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Culture Methods for Grain Sorghum Seed Production

February, 1949

South Dakota State College, Brookings, South Dakota

Selecting Seedbed. It is necessary to plant the crop for seed production on land that was not planted recently to other sorghum, because such land may be contaminated from shattered seed of the previous sorghum or sudan grass crop and will produce many volunteer plants. The field should be isolated 40 rods or more from any other sorghum to avoid cross-pollination.

Seedbed Preparation. Preparation of the seedbed for grain sorghum is the same as it is for corn, but with more attention given to killing weeds before planting. On most soils fall or early spring plowing gives the best results. Proper seed placement and coverage of the seed is much easier following a well prepared seedbed.

Seed Treatment. The seed should be treated to insure better stands and to control sorghum kernel smut. The following dust treatments are recommended for use as sorghum seed treatment; Copper carbonate, 2 to 3 ounces per bushel; Arasan, 2 ounces per bushel and Spergon, 2 ounces per bushel. Applications of these treatments should be made according to directions printed on the label.

Time of Planting. The optimum dates of planting grain sorghums are from May 18 to June 1. If planted too early and on a poorly prepared seedbed, weeds are likely to outgrow the young seedlings making it very difficult or impossible to keep the crop clean.

Rate of Planting. The rate of planting should be thicker where rainfall is heavier than where the rainfall is light. More seed should be used when planted in listed furrows than when surface planted. Hills spaced 6 to 14 inches apart in rows give the best yields. The holes in the planter plate should be large enough to allow from 3 to 5 seeds to drop per hill. Grain sorghum should be planted at the rate of 3 to 4 pounds of seed per acre.

Depth of Planting. The seeds of grain sorghum should be planted shallow and at a uniform depth. They should not be covered with more than 1 to 2 inches of soil.

Methods of Planting. Grain sorghum should be planted in cultivated rows. There are two general methods of planting, surface planting with or without furrow openers and listing. Furrow openers attached on the surface planter is a superior method for planting grain sorghum. When planting sorghum with a lister, the listed furrows for sorghum should be shallower than those used for corn.

Cultivation. The cultivation for grain sorghum is the same as for corn. The first cultivation should start soon after the sorghum has emerged.

Remove off Types. Grain sorghums mix and cross readily when grown near sudan grass, forage sorghum or any variety of grain sorghum. Off types and mixtures should be pulled out before heads have shed pollen. Hybrids generally can be distinguished by their greater height and vigor. Other mixtures can be detected by such differences as color of grain, or hull, type of heads and general appearance of leaf or stalk.

Agricultural Experiment Station
South Dakota State College
Brookings, South Dakota

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Time of Harvesting. Grain sorghum for seed production should not be harvested until the heads are matured. Early light frosts are a material help in drying out the matured grain. For direct combining or threshing from the shock, it is very important to thresh the seed crop early in the fall before the germination of the seed is impaired by hard killing frosts.

Methods of Harvesting. There are three general methods of harvesting the grain crop; (1) combining the crop after the grain has matured and the stalks are sufficiently dry, (2) harvesting with a corn binder and curing in shocks and (3) by topping which is done either by hand, grain header or a special wagon box header. It is important that the crop is harvested before a heavy frost and before lodging takes place.

Threshing. The speed of the cylinder of the combine or thresher should be reduced by one-third to one-half or more to prevent cracking the seed. The remainder of the machine should be maintained at its normal rate of speed. It is necessary to lower the concaves and to remove concave teeth. One to two rows of concave teeth are ample to do a good job of threshing. The same riddles and sieves as are used for barley may be employed. There are other minor adjustments of the thresher which will be made by the operator to do a good clean job of threshing, and prevent cracking of the seed.

Certification. Because sorghums cross readily and become mixed, it is desirable to isolate seed fields and produce certified seed to insure superior germ plasm and purity. Certified seed maintains and makes available to the public high quality seed that has high germination, contains a minimum of varietal mixtures, is relatively free from seed borne diseases and is cleaned and graded.

Storage and Cleaning. Grain sorghum is often difficult to keep in storage than cereal grain because it heats easily and quickly. Successful storage of sorghum grain depends upon (1) moisture content of the grain at the time it is placed in storage, (2) percentage of broken kernels, (3) percentage of broken stalks in the grain, (4) maturity and condition of the crop at threshing and, (5) the kind of weather and humidity of air during curing and threshing. The crops should not be threshed only when the grain is dry and during good drying weather. Grain with 12% or less moisture content and free from cracked kernels and broken stalks will keep, as well as seed of small grains. It is necessary to clean and grade the grain to remove broken kernels before it is placed in storage.

Cultivation. The cultivation for grain sorghum is the same as for corn. The first cultivation should start soon after the sorghum has emerged.

Remove old types. Grain sorghum mix and cross readily when grown near sudan grass, foreign sorghum or any variety of grain sorghum. Old types and mixtures should be killed out before heads have shed pollen. Hybrids generally can be distinguished by their greater height and vigor. Other mixtures can be detected by such differences as color of grain or hull, type of heads and general appearance of leaf or stalk.

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