UNIT - FORAGES

Lesson 8: Producing Forage Seed Crops

TEACHING PROCEDURES

A. Review

Review the previous lessons.

B. Motivation

Producing a seed crop is an excellent way to maximize the total forage crop. There is usually a shortage of forage seeds and a good seed crop could be an extra source of income, in addition to supplying you and your neighbors with adapted forage varieties.

C. Assignment

D. Supervised Study

E. Discussion

1. Discuss the management practice of clipping forage grass stubble. Emphasize the primary importance of this practice for producing high yields of seed.

Why and how should seed crop grass stubble be clipped?

1) Clip to a height of 3 to 4 inches as soon as possible after seed crop harvest.
2) Remove residue if possible.
3) Clipping promotes tillering.
   a) Tillers develop in the fall and early winter.
   b) Tillers are responsible for next years seed stalks and seed crop.
4) Failure to clip results in a 30 percent seed crop reduction.

2. Ask students to discuss nitrogen fertilization of seed crop forages. Emphasize the fundamental importance of this practice in seed crop production.

How should cool season grasses be fertilized for a seed crop?

1) Proper nitrogen fertilization determines the number of individual seeds in the seed head (seed "fill").

2) Follow rule of thumb for nitrogen application.
   a) If no nitrogen was fall applied, then topdress 70 to 100 pounds during the winter.
   b) If 80 to 100 pounds of nitrogen were fall applied, then apply 30 to 40 pounds during the winter.

3) Timing of application is important.
   a) Timing affects yields.
b) Late summer and early fall applications are not available when needed. (They are metabolized by fall growth or lost through leaching.)

c) Late winter applications cause lodging and excessive vegetative growth at the expense of seed growth.

Ask students how forage seeds are harvested. List important considerations on the board. Note the similarities to the harvesting of grain crops. (HO 6)

What are the considerations for harvesting and handling forage seed crops?

1) Avoid seed head "shatter" due to delays in harvesting.
2) Small acreages can be combined. (Start when 5 to 15 percent of the seeds are immature for maximum yields of vigorous seeds.)
3) Mow, windrow and cure large acreages.
   a) Mow when heads are yellowing.
      (1) Yellow heads are less mature.
      (2) A few heads in the field will shatter when tapped below the head at this stage.
   b) Cut high and windrow on top of stubble to promote good air circulation.
   c) Combine windrows when thoroughly dry.
4) Set combine according to manufacturer's specifications. (Consult seed dealers and buyers.)

4. Ask students to discuss the problem of seed heating. Compare this to heating of wet hay. Discuss how to handle the seed crop to prevent heating.

What is heating and how can it be prevented?

1) Heating results from storage of seed which has too much moisture and green material.
2) Clean seed immediately to remove green material.
3) Spread seed out or dry in bins.
4) If seed begins to heat, it should be turned or stirred. (Seed temperature should not exceed 110°F.)
5) Drying bins with circulated, heated air can be used. (Heat air to 90°F.)
6) Large quantities can be cured in curing yards.
   a) Yard can be a mowed grassy area.
   b) Windrow seed and turn frequently to prevent heating. (Turn with tractor mounted blade.)

5. Ask students about other forage crops which are grown in their county. List these on the board. Include grasses and legumes. Point out the specific cultural practices for any crop produced in your area.

What cool season grasses can be grown for a seed crop?
1) Missouri is number one in fescue seed production.
2) Seed production practices for other cool season grasses are similar to those for fescue.
   a) Bromegrass
   b) Timothy
   c) Orchardgrass
   d) Red top
   e) Reed canarygrass
3) Legume seed crops can also be produced.
   a) Alfalfa seed production
      (1) Requires a high degree of precision for management of the crop, water, pests, and pollinators
      (2) Best seed is produced in irrigated regions, but seed can also be produced in non-irrigated regions.
   b) Red clover seed production
      (1) Usually grown mainly for forage but can be also grown for seed in the humid Midwest
      (2) Seed production depends on pollination. (Bumblebees are most effective.)
      (3) Harvest the first hay crop early for good seed production.
      (4) Harvest seed with a combine when the heads have turned brown and the stems are yellow-brown.
      (5) Windrow curing is common.
      (6) May use a mower equipped with a swather such as those used for windrowing small grains

6. Have students compare how harvested seed is stored. List appropriate practices on the board.

How should harvested forage seeds be stored?

1) Cleaned seed may be treated with a fungicide or insecticide.
2) Store seed at 10 to 12 percent moisture.
3) The higher the storage temperature or relative humidity, the lower the storage life of the harvested seed.
4) Rule of thumb - do not let storage temperature (°F) plus humidity exceed 100.
5) Test seed germination before planting.

F. Other Activities
1. Ask local seed producers to talk to the class and explain their operations.
2. Run germination tests.

G. Competency
Identify principles of forage seed production.

H. Answers to Evaluation
1. 3 to 4 inches
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