



## National Unit Specification: general information

**UNIT** Crop Production (SCQF level 5)

**CODE** F6AK 11

### SUMMARY

This Unit allows candidates to develop some of the basic knowledge and skills in relation to field crop production in the UK. The Unit will cover the basic production practices for one selected crop and the use of machinery in crop production. The Unit will also enable candidates to develop basic crop husbandry skills.

The Unit is suitable for candidates with no previous knowledge of agriculture, but who want to develop or further develop their knowledge of crop production systems and practices.

### OUTCOMES

- 1 Demonstrate knowledge of major crop production systems in the UK.
- 2 Describe basic production practices for a farm crop from planting to harvesting.
- 3 Identify machines for crop production and describe their uses.
- 4 Carry out practical crop husbandry skills.

### RECOMMENDED ENTRY

While entry is at the discretion of the centre, it would be beneficial if candidates had previous experience of working with crops or growing plants and some knowledge of crop production systems.

### CREDIT VALUE

1 credit at SCQF level 5 (6 SCQF points at SCQF level 5\*).

*\*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.*

---

### Administrative Information

**Superclass:** SD

**Publication date:** May 2009

**Source:** Scottish Qualifications Authority

**Version:** 01

© Scottish Qualifications Authority 2009

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.

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

## **National Unit Specification: general information (cont)**

**UNIT**      Crop Production (SCQF level 5)

### **CORE SKILLS**

There is no automatic certification of Core Skills in this Unit. The Unit provides opportunities for candidates to develop aspects of the following Core Skills:

- ◆ *Communication* (SCQF level 4).
- ◆ *Working with Others* (SCQF level 4).
- ◆ *Problem Solving* (SCQF level 4).

These opportunities are highlighted in the Support Notes of this Unit Specification.

## **National Unit Specification: statement of standards**

### **UNIT      Crop Production (SCQF level 5)**

Acceptable performance in this Unit will be the satisfactory achievement of the standards set out in this part of the Unit Specification. All sections of the statement of standards are mandatory and cannot be altered without reference to SQA.

#### **OUTCOME 1**

Demonstrate knowledge of major crop production systems in the UK.

##### **Performance Criteria**

- (a) Describe the range of field crops grown with reference to regional distribution.
- (b) Identify correctly the uses of the main crop products.

#### **OUTCOME 2**

Describe basic production practices for a farm crop from planting to harvesting.

##### **Performance Criteria**

- (a) Describe appropriate practices to maintain good soil conditions.
- (b) Describe appropriate methods of establishing the crop.
- (c) Describe practices to maintain crop health and yield.
- (d) Describe an appropriate crop harvesting method.

#### **OUTCOME 3**

Identify machines for crop production and describe their uses.

##### **Performance Criteria**

- (a) Identify cultivation and planting machines and describe their main uses.
- (b) Identify machines for fertiliser and spray application.
- (c) Identify machines for crop harvesting and describe their main uses.

#### **OUTCOME 4**

Carry out practical crop husbandry skills.

##### **Performance Criteria**

- (a) Visually assess soil moisture conditions in preparation for cultivation.
- (b) Identify correctly the growth stage of a crop in preparation for the application of crop inputs.
- (c) Identify correctly a common disease, pest and weed in a given crop.
- (d) Test the readiness of a crop for harvesting and describe the main quality characteristics of the product.
- (e) Demonstrate safe working practices at all times.

## **National Unit Specification: statement of standards (cont)**

### **UNIT**      Crop Production (SCQF level 5)

#### **EVIDENCE REQUIREMENTS FOR THE UNIT**

Evidence is required to demonstrate that candidates have achieved all Outcomes and Performance Criteria.

Written and/or oral evidence is required which demonstrates that the candidate has achieved Outcomes 1, 2 and 3 to the standard specified in the Outcomes and Performance Criteria. Evidence should be produced under supervised closed-book conditions at appropriate points during the Unit. Evidence must be gathered in an appropriate context where crops are being grown in working environments or simulated working environments.

For Outcome 1, the candidate should briefly describe three of the main field crops grown in the UK from; cereals, oilseeds, grass and fodder crops, potatoes, roots, vegetables and fruit. Uses should include human food, livestock feedstuff, raw material for processing into alcoholic beverages and raw material for industrial use.

Outcome 2 should be based on regular monitoring of one selected crop from planting till harvesting, Reference should be made to drainage, liming, cultivation and fertiliser application. Candidates will briefly describe soil cultivation in relation to soil conditions. Candidates should select one appropriate method of, weed, pest and disease control and should select one appropriate method of harvesting the crop.

Outcome 3 should cover a range of crops and candidates should identify two types of cultivators, two types of planting/sowing machines and 2 crop harvesting machines.

Performance evidence, supplemented by an assessor observation checklist, is required for Outcome 4 to demonstrate that the candidate has carried out a visual inspection of soil conditions, identified the main growth stages of the given crop, and carried out one test on the given crop to identify its readiness for harvesting and described the main quality characteristics of the product. These skills should be demonstrated on the same crop as is used for Outcome 2 and candidates must demonstrate safe working practices at all times.

## National Unit Specification: support notes

### UNIT Crop Production (SCQF level 5)

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 is an optional Unit in the National Progression Award Rural Skills at SCQF level 5, but can also be taken as a free-standing Unit. This Unit should be delivered within a practical farming context as far as possible and maximum use should be made of visits to one or more crops of local importance to the centre. Both the teaching and assessment of Outcomes 2 and 4 should be based on one type of crop — which could be a cereal, a fodder crop, an oilseed, potatoes or other field scale crop. Grass is an acceptable crop in upland or wet areas with no arable crops.

It is important that the practical aspects of the learning takes place involving crop production in either a work setting or simulated work setting. Partnerships with Land-based colleges, training providers or employers are likely to provide the most appropriate settings.

**It is important that the deployment of appropriate learning environments is preceded by a valid risk assessment, particularly identifying any protective personal equipment which the candidate may require.**

A range of topics and themes for each Outcome is shown below:

#### Outcome 1

Range of crops: cereals (barley, wheat, oats), oilseeds, fodder crops (grass, swedes, kale), potatoes, vegetables (carrots, brassicas, peas) and fruit (strawberries, raspberries etc). Reference should be made to the regional distribution and the underlying reasons. Uses of crops: human consumption (direct), human consumption (after processing), animal feedstuff, raw material for alcoholic drinks, seed, use for bio-energy production, industrial uses.

#### Outcome 2

Measures to enhance soil fertility: drainage, cultivation, liming, manure and fertiliser application. Cultivation practices vary according to the crop, but could include ploughing, minimum tillage, power harrowing, ridging, creating beds, destoning, drilling. Use of fertilisers and foliar sprays to optimise nutrient supply. Use of crop protection chemicals, crop rotation, mechanical weed control, variety choice, biological pest control in crop protection. Harvesting practices vary according to crop, eg combine harvesting of cereals; silage and hay making methods; mechanical potato harvesting; pea vining, etc.

## **National Unit Specification: support notes (cont)**

### **UNIT      Crop Production (SCQF level 5)**

#### **Outcome 3**

Cultivation and planting machines: ploughs, tined cultivators, power cultivators, destoners, grain drills, potato planters, swede seeders.

Fertiliser spreaders: rotating disc, pneumatic, placement by planting machines.

Sprayers: self propelled, trailed, mounted.

Harvesters: combine harvesters (grain), balers, potato harvesters, root harvesters, grass mowers, forage harvesters, tedders.

#### **Outcome 4**

Soil examinations should be carried out over a wide range of soil moisture conditions. Differences between sandy soils and clay soils should be illustrated in the teaching of the Unit.

Growth stages will vary markedly for different crops, eg: for cereals — pre-tillering, tillering, stem extension, heading and ripening.

Diseases, pests and weeds will vary markedly according to the crop selected. For cereals, mildew, slugs and wild oats would be suitable examples whilst blight, aphids and couch grass would be suitable for a potato crop.

Assessment of the readiness of a crop for harvesting varies with the crop type. For a cereal, it involves monitoring the fall in grain moisture content; for grass being silaged, crop development in terms of ear emergence could be followed; for potatoes, the size distribution of tubers would be monitored. Likewise, crop quality is assessed in different ways for different crops, eg: moisture, plumpness, colour and specific weight for cereal grains; moisture, leafiness, chop length for grass silage. Where possible, actual measurements should be carried out, eg: moisture content, specific weight for cereal grains.

In all Outcomes, reference should be made to Health and Safety issues and relevant legislation.

### **GUIDANCE ON LEARNING AND TEACHING APPROACHES FOR THIS UNIT**

Maximum use should be made of planned visits to one or more types of crop over as much of the growth cycle as is possible. Teaching should focus on the crop used for assessment, but inspections of other types of crop could be used to illustrate other production techniques. Centres should be encouraged to adopt a candidate centred approach to the learning and teaching and this should include group discussion and team working activities. Risk assessments should be carried out for visits and practical classes. Autumn-sown, spring sown and perennial crops (eg: grass) are suitable as the selected crop type for both teaching and assessment. The range of crops available to a particular centre will vary widely, but every centre should have access to at least one suitable crop.

## National Unit Specification: support notes (cont)

### UNIT Crop Production (SCQF level 5)

Outcome 2 and parts of Outcome 4 could be covered by monitoring, through a series of planned visits over as much of the growing season as is possible, a suitable crop within easy access of the centre. This will enable candidates to inspect and discuss the various stages of crop growth and the production techniques required at each stage, eg: cultivations, planting, weed control, disease control, fertiliser application and harvesting. Such visits could be supplemented by classroom sessions based on collected crop, weed and pest samples and on other visual materials. Candidates should be encouraged to record their findings in a log book which they can maintain and refer to throughout the Unit. Outcome 3 could also be partially covered by these farm visits at various times to demonstrate the use of the different machines. Such visits could be supplemented by a visit to a machinery dealership or an agricultural show to include a wider range of machines.

#### OPPORTUNITIES FOR CORE SKILLS DEVELOPMENT

This Unit presents opportunities to develop *Communication* skills, *Problem-Solving* skills and *Working with Others*. Oral Communication skills can be developed through interactive discussions based on examination of the crop and planning future operations. Many aspects of growing crops involve *Problem Solving* skills, in which information is gathered, organised and used to make decisions. There are opportunities for a team-work approach to some of the activities covered in this Unit.

#### GUIDANCE ON APPROACHES TO ASSESSMENT FOR THIS UNIT

For Outcomes 1, 2 and 3, a holistic approach to assessment should be adopted. There are opportunities to integrate assessments, but these will vary according to local conditions, particularly the type and availability of crops. A suitable instrument of assessment would be a case study with associated restricted response questions.

For Outcome 4, a suitable instrument of assessment would be a number of practical assignments with candidate performance recorded on a checklist.

#### Opportunities for the use of e-assessment

E-assessment may be appropriate for some assessments in this Unit. By e-assessment we mean assessment which is supported by Information and Communication Technology (ICT), such as e-testing or the use of e-portfolios or e-checklists. Centres which wish to use e-assessment must ensure that the national standard is applied to all candidate evidence and that conditions of assessment as specified in the Evidence Requirements are met, regardless of the mode of gathering evidence. Further advice is available in *SQA Guidelines on Online Assessment for Further Education (AA1641, March 2003)*, *SQA Guidelines on e-assessment for Schools (BD2625, June 2005)*.

#### DISABLED CANDIDATES AND/OR THOSE WITH ADDITIONAL SUPPORT NEEDS

The additional support needs of individual candidates should be taken into account when planning learning experiences, selecting assessment instruments, or considering whether any reasonable adjustments may be required. Further advice can be found on our website [www.sqa.org.uk/assessmentarrangements](http://www.sqa.org.uk/assessmentarrangements)