



## Higher National Unit Specification

### General information for centres

**Unit title:** Agricultural Produce: Quality and Processing

**Unit code:** F2E4 35

**Unit purpose:** This Unit will allow candidates to develop a knowledge and understanding of the principles of the quality and processing standards required by food processors and consumers in the UK. The Unit may be suitable for candidates who are studying for a Group Award in an area related to agriculture, food or the rural economy.

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

- 1 Describe the quality characteristics of agricultural products.
- 2 Evaluate how the quality characteristics of agricultural products and consumer acceptability are affected by the production system.
- 3 Evaluate techniques for processing and adding value to agricultural produce.

**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:** Though there are no formal prior knowledge requirements for this Unit, it would be an advantage for candidates to have passed the HN Units: F2ED 34 *Livestock Production Systems* and F1Y4 34 *Arable Crop Production*.

**Core Skills:** There are opportunities to develop the Core Skill of *Communication* at SCQF level 6 in this Unit, 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:** Outcome 1 could be assessed by a restricted response assessment. Outcomes 2 and 3 may be assessed together by an assignment covering both livestock and at least one crop product, or could be assessed separately.

## **Higher National Unit specification: statement of standards**

**Unit title:** Agricultural Produce: Quality and Processing

**Unit code:** F2E4 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**

Describe the quality characteristics of agricultural products

#### **Knowledge and/or Skills**

- ◆ Measures of quality for specified products
- ◆ Components of quality
- ◆ Standards of quality for specified products

#### **Evidence Requirements**

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

- ◆ describe measures of quality for specified agricultural products. Responses must cover measures for at least one livestock product and one crop product.
- ◆ describe the components of quality characteristics for agricultural products. Responses must cover chemical composition, chemical and microbiological contamination, and sensory characteristics.
- ◆ describe standards of quality for specified agricultural products. Responses must include a minimum of three different types of standard applied to agricultural produce.

#### **Assessment Guidelines**

This Outcome could be assessed by restricted response questions, taken under supervised conditions.

## **Higher National Unit specification: statement of standards (cont)**

**Unit title:** Agricultural Produce: Quality and Processing

### **Outcome 2**

Evaluate how the quality characteristics of agricultural products and consumer acceptability are affected by the production system

#### **Knowledge and/or Skills**

- ◆ Agronomic factors that influence crop quality
- ◆ Husbandry factors that influence livestock product quality
- ◆ Animal welfare standards
- ◆ Quality assurance schemes
- ◆ Consumer preference

#### **Evidence Requirements**

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

- ◆ explain the effects of modifying animal and crop growth and development by genetic, nutritional, hormonal and other means, on product quality
- ◆ evaluate how the production system influences product quality and acceptability in relation to animal welfare standards, environmental and ethical standards and quality assurance requirements.
- ◆ evaluate the role of consumer preference, in selecting the production system

#### **Assessment Guidelines**

Outcomes 2 and 3 could be jointly assessed by an assignment which covers livestock and at least one crop product.

## **Higher National Unit specification: statement of standards (cont)**

**Unit title:** Agricultural Produce: Quality and Processing

### **Outcome 3**

Evaluate techniques for processing and adding value to agricultural produce

#### **Knowledge and/or Skills**

- ◆ Post slaughter changes to meat quality
- ◆ Meat, milk and egg processing techniques
- ◆ Post harvest changes to crop quality
- ◆ Harvested crop handling and processing techniques
- ◆ Methods of enhancing livestock and crop products during processing

#### **Evidence Requirements**

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

- ◆ describe meat handling and processing methods from slaughter onwards used to produce safe, high quality products
- ◆ describe milk and egg handling and processing methods used to produce safe, high quality products
- ◆ evaluate the processing of harvested crops into safe products with appropriate shelf-life and quality standards
- ◆ evaluate methods of enhancing livestock and crop products during processing, including preservation, modification and adding value

#### **Assessment Guidelines**

Outcomes 2 and 3 could be jointly assessed by an assignment which covers livestock and at least one crop product.

## Administrative Information

**Unit code:** F2E4 35

**Unit title:** Agricultural Produce: Quality and Processing

**Superclass category:** WM

**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:** Agricultural Produce: Quality and Processing

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 link crop and livestock production with food by examining and evaluating the quality standards demanded by the consumer and tracing the key aspects of meeting these requirements back through the food chain, from retailer via processor to the primary producer who supplies the raw materials. It also examines how agricultural produce can be processed and manufactured to provide the wide range of quality added-value food products which the consumer wants and explains how primary producers might become involved in the processing of their products.

Outcome 1 is designed to give candidates a sound overall knowledge of the quality characteristics of livestock and crop products and production systems, which are demanded by both food processors and consumers. In this Outcome, the specified products used when discussing measures of quality could include milk, meat, eggs, cereals, potatoes, oilseeds, fruit and vegetables.

Outcome 2 develops candidates' knowledge of the quality characteristics of livestock and crop products, and how they can be modified by the choice of production methods and systems. It also looks at the consumer role in selection of production systems. Agronomic factors that influence crop quality could include variety, plant population density, fertiliser applications, crop protection programmes, harvesting methods and timing. Husbandry factors influencing livestock product quality could include castration, choice of breed, nutrition and feed additives.

Outcome 3 provides candidates with a sound knowledge of the techniques used for processing livestock produce and harvested crops into safe products with appropriate shelf-life and to high quality standards.

### **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 to processors. Practical examples illustrating some of the main points of the Unit could include a look at the manufacture of simple processed foods such as cheese or sausages. Potential visits which will enhance candidates' understanding of the topics covered could be to processors such as a flour mill, maltings, meat plant or cheese maker.

#### ***Opportunities for developing Core Skills***

There are opportunities to develop the Core Skill of *Communication* at SCQF level 6 throughout this Unit. Communication comprises the components Written Communication and Oral Communication. For the written component, the general skills are 'produce well-structured written communication on complex topics' for its writing element and 'read and understand and complex written communication' for its reading element.

## Higher National Unit specification: support notes

### Unit title: Agricultural Produce: Quality and Processing

In this Unit, candidates must take account of and evaluate a range of information concerning the quality and processing of agricultural produce. They are asked to respond to complex issues, such as when asked to explain the effects of modifying animal and crop growth, and to evaluate how the production system influences product quality and acceptability in Outcome 2.

In addition, opportunities also exist to develop the component Oral Communication of the *Communication* Core Skill. Class discussion and oral questioning may be used to confirm candidates' understanding of the Outcomes with questions and responses noted by the lecturer.

The development of *Communication* may also be facilitated by use of an essay, presentation or report as the assessment instrument for Outcomes 2 and 3. Based on livestock and at least one crop product, the assessment may require, as well as production of complex communication, preparation by candidates such as internet or other research, which can foster and develop communication skills.

### Open learning

The Unit could be delivered by blended learning with Outcome 1, 2 and 3 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](http://www.sqa.org.uk)).

## General information for candidates

### Unit title: Agricultural Produce: Quality and Processing

In this Unit you will learn about the relationships between primary production of agricultural produce on the farm and the processing, manufacturing and retailing chain beyond the farm gate. You will develop a knowledge and understanding of the principles of the quality and processing standards required by food processors and consumers in the UK.

On completion of the Unit you will be able to:

- 1 Describe the quality characteristics of agricultural products.
- 2 Evaluate how the quality characteristics of agricultural products and consumer acceptability are affected by production system.
- 3 Evaluate techniques for processing and adding value to agricultural produce.

In Outcome 1 you will examine the quality characteristics of livestock and crop products and their production systems as demanded by consumers and food processors. You will learn about the different components of quality characteristics, and the standards of quality desired.

In Outcome 2 you will explore how the quality characteristics of livestock and crop products can be modified by the choice of production method and system. You will learn how modifying animal and crop growth and development by use of genetic, nutritional, hormonal and other means, can affect product quality. You will also learn about how the production system may influence product quality and the consumer role in selecting the system.

In Outcome 3 techniques for processing livestock produce and harvested crops into safe products with appropriate shelf-life and quality standards will be studied. You will learn about meat handling and processing methods from slaughter onwards, milk and egg handling and processing methods used to produce safe, high quality products and the processing of harvested crops. You will explore methods of enhancing livestock and crops during processing to generate better produce.

Your learning in the Unit may take the form of a mixture of lectures, tutorials, practical examples and visits to processors such as a flour mill or meat plant.

During the course of the Unit, you may be given the opportunity to develop the Core Skill of *Communication* through looking at and responding to the various issues in agricultural produce quality and processing.