



Higher National Unit specification

General information for centres

Unit title: Livestock Nutrition

Unit code: F2EC 35

Unit purpose: This Unit aims to develop an in-depth understanding of the principles of livestock nutrition on which efficient feeding systems depend. It is taught in the general context of agricultural livestock species and other economically important species in the land-based sector. 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 Explain the digestion and utilisation of feeds by farm livestock.
- 2 Evaluate the use of feeds and feed supplements in livestock production.
- 3 Formulate rations and diets for farm livestock.

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

**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: Access to this Unit is at the discretion of the centre. However, it would be advantageous for candidates to have achieved the HN Unit F2E8 34 *Livestock Growth, Health and Welfare*.

Core Skills: There are opportunities to develop the Core Skills of *Numeracy* (Using Number) and *Information Technology* in this Unit at SCQF level 6, 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: Outcomes 1 and 2 could be assessed by a closed-book test whilst Outcome 3 could be assessed by a ration workbook completed during practical sessions.

Higher National Unit specification: statement of standards

Unit title: Livestock Nutrition

Unit code: F2EC 35

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

Explain the digestion and utilisation of feeds by farm livestock.

Knowledge and/or Skills

- ◆ Feed evaluation
- ◆ Digestion of feeds
- ◆ Metabolism and utilisation of nutrients

Evidence Requirements

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

- ◆ explain feeds in terms of their nutritional composition. Explanations will include: carbohydrates, proteins, lipids, minerals, trace elements and vitamins
- ◆ explain the digestion of feeds and the metabolism and utilisation of nutrients by farm animals for maintenance and production. Explanations will cover cattle, sheep and pigs
- ◆ evaluate feeds in terms of their nutritional characteristics. Evaluation will cover digestibility, energy, protein, minerals, trace elements and vitamins
- ◆ explain uses and constraints on the use of selected feeds. Explanations will cover roughages, by-products and supplements.

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 Nutrition

Outcome 2

Evaluate the use of feeds and feed supplements in livestock production

Knowledge and/or Skills

- ◆ Control and prevention of disorders
- ◆ Use of supplements and additives
- ◆ Reasons for feed processing
- ◆ Types of feed processing

Evidence Requirements

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

- ◆ explain the causes, prevention and control of at least one digestive, one metabolic and one deficiency disorder
- ◆ evaluate the use of at least one specialist feed, one supplement and one additive, used to enhance animal performance
- ◆ describe the types and reasons for processing at least 3 named feeds. The reasons for processing will cover: increased bulk density, aiding digestion, increase in utilisation, increase in digestibility, preservation, and inactivation of anti-nutritional factors.

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 Nutrition

Outcome 3

Formulate rations and diets for farm livestock

Knowledge and/or Skills

- ◆ Nutrient requirements for livestock
- ◆ Feed selection
- ◆ Diet evaluation and formulation

Evidence Requirements

Candidates will need to provide evidence to demonstrate their Knowledge and/or Skills by showing that they can calculate balanced rations and diets to meet the requirements for each of the following classes of livestock:

- ◆ dairy cattle in early and mid lactation
- ◆ finishing beef cattle
- ◆ pregnant ewes.

The balanced rations and diets will take account of nutrient requirements, appropriate feed selection, and will be formulated, based on an evaluation of how the proposed diet will affect the particular livestock.

Assessment Guidelines

This Outcome could be assessed by a ration workbook completed during computer based practical sessions.

Administrative Information

Unit code: F2EC 35
Unit title: Livestock Nutrition
Superclass category: SH
Original date of publication: August 2008
Version: 01

History of changes:

Version	Description of change	Date

Source: SQA

© Scottish Qualifications Authority 2008

This publication may be reproduced in whole or in part for educational purposes provided that no profit is derived from reproduction and that, if reproduced in part, the source is acknowledged.

SQA acknowledges the valuable contribution that Scotland's colleges have made to the development of Higher National qualifications.

Additional copies of this Unit specification can be purchased from the Scottish Qualifications Authority. Please contact the Customer Contact Centre for further details, telephone 0845 279 1000.

Higher National Unit specification: support notes

Unit title: Livestock Nutrition

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 nutrition of livestock such as sheep, cattle and pigs and the formulation of suitable diets for various classes of stock.

Outcome 1 is designed to give candidates a sound overall knowledge of the principles of animal nutrition with respect to the evaluation and digestion of feeds and the metabolism and utilisation of nutrients.

Outcome 2 extends candidates' knowledge in terms of the range of specialist feeds and feed supplements used in livestock nutrition, in order to enhance performance and prevent metabolic disorders. It also looks at feed processing. Candidates will learn both about the reasons behind this activity, and types of feed processing such as physical and chemical.

Outcome 3 develops the ability of candidates to produce suitable rations for the main classes of livestock, through the use of both manual and computer assisted calculation. Candidates will calculate balanced rations and diets to meet the requirements for various classes of livestock including dairy cattle in early and mid lactation, finishing beef cattle and pregnant ewes.

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 visits. Practical examples could include the examination of digestive tracts and the calculation of rations using relevant software. Where appropriate, the study of the manufacture of feeds could be based on visited feedmills or similar.

Opportunities for developing Core Skills

There are opportunities to develop the Core Skills of *Numeracy* and *Information Technology* in this Unit. Candidates will be required to undertake calculations to determine suitable diets and rations for various classes of stock using in some cases suitable software programmes within Outcome 3 and these skills could be developed to SCQF level 6.

Open learning

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

Higher National Unit specification: support notes (cont)

Unit title: Livestock Nutrition

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).

General information for candidates

Unit title: Livestock Nutrition

This Unit will allow you to develop an in-depth understanding of the principles of livestock nutrition on which efficient feeding systems depend. It may be suitable if you 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 Explain the digestion and utilisation of feeds by farm livestock.
- 2 Evaluate the use of feeds and feed supplements in livestock production.
- 3 Formulate rations and diets for farm livestock.

In Outcome 1 you will look at feeds in terms of their nutritional composition, and how their nutrients are utilised, in the farming of animals such as cattle, sheep and pigs, in maintenance and production. You will also look at the uses and constraints of selected feeds such as roughages and at by-products and supplements.

Outcome 2 will extend your knowledge in terms of the range of specialist feeds and feed supplements used in livestock nutrition, to enhance performance and prevent metabolic disorders. You will learn about control and prevention of disorders, the use of supplements and additives, the reasons behind feed processing and the different types such as physical and chemical feed processing.

Outcome 3 will develop your ability to produce suitable rations for the main classes of livestock. You will look at nutrient requirements for livestock, feed selection, and diet evaluation and formulation. Then, through the use of both manual and computer assisted calculation, you will produce balanced rations and diets for dairy cattle in early and mid lactation, finishing beef cattle and pregnant ewes.