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Seed Production of Tall Fescue

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When fescue seed is produced in Arkansas, it is generally harvested as a secondary crop. In Arkansas the primary uses of tall fescue are for grazing or hay production. The book *Forages* reports that 90 percent of the U.S. fescue seed crop comes from dual purpose fields in the central transition zone with the bulk of the seed production occurring in Missouri, northern Arkansas and eastern Kansas. To obtain the highest possible seed yields, fescue should be planted in wide rows and intensely managed. This is rarely done in Arkansas since seed production is generally of secondary importance relative to the production of forage.

Farmers who anticipate that they will produce fescue seed for market should first locate potential bulk seed buyers. Only a small number of farmers are likely to be interested in growing, cleaning, drying, bagging, storing and marketing their own seed crop. One problem faced by fescue seed producers is the uncertainty of the market. In some years, the price of fescue seed at harvest time may be extremely attractive, while seed prices the next year may be extremely depressed. It is virtually impossible to predict fescue seed prices from one year to the next.

Fescue seed yields in Arkansas will typically average around 200 pounds per acre. Several experienced seed producers have consistently produced 400 to 600 pounds of seed per acre. Occasionally, seed yields as high as 1,000 pounds per acre are reported. Yields of fescue seed ranging from 1,800 to 2,000 pounds per acre are commonly observed in the northwest seed-producing states. Seed produced in the northwest states is proprietary forage and turf cultivars – certified seed production.

Fescue stubble should be clipped to a height of 3 to 4 inches immediately after combining. Combine stubble and standing plant material shown in this picture should be mowed and removed.

Fescue Seed Production Management Practices

Two management practices are of primary importance in producing high yields of seed. These practices include:

(1) clipping soon after the seed stalks are mature or the seed crop is removed and

(2) the application of nitrogen fertilizer during the very late fall or winter.

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Fescue stubble should be clipped to a height of 3 to 4 inches immediately after harvesting the seed crop. Fields of tall fescue not harvested for seed the previous year but designated for seed production the next year, should be clipped by the time the seed stalks are mature. It is best to remove the residue if possible. Clipping is necessary for the development of tillers. Tillers develop during the fall and early winter and are responsible for the following year's seed crop. Failure to clip the stubble to a height of 3 or 4 inches may reduce the subsequent seed crop by as much as 30 percent. The new growth should be grazed only moderately during the next year prior to seed harvest.

While summer clipping directly influences the number of tillers and seed stalks produced for the next seed crop, nitrogen fertilization has a positive effect on the number of individual seeds in each seed head. In other words, nitrogen affects how well the seed heads "fill." Timing of nitrogen application affects seed yields. If used only for seed production, fescue should be topdressed with 70 to 100 pounds of nitrogen per acre during December or January. Nitrogen applied in the early fall or late summer may not be available at the time it is needed; nitrogen applied during these time periods may be metabolized by fall growth and/or lost through leaching. Conversely, nitrogen applied too late in the winter may cause lodging and excessive vegetative growth rather than positively affecting seed yields.

Nitrogen applied too late in the winter or at rates too high may cause lodging and reduced seed yields.

Applying the proper amount of nitrogen fertilizer to maximize seed production is often complicated by additional nitrogen fertilization during the late summer (August to September) that is applied to encourage fall forage growth for winter grazing. Under these circumstances some additional nitrogen should be applied in December or January for seed production, but the amount will depend upon several factors. These include:

(1) how much nitrogen was applied in the late summer or early fall;
(2) the amount of vegetative fall growth;
(3) grazing intensity;
(4) proportion of clover in the stand and
(5) precipitation.

If no nitrogen was applied in the fall, topdress 70 to 100 pounds per acre during the winter. When 50 to 60 pounds of nitrogen were applied in the fall, then the amount topdressed during the winter should be reduced to 40 to 60 pounds per acre. If 80 to 100 pounds of nitrogen were applied in the fall, then an additional application of 30 to 40 pounds in the winter may be sufficient. Phosphorus and potassium levels should be maintained at least in the medium range of soil fertility based on current soil test results.

Since most of the fescue fields used for seed production are grazed during the fall or winter, cattle management becomes an important factor in seed production. To maximize seed production, grazing pressures should not be too heavy during September, October and early November. It is during this time that tiller development occurs. After the middle of November grazing pressure may be increased and the fescue grazed aggressively. Cattle should be removed from these fields before February 1 in south Arkansas and before February 15 in north Arkansas. Failure to do so will likely result in many of the potential seed heads being grazed and this will subsequently reduce seed yield.

Seed production will usually decline after a fescue stand is three or four years old. Solid stands are often "skim" plowed to a depth of 3 or 4 inches to encourage better seed production. This may not be a viable management option on many Ozark soils that are shallow and rocky.

Fescue Seed Harvest

Fescue seed may be harvested by direct combining; alternatively, stands of fescue may be mowed, windrowed and then combined. Tall fescue seed shatters easily when ripe. Shattering as a result of delays caused by rains, unavailability of harvesting machines or high winds can easily reduce yields by 50 percent or more. Even under favorable conditions,

extreme care and skill by the combine operator are necessary to prevent serious losses.

If the acreage of fescue seed to be harvested is small (can be combined in one or two days) and a combine is available without delay, then direct combining is a feasible method of harvesting. Combining should begin when 5 to 15 percent of the seeds are immature. Many of the late-developing heads will still be immature at this time. Harvesting tall fescue seed when more than 20 percent of the seed crop is immature usually results in low yields. Excessive seed moisture will cause heating during storage, weaken seed vigor and cause poor germination.

If large acreages are to be harvested or delays are expected in obtaining harvesting equipment, then direct combining may not be the best harvest option. Under these circumstances, mowing, windrowing, curing the seed in the windrow and harvesting with a combine equipped with a pickup attachment would be the best method of harvest. Fescue should be mowed at an earlier stage of seed development than when harvested directly with a combine. Mowing should be started when the straw in the head is yellowing. At this stage an occasional seed will shatter from the earliest maturing heads when the stem is tapped below the head. One reference source indicates harvest should begin at a moisture content of 43 percent for the standing fescue seed when the crop is mowed for harvest via the windrow method.

The mower should be set to cut high enough to leave much of the grass stubble. Windrow should be positioned on top of the stubble. Air will circulate through the windrow and decrease drying time. If large acreages of seed and hay are involved, self-propelled mowers are very desirable. Conditioner or crusher settings on self-propelled or pull type mower conditioners used for fescue seed harvesting may need adjustments. The crusher may need to be opened as widely as possible; otherwise, the grain may thrash badly. The fescue should be combined as soon as the windrows are thoroughly dry.

The combine should be set according to the manufacturer's manual. Aggressive cylinder action is not necessary. Chaff should be examined for seed from time to time as harvest proceeds. The glumes, which do not contain seed, will often confuse an inexperienced operator and give the impression that seed is being blown out. It is also helpful to consult seed dealers or buyers prior to harvest. They may suggest procedures about timing of harvest and handling that will help the producer to save more seed and improve seed quality as well.

Weed Control for Fescue Seed Production

Fields of fescue that are to be harvested for seed should be monitored for the presence of weeds. Certain winter annual weeds may need to be controlled with a timely application of a recommended herbicide. Availability of herbicide products for individual crops periodically changes. If a weed situation develops, contact your local county Extension agent for information on currently recommended herbicides, application rates and timing of application for specific weed situations.

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