with regard to the digestive tract and the types of feed that can be utilised
♦   identify 8 out of 12 selected specimens of roughages, concentrates, by-products and supplements
♦   classify each of the selected specimens in terms of feed quality; with reference to energy, protein and dry matter levels
♦   explain the nutritional requirements for maintenance and production in livestock. Explanations must cover growth, lactation, and pregnancy.

Assessment Guidelines

This Outcome may be partly assessed by an identification test under supervised conditions with the remainder assessed by closed-book, restricted response questions. These could be a combination of multiple choice, short answer, drawing or labelling diagrams and restricted responses.

Higher National Unit specification: statement of standards (cont)

Unit title: Livestock Growth, Health and Welfare

Outcome 2

Explain the physiology of growth and lactation and the ability to manipulate these processes to influence meat quality and milk composition

Knowledge and/or Skills

♦ Allometric growth principles
♦ Manipulation of growth and meat quality
♦ Mammary development and function
♦ Milk biosynthesis, secretion and ejection
♦ Milk composition and lactation curves
♦ Milk quality and hygiene

Evidence Requirements

Candidates will need to demonstrate their Knowledge and/or Skills by showing that they are able to:

♦ explain the principles of allometric growth in terms of rate and order of tissue (nervous, bone, muscle, fat) maturation
♦ explain the ability to manipulate growth through diet and level of feeding
♦ explain the factors (age, sex, mature size, breed) influencing meat quality
♦ describe mammary development and function in terms of milk biosynthesis, secretion and ejection
♦ describe the composition of bovine milk in terms of fats and non fat solids
♦ describe the typical bovine lactation curve
♦ describe the methods for detecting and controlling mastitis to ensure good milk quality

Assessment Guidelines

This Outcome may be assessed by closed-book, restricted response assessment. The questions could be a combination of multiple choice, short answers, drawing or labelling diagrams and restricted responses.

Higher National Unit specification: statement of standards (cont)

Unit title: Livestock Growth, Health and Welfare

Outcome 3

Explain the principles of maintaining livestock health

Knowledge and/or Skills

♦ Microbiology of disease
♦ Disease recognition
♦ Causes and transmission of disease
♦ Disease control and prevention

Evidence Requirements

The candidate will provide evidence to demonstrate their knowledge and understanding of the principles of maintaining animal health through disease recognition and treatment.

Candidates will need to demonstrate their Knowledge and/or Skills by showing that they are able to:

♦ describe the main pathogens of significance in livestock disease. This must cover bacteria, fungi, viruses and protozoa.
♦ describe the factors affecting microbial growth. This must cover moisture, temperature, energy source and air.
♦ describe at least one of each of the following types of disease affecting livestock: infectious, contagious, parasitic and metabolic.
♦ explain the causes and transmission of each of these diseases. Explanation of causes must cover primary and secondary factors, and explanation of transmission must cover spread via relevant tract or skin contact.
♦ explain the control and prevention of each of these diseases.

Assessment Guidelines

This Outcome may be assessed by closed-book, restricted response questions. These could be a combination of multiple choice, short answer, drawing or labelling diagrams and restricted responses.

Higher National Unit specification: statement of standards (cont)

Unit title: Livestock Growth, Health and Welfare

Outcome 4

Explain the welfare standards set for cattle, sheep, pigs and poultry

Knowledge and/or Skills

♦ Five freedoms (welfare based)
♦ Welfare codes of practice for stockpersons
♦ Welfare legalisation

Evidence Requirements

Candidates will need to provide evidence to demonstrate their Knowledge and/or Skills by showing that they can:

♦ explain the five freedoms (freedom from hunger; discomfort; disease; fear and distress; and freedom to display normal behaviour)
♦ explain the role of the stockperson in the interpretation and implementation of the welfare codes in practice for at least four of the following: husbandry procedures, handling procedures, feed and water requirements, housing requirements, space allowances, record keeping
♦ describe current welfare legalisation affecting the husbandry and management of farm livestock for at least two of the following: The Animal Health Act, The Protection of Animals (Anaesthetics) Acts, Welfare of Animals Transport Order, Foot and Mouth Disease Order

Assessment Guidelines

Assessment of this Outcome may be by the combination of an assignment that candidates complete by accessing online versions of the welfare codes, with a restricted response assessment covering the other knowledge and skills.

Administrative Information

Unit code: F2E8 34

Unit title: Livestock Growth, Health and Welfare

Superclass category: SH

Original date of publication: August 2008

Version: 01

History of changes:

Version	Description of change	Date

Source: SQA

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Higher National Unit specification: support notes

Unit title: Livestock Growth, Health and Welfare

This part of the Unit specification is offered as guidance. The support notes are not mandatory.

While the exact time allocated to this Unit is at the discretion of the centre, the notional design length is 40 hours.

Guidance on the content and context for this Unit

This Unit will allow candidates to develop a fundamental knowledge and understanding of the growth, health and welfare of livestock.

Outcome 1 is designed to give candidates a sound overall knowledge of the range of feedstuffs used in livestock production and the origin and characteristics of these feeds. An understanding of the classification of feeds according to their characteristics and nutritional value will also be gained in addition to any constraints on their use.

Outcome 2 extends candidates' knowledge of the physiology of growth and lactation and examines the ability to manipulate these processes and thereby influence meat quality and milk composition.

Outcome 3 gives candidates a sound knowledge of disease, as well as enabling them to explain the underlying casual organisms of diseases and to recognise common diseases in livestock. An understanding of the modes of transmission of disease and methods for control and prevention will also be gained.

Outcome 4 is intended to explain the role and use of welfare codes by stockpersons within their routine husbandry of farm livestock. It also looks at the current legalisation pertaining to farm livestock.

Guidance on the delivery and assessment of this Unit

The delivery of this Unit could take the form of a mixture of lectures, tutorials, practical examples and farm visits. Practical examples could include feed recognition, microbiological investigation and examination of post mortem material. Where appropriate, the study of animal welfare could be on visited farms in order to enhance the appreciation and evaluation of the livestock codes of practice. Visits to any farms will allow for a greater understanding of the practical application of theory, since this can be seen firsthand.

The production of appropriate evidence for assessment of Outcomes 1, 2 and 3 could be generated by use of a holistic approach to assessment.

Opportunities for developing Core Skills

There are opportunities to develop the Core Skills of *Communication* at SCQF 6, and *Information Technology* at SCQF level 4 in this Unit.

Communication may be developed across all Outcomes, as candidates are asked to deal with complex subjects such as in principles of allometric growth in Outcome 2 and the main pathogens of significance in livestock disease in Outcome 3.

Higher National Unit specification: support notes (cont)

Unit title: Livestock Growth, Health and Welfare

There are opportunities to develop the Core Skill of *Information Technology* as candidates may use IT for research purposes, such as to access online versions of the Welfare Codes, in completion of the assignment in Outcome 4.

Open learning

The Unit could be delivered by blended learning with Outcome 1, 2, 3 and 4 delivered via distance learning in addition to some practical examples and farm visits.

Candidates with disabilities and/or additional support needs

The additional support needs of individual candidates should be taken into account when planning learning experiences, selecting assessment instruments, or considering alternative Outcomes for Units. Further advice can be found in the SQA document *Guidance on Assessment Arrangements for Candidates with Disabilities and/or Additional Support Needs* (**www.sqa.org.uk**)**.**

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Outcome 2 extends your knowledge of the physiology of growth and lactation and examines the ability to manipulate these processes and thereby influence meat quality and milk composition.

Outcome 3 will give you a sound knowledge and enable you to explain the underlying casual organisms of diseases and to recognise common diseases in livestock. An understanding of the modes of transmission of diseases and methods of controlling and preventing diseases will also be gained.

Outcome 4 explains the role and use of welfare codes by stockpersons within their routine husbandry of farm livestock. An awareness of current legalisation pertaining to farm livestock will also be gained.

During the course of this Unit there are opportunities for you to develop Core Skills in the areas of *Communication* and *Information Technology*.