Higher National Unit specification

General information for centres

Unit title: Grass and Fodder Crop Production

Unit code: F1Y9 34

Unit purpose: The aim of this Unit is to allow candidates to acquire skills and knowledge in relation to grass and non grass fodder crops. It will allow candidates to be competent in identifying species and their characteristics. Candidates will build technical knowledge and understanding of the production of grass and fodder crops. This Unit is aimed at operators within the livestock sector of farming. On completion of the Unit the candidate will be able to:

1 Identify and describe the characteristics of a range of grass species and fodder crops grown in the UK.
2 Describe the establishment, production and utilisation of grass.
3 Describe the establishment, production and utilisation of a fodder crop.

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: There are no specific knowledge and skills required to study this Unit. However it would be beneficial if candidates had a working knowledge of grassland management from practical farming experiences.

Core Skills: There are opportunities to develop the Core Skills of *Problem Solving*, *Numeracy* and *Communication* 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: Assessments could involve a mixture of closed-book restricted tests (Outcome 1 and 2 partly), a practical identification test (part of Outcome 1) and a project or case study to assess part of Outcome 2 and all Outcome 3 together or as separate assessments.

Higher National Unit specification: statement of standards

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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

Identify and describe the characteristics of a range of grass species and fodder crops grown in the UK

Knowledge and/or Skills

- Grass species identification
- Fodder Crop identification
- Grass species characteristic descriptions
- Fodder Crop characteristic descriptions
- Potential use of grass species and fodder crops

Evidence Requirements

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

- identify grass species and fodder crops grown in the UK
- select appropriate grass species and fodder crops describing their characteristics and potential for use

An identification test under supervised conditions with the use of an appropriate grass identification key would generate suitable evidence. Fodder crops do not require an identification key. A standard for Pass would be correctly identifying 8 out of 10 for both grass and fodder crops. Grass species may be in vegetative and/or reproductive growth stage for the purpose of identification by the candidate.

Evidence for characteristic descriptions and potential use of species and crops should be generated by selecting appropriate crops or species and describe their characteristics. A minimum of four grass and four fodder crops should be assessed and answered correctly.

Evidence for this Outcome should be assessed under controlled conditions.

Assessment Guidelines

In assessing Outcome 1 fresh living material could be used wherever possible however dried or colour photographic material may be used if fresh material is not available. This Outcome could be assessed using an identification practical under supervised conditions together with an open-book restricted response exercise on selecting grass species or fodder crops for given scenarios or situations for which candidates also describe the chosen crop/species characteristics.

Higher National Unit specification: statement of standards (cont)

Unit title: Grass and Fodder Crop Production

Outcome 2

Describe the establishment, production and utilisation of grass

Knowledge and/or Skills

- Grass seed mixtures
- Establishment procedures
- Factors affecting yield, persistence and quality of grass
- Production procedures for grazed grass
- Production procedures for conserving grass
- Utilisation through grazing
- Nitrate Vulnerable Zones (NVZ)

Evidence Requirements

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

- select suitable grass seed mixtures for a given situation to include six from eight of the following scenarios: short term ley, long term pasture, cutting, grazing, quality silage with compact heading, spread of heading for flexible cutting date, extensive low input and extensive high input. The standard for pass would be all six correct.
- describe establishment, factors affecting yield, quality and persistence, production and utilisation of grazed grass.
- describe the procedures for the production of grass, including fertiliser amounts and timing, slurry application and nutrient content, grazing and silage allocation, silage cutting dates, stocking rates for grazing together with detailed field by field utilisation over the season.

Assessment Guidelines

The knowledge for seed mixtures could be assessed as an open-book test whereby literature from commercial companies is made available for consultation by the candidate in order to choose an appropriate mixture for a given situation. Alternatively a closed-book test could be given whereby the seed mixtures are detailed and matched to given scenarios. In either type of assessment a minimum of six scenarios should be given for which an appropriate mixture is selected.

A case study approach may be taken for establishment, factors affecting yield, quality and persistence, production and utilisation of grazed grass and the procedures for the production of grass for grazing and silage specifically for one class of livestock (eg dairy, beef or sheep).

Higher National Unit specification: statement of standards (cont)

Unit title: Grass and Fodder Crop Production

Outcome 3

Describe the establishment, production and utilisation of a fodder crop

Knowledge and/or Skills

- Crop selection for intended use or potential for use
- Establishment procedures
- Fertiliser requirements
- Weed, pest and disease prevention and control
- Utilisation timing and method

Evidence Requirements

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

- select an appropriate fodder crop for a given scenario and justify their choice
- describe in detail the requirements to produce the chosen crop referring to:
  - Establishment (cultivations, seed rates, sowing dates, fertiliser, pest and weed control)
  - Production (N, P, K and trace element requirements, weed and pest prevention and control
  - Utilisation (harvesting method, timing, storage conditions, feeding guidelines)

Different scenarios are required on each occasion the Outcome is assessed.

Assessment Guidelines

This Outcome may be incorporated within the case study for Outcome 2 as a single instrument of assessment or it may be assessed separately as an assignment/report. Either approach should incorporate all items listed in the Knowledge and/or Skills section.

Administrative Information

Unit code: F1Y9 34

Unit title: Grass and Fodder Crop Production

Superclass category: SD

Original date of publication: August 2008

Version: 01

History of Changes:

Version	Description of change	Date

Source: SQA

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: Grass and Fodder Crop Production

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 should give candidates the knowledge and skills to be able to understand issues relating to the production of a grass and fodder crops.

Grass — Identification skills within Outcome 1 could allow candidates to recognise the grass species by using an identification key and knowing botanical features. Knowledge of the characteristics of grass species would allow for more precise management decisions at a practical level.

Species that may be included could be Perennial Ryegrass, Italian ryegrass, Westerwolds, Hybrid Ryegrass, Timothy, Cocksfoot, Meadow Fescue, Red Fescue, Bent, Couch, Yorkshire Fog, Annual Meadow grass, smoothstalked meadow grass, rough stalked meadow grass and creeping soft grass. If possible live plant specimens could be used for identification, however if circumstances do not allow dried and photographic material can be used. Vegetative and reproductive growth stages could be covered with assessing of either stage.

An understanding of grass species characteristics may allow for the selection of an appropriate seed mixture for a given situation or sward purpose.

Within Outcome 2 methods of establishment could be discussed with the pros and cons for direct drilling, direct seeding and undersowing considered. Production procedures could also include fertiliser amounts and timing, slurry application and nutrient content, potential weed, pest and diseases with prevention and control. Factors, which affect yield, quality and persistence, would include site class for grass growth, species, Nitrogen, silage cutting dates and interval between cuts, grazing pressure and rotation lengths. Guidance could be given as to stocking rates and Nitrogen use in relation to site class for grass growth. Candidates should be made aware of the regulations for nutrient management in Nitrate Vulnerable Zones.

Utilisation through grazing could include a range of grazing systems with their operational requirements (set stocking, continuous stocking, 1.2.3 grazing, rotational grazing, strip grazing and zero grazing). Candidates may also have a knowledge of the principles and practical procedures involved with making silage together with the effect of management on silage quality and quantity (species, nitrogen, cutting date, interval between cuts, additives, clamp operations).

Fodder Crops — Outcome 1 may allow candidates to identify some fodder crops grown in UK. These could include maize, fodder beet, kale, swede, turnips, forage rape, stubble turnips, peas, arable silage, wholecrop cereals, red clover and white clover. Live plant samples could be used when timing allows otherwise photographic material can be used.

Candidates may also know the general characteristics of each crop (winter hardiness, dm yield, nutrient content, sowing window and harvesting methods and timing) and may be able to choose appropriate crop given a specific scenario and give a description for that chosen crop.

Higher National Unit specification: support notes (cont)

Unit title: Grass and Fodder Crop Production

Outcome 3 may allow candidates to gain knowledge in the production of a fodder crop. This could be similar to the case study for Outcome 2 following similar knowledge areas: cultivations for seed bed preparation, fertilisers, slurry, weed, disease and pest prevention and control during establishment and through production, harvesting method and utilisation period.

The case study for Outcome 2 could encompass the evidence required for Outcome 3 or assessed separately.

Guidance on the delivery and assessment of this Unit

Delivery should be a mixture of practical and formal lectures. There is good opportunity to allow candidates to research literature to gain technical information. At least one visit to a livestock farm with a good grassland based system is recommended to allow candidates to relate the theory into practice. This visit could also be used as the case study assessment for Outcome 2 and 3.

Opportunities for developing Core Skills

There is opportunity to develop the Core Skills of *Numeracy* through calculations relating to fertiliser applications and slurry nutrient content and rates. Stocking rates and allocation of area for grazing would also require *Numeracy* skills. The use of a case study in which candidates are given the resources and asked to provide a production and management plan for the grass and livestock could develop the Core Skill of *Problem Solving*. The Core Skill of *Communication* could be developed if candidates submit a written response to Outcome 2 and 3 when they are asked to describe the production procedures and explain their affect on quality, yield and persistence of grass. These would be at SCQF level 6.

Open learning

The Unit could be delivered by blended learning with Outcome 1 being delivered at the centre due to the need for assessment under supervised conditions. Outcome 2 and 3 could be delivered via distance learning.

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: Grass and Fodder Crop Production

This Unit is designed to enable you to gain knowledge and develop recognition skills on grass and fodder crops. You may be able to identify grasses present in a field, distinguishing between weed grasses from those sown and have knowledge of their characteristics. Fodder crop identification and their potential for use will also be covered.

The knowledge you gain, applied in a practical situation may allow you to produce grass and fodder crops for both grazing and conserving and allow an understanding of how this should be utilised by livestock.

The knowledge and skills you gain from this Unit may be suitable to apply to a lowland farming system. It will also allow you to progress to a Unit in more advanced grassland management.

Assessments may be a mixture of practical identification, closed-book restricted response tests and a case study. The assessments used could all be relevant examples relating to vocational practical experiences.