

-SQA-SCOTTISH QUALIFICATIONS AUTHORITY

**Hanover House
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NATIONAL CERTIFICATE MODULE DESCRIPTOR

-Module Number- 0068168 -Session-1986-87
-Superclass- SD

-Title- GRASS CONSERVATION

-DESCRIPTION-

Type and Purpose A specialist module which enables the student to operate and maintain equipment used in the conservation of grass, with due regard to cropping and feeding factors.

Preferred Entry Level 08061 Tractor operation 2

Learning Outcomes The student should:

1. know the principles of grass conservation and storage;
2. identify optimum stage of growth for cutting hay and silage;
3. know the range of machinery available for use in grass conservation;
4. set, operate and maintain grass conservation machinery to obtain maximum efficiency.

Content/ Context Corresponding to the Learning Outcomes:

1. methods of conserving grass; hay and silage (pits, clamps, towers and plastic enclosures - including big bales). Cutting, conditioning and storage procedures, including associated techniques and possible losses.

Principles of hay and silage making.

Reasons for wilting - timing climatic effects.

Effect on the crop of mowers and conditioners, including losses incurred by incorrect operation.

Handling procedures required in the harvesting and transport of grass silage to store.

Ensiling procedures, covering:

Filling and compacting

Operational requirements of -

Additives (corrosion hazards, safety). Effluent.

Handling procedures required in the harvesting of hay (in field and store).

2. hay and silage feeding requirements, eg. "D" values and stage of growth.

Optimum stage of growth for cutting hay and silage and the effects of delay.

Local variation in cutting dates.

3. the following machines to be reviewed with reference to their working principles and effects on the crop:

- (a) Mowers, e.g. reciprocating, flail and drum/disc.

- (b) Conditioners, e.g. turners, tedders, crimpers and tined.

- (c) Forage harvesters, e.g. flail, double chop, precision chop and forage wagons.

- (d) Unloading and spreading, e.g. buckrakes, dump box, blowers and spreaders/unloaders.

- (e) Drying, e.g. moisture extraction unit.

4. setting one machine selected from each of the categories (a),(b) and (c) covered in Content/Context at (3) above. The machines and the system should be selected to cover the types likely to be found in the Students' work situation.

Routine maintenance of the machines.

Operation of the machines set above.

Field procedures.

Suggested
Learning and
Teaching
Approaches

Use should be made of visits to view different systems of storage. Identification of associated machinery and its operating principles would also be possible at the same time. Slides, O.H.P.s and classroom sessions could be used to supplement visits. Owing to the restricted time available for the harvesting of the crop, it is unlikely that the students will see much machinery in operation and the use of videos and slides would be necessary.

Assignments in the lab/field and demonstration plots will be necessary to develop the knowledge students will need to identify crop quality and stage of growth.

Many of the activities covered by the module will be undertaken in the practical situation, either in the workshop or the field. These should take the form of practical operation of the machines, with the completion of report forms where necessary during maintenance. The ultimate aim should be the operation of a complete system of grass conservation. As this is not always possible to achieve, the machines may have to be operated in a purely demonstration manner, with videos being used to illustrate procedures.

Because of the large practical element in the module a programme of formative assessment should be followed.

Assessment
Procedures

All Learning Outcomes must be validly assessed.

The student must be informed of the tasks which contribute to summative assessment. Any unsatisfactory aspects of performance should, if possible, be discussed with the student as and when they arise.

Acceptable performance in the module will be satisfactory achievement of the performance criteria specified for each Learning Outcome.

Where cutting scores are stated these are intended to be for guidance. The precise cutting score for a test will depend on the difficulty of the test and will have to be decided by the Tutor aided by Assessor.

The following abbreviations are used below:

LO Learning Outcome
IA Instrument of Assessment
PC Performance Criteria

- LO1
- IA Short answer written test consisting of ten questions.
- PC The student states the principles and techniques of grass conservation.
- Questions to include:
- (a) principles of hay and silage making;
 - (b) cutting and conditioning the grass crop;
 - (c) lifting and transporting the crop;
 - (d) procedures at the storage area;
 - (e) use of additives;
 - (f) safety aspects.
- Cutting score 70%.
- LO2
- IA A practical exercise.
- PC The student will satisfy the following requirements whilst examining a grass sward:
- (a) correctly identify stage of growth;
 - (b) state correctly whether grass is at optimum stage of growth for a specified method of conservation;
 - (c) indicate the effect of delaying cutting beyond the correct stage.
- LO3
- IA Short answer written test consisting of ten questions.
- PC The student states the principles and effects on the crop of a range of machinery available for grass conservation.
- Questions to include.
- (a) mowing machines;
 - (b) conditioning machines;
 - (c) forage harvesting machinery;
 - (d) barn drying equipment;
 - (e) silo machinery.
- Cutting score 70%.

- LO4
- IA Practical exercise used with observation checklist on a specified grass conservation machine.
- PC The student correctly:
- (a) states recognised field procedures for the machine being operated;
 - (b) sets the machine for a specified situation;
 - (c) operates the machine;
 - (d) undertakes the routine maintenance expected of an operator;
 - (e) follows safety requirements and regulations relating to the operation of the equipment.