



National Unit specification: general information

Unit title: Dairy Production (SCQF level 6)

Unit code: H2MY 12

Superclass: SH

Publication date: February 2013

Source: Scottish Qualifications Authority

Version: 02

Summary

This Unit enables learners to acquire skills and knowledge needed to be employed on a dairy unit. Learners will develop knowledge of good husbandry practice related to dairy cattle and heifer rearing, maintain and monitor the performance, progress, health and efficiency of a dairy herd, and carry out a range of dairy tasks as appropriate.

This is an optional Unit within the National Certificate (NC) in Agriculture (SCQF level 6) but is also available as a free-standing Unit.

Successful completion of this Unit may facilitate progression to further study of livestock such as the Unit *Calf Rearing Systems*, or to related employment.

Outcomes

- 1 Describe the husbandry of dairy cattle in a range of systems.
- 2 Maintain healthy and productive stock.
- 3 Carry out a range of dairy tasks in accordance with good farm practice.
- 4 Monitor the production and progress of dairy stock.

Recommended entry

While entry is at the discretion of the centre, it would be beneficial for learners to have some prior knowledge of livestock.

General information (cont)

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Credit points and level

1 National Unit credit at SCQF level 6: (6 SCQF credit points at SCQF level 6*)

**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.*

Core Skills

Achievement of this Unit gives automatic certification of the following Core Skills component:

Complete Core Skill None

Core Skill component Critical Thinking at SCQF level 5

There are also opportunities to develop aspects of Core Skills which are highlighted in the Support Notes of this Unit specification.

National Unit specification: statement of standards

Unit title: Dairy Production (SCQF level 6)

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

Describe the husbandry of dairy cattle in a range of systems.

Performance Criteria

- (a) Describe the husbandry of dairy heifer rearing in a range of systems.
- (b) Describe dairy cattle breeding in a range of systems.
- (c) Describe appropriate dairy cattle feeding in a range of systems.
- (d) Describe dairy cattle accommodation in a range of systems.

Outcome 2

Maintain healthy and productive stock.

Performance Criteria

- (a) Identify the causes, symptoms, and treatment of ill health in dairy cattle.
- (b) Identify methods of control and prevention of ill health in dairy cattle.
- (c) Condition score dairy cows.

Outcome 3

Carry out a range of dairy tasks in accordance with good farm practice.

Performance Criteria

- (a) Carry out milking of cows.
- (b) Carry out pre and post milking tasks.
- (c) Carry out routine tasks in relation to the calf and the cow.

Outcome 4

Monitor the production and progress of dairy stock.

Performance Criteria

- (a) Calculate efficiency factors for a dairy herd.
- (b) Compare herd performance with national standards and targets.

National Unit specification: statement of standards (cont)

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Evidence Requirements for this Unit

Written and/or oral and performance evidence is required to demonstrate that the learners have achieved all of the Outcomes and Performance Criteria. Evidence will be obtained under supervised conditions at appropriate points throughout the Unit and can be generated holistically or Outcome by Outcome.

For Outcome 1, learners must provide evidence of the following under closed-book conditions:

- ◆ Description of at least three selection criteria for dairy heifer and cow breeding from: temperament, udder and teats, feet and legs, conformation, production capability
- ◆ Identification of age and target weight of females for breeding, and target age at first calving
- ◆ Identification of a minimum of five signs of oestrus in cows. This must include reference to standing to be mounted
- ◆ Selection of appropriate feeds and quantities for heifers and dairy cows in a given system
- ◆ Description of the feeding regime which includes frequency and equipment involved in a given circumstance
- ◆ Description of suitable accommodation in relation to a given system

For Outcome 2, learners must provide evidence of the following under closed-book conditions:

- ◆ Identification of the cause, symptoms, treatment and prevention of four diseases. This must include mastitis, lameness, infertility and one metabolic disorder
- ◆ Condition scoring of at least five dairy cows to the nearest half point

For Outcome 3, learners must provide performance evidence of the following under supervised conditions:

- ◆ At least one milking in accordance with current industry practice
- ◆ Pre and post tasks for at least one milking to hygiene standards in accordance with current industry practice
- ◆ Routine tasks must include at least two relating to the cow and two relating to the calf

For Outcome 4, learners must provide evidence of the following in open-book conditions:

- ◆ Calculation of four efficiency factors with comparison to national standards and targets

National Unit specification: support notes

Unit title: Dairy Production (SCQF level 6)

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 is an optional Unit within the National Certificate in Agriculture (SCQF level 6) but is also available as a free-standing Unit.

Learners would benefit from having some prior knowledge of livestock. Where this Unit is delivered as part of the NC, it would be beneficial if learners had previously completed the Unit *Livestock Husbandry, Health and Welfare*.

In this Unit learners develop skills and knowledge in the husbandry of dairy heifer rearing and dairy cows in a range of systems. They will learn how to maintain healthy and productive stock, and monitor the production and progress of dairy stock. They will also carry out a range of dairy tasks in accordance with good farm practice. **NB:** this is not a specialist milking Unit.

The Unit may prepare learners for progression to Higher National Units in agriculture, other related land-based qualifications or to related employment.

Outcome 1 provides learners with underpinning knowledge of the husbandry of dairy heifer rearing and dairy cows in a range of systems. Learners will be required to describe the husbandry of dairy heifer rearing in a range of systems in terms of target weight and age, age at first calving, selection for breeding including factors such as mobility, teat position, appearance and conformation. They should also be able to describe dairy cattle breeding in a range of systems. This may include breed or cross of cow, oestrus detection, service, pregnancy and parturition management, lactation management, and care of the dry cow.

The description of dairy cattle feeding in a range of systems could include discussion about quantity and quality of feeds, feeding routine (frequency of feeding, complete diet feeding, grazing), feeding area and feeding equipment (diet feeders, and out of parlour feeders).

Learners should also be able to describe dairy cattle housing in a range of systems, including types of housing (cubicles/straw yard), handling facilities, and waste handling, storage and disposal.

Outcome 2 provides learners with underpinning knowledge of the maintenance of healthy and productive stock. Learners should be able to state the cause, symptoms, treatment and prevention of ill health in dairy cattle in terms of the following diseases and disorders: mastitis, lameness, infertility, metabolic disorders such as milk fever and staggers, and internal and external parasites. The normal appearance and behaviour of stock may also be discussed.

National Unit specification: support notes (cont)

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Learners should be able to condition score dairy cows to the nearest half point. Discussion surrounding the reasons for condition scoring may be beneficial in relation to targets.

Outcome 3 provides learners with the opportunity to develop practical skills by carrying out a range of dairy tasks. Tasks will include completion of at least one milking, and other tasks could include ensuring pre and post milking cleanliness in the parlour, carrying out oestrus checks, care of calving cows, cleaning and bedding of cubicles, calf husbandry tasks such as feeding calves, injecting or dosing, disbudding, tagging, weighing, etc.

Outcome 4 provides learners with underpinning knowledge to enable them to monitor the production and progress of dairy stock. Learners should calculate efficiency factors for a dairy herd. This could include cow performance (eg milk yields, fertility target- calving interval, days to first service, inter service interval, pregnancy rate to first service, somatic cell count, and bactoscan).

Learners should compare herd performance with national standards and targets.

This Unit is broadly aligned to the following National Occupational Standards (NOS) for Livestock Production, from Lantra:

- LP1 Assist with preparing and maintaining livestock accommodation
- LP4 Establish and maintain conditions appropriate to the welfare of livestock
- LP5 Assist with maintaining the health and well-being of livestock
- LP7 Provide feed and water to livestock
- LP13 Prepare for, carry out and complete the milking of livestock

Guidance on learning and teaching approaches for this Unit

The Unit should be delivered in as practical a context as possible with delivery taking place in the dairy unit and in a classroom setting. The emphasis should always be on the practical application of knowledge and understanding and in this way there is considerable scope for integration of delivery across the Outcomes and Performance Criteria. There is also scope for integration with other Units, particularly *Calf Rearing*.

Tutors must ensure that ensure that learners adhere to appropriate health and safety guidelines in all practical activities.

Learners would benefit from a balanced approach to learning by undertaking site visits to dairy Units, and participating in classroom activities to develop dairy production knowledge and understanding. Working in pairs, practical handling can be undertaken including milking and oestrus detection, and group work can be carried out in the classroom situation to cover the theory underpinning the subject area.

By adopting the above learning and teaching approaches and/or through the Outcomes and corresponding Evidence Requirements, the Unit should provide learners with an opportunity to develop the following essential skills for life, learning and work:

National Unit specification: support notes (cont)

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- ◆ Employability — through developing practical skills in line with good farm practice and working on time limited tasks
- ◆ Sustainability — through considering the use of resources and recycling
- ◆ Technical skills — through handling dairy cattle
- ◆ Organisational skills — in terms of personal management through punctuality, record keeping, etc
- ◆ Interpersonal skills — through contact with farm staff and in class groups

Opportunities for developing Core Skills

In this Unit learners will develop knowledge and skills in how to successfully produce milk from a dairy system, through knowledge of the husbandry, breeding, feeding, health and general care of the dairy herd. Learners will:

- ◆ Describe the husbandry of dairy heifer rearing and dairy cows
- ◆ Suggest appropriate disease control, prevention and treatment methods
- ◆ Select feed types and quantities
- ◆ Monitor the production and progress of dairy stock
- ◆ Carry out a range of dairy tasks in accordance with good farm practice
- ◆ Make calculations and comparisons

This means that as they are doing this Unit, learners may develop aspects of the Core Skills of *Communication, Numeracy and Problem Solving*.

In addition, aspects of the following Core Skills could be developed where particular learning and teaching approaches are adopted:

- ◆ *Working with Others* — through working in pairs, eg when carrying out stock tasks
- ◆ *ICT*, eg through recording data electronically

This Unit has the Critical Thinking component of Problem Solving embedded in it. This means that when candidates achieve the Unit, their Core Skills profile will also be updated to show they have achieved Critical Thinking at SCQF level 5.

National Unit specification: support notes (cont)

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Guidance on approaches to assessment for this Unit

The following approaches to assessment are suggested:

- Outcome 1: This could be assessed by short answer or restricted response questions, and/or an assignment.
- Outcome 2: This could be assessed by short answer questions or restricted response questions, and/or an assignment.
- Outcome 3: This is assessed by a practical dairy task, and an assessor observation checklist could be used to record evidence.
- Outcome 4: A written assignment or recorded oral evidence could be used.

Both the practical and written/oral elements of the Unit lend themselves to holistic assessment approaches. Learners could maintain a folio of evidence to record their work throughout the Unit.

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 learner 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 learners and/or those with additional support needs

The additional support needs of individual learners 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

History of changes to Unit

Version	Description of change	Date
02	Core Skills Component Critical Thinking at SCQF level 5 embedded.	04/02/2013

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