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U. J. Norgaard

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Crops for Summer Seeding in South Dakota

By U. J. Norgaard, Extension Agronomist

Sorghum (Grain or Forage)
A crop that withstands drought, heat and grasshoppers. If proper varieties and cultural practices are used, sorghums are adapted to all counties in the state. Plant about June 1 in mellow soil. Rate of planting: Forage, 6 pounds in low rainfall area, 10 pounds in higher rainfall area. Grain: 3 to 5 seeds per hill, spacing hills about 18 inches apart on well watered land and about 24 inches apart on drier land. (See South Dakota Sorghum Extension Circular 55 for further information.)

Sudan Grass (Pasture or Hay)
Sudan grass is outstanding for July and August supplementary pasture. Let sudan grass grow until from 12 to 18 inches high before mowing. Use 15 pounds per acre drilled or broadcast. Use 4 pounds per acre planted in rows 36 to 42 inches apart. Cut for hay at late-dough state. (Let sudan grass grow until from 12 to 18 inches high before mowing.) Sudangrass is a good fall pasture spell. May not stand for winter killing if moisture is favorable. It has a shallow root system and will not stand prolonged drought. Sudan grass may be planted as late as July 5 if moisture is favorable. It has a shallow root system and while it has small moisture requirement it needs frequent rains. It cannot stand prolonged drought like sorghums. Excellent feed for cattle, sheep, hogs and poultry. For livestock seed should be taken. It is rated nearly as valuable as corn for feed. Seed 1 inch deep in warm soil at rate of 20 pounds per acre. Important varieties are Red Thurgihai which matures in about 70 days. Early Fortune is an extremely early variety which under favorable conditions may be ready to harvest in 60 days. Black Voronezh is a late grain millet with brownish-black seed. It requires about 80 days to mature.

Sudan Grass—Soy Bean Combination
This combination makes excellent forage and one of the best emergency hay crops in the higher rainfall areas, well watered fields, or irrigation. Soy bean hay is high in digestible protein (13 percent). One disadvantage is that soy beans are very susceptible to grasshopper damage. For hay a later maturing variety may be used. Sudan grass and soy beans grow well together. The combination is easy to harvest and cure. They can be seeded together with drill. Plant one bushel soy beans to 1 1/2 bushels sudan grass per acre. For row crops plant at a late date, plant in moist soil to insure immediate germination. This can usually be done by use of the furrow-opener attachment on the planter. Make furrow as shallow as possible and plant the seed in moist soil at the correct depth; Corn 1 to 2 inches, Sorghum 1 inch, Soy Beans 1 to 1 1/2 inches, Beans 1 inch. Use furrow opener on the contour.

Rape
Be sure to get the biennial kind, of which Dwarf Essex is the principal variety. Excellent pasture crop for hogs and sheep. Allow to grow about a foot in height before use. Rape can be planted as late as July 15. Rape is frost resistant and will grow till very late in the season. One common practice is to seed rape between corn rows at last cultivation. Use about 5 pounds, drilled or broadcast. When sown in rows use 2 1/2 to 3 pounds per acre.

Soy Beans (For Beans or Hay)
Soy beans, when planted for bean production, should not be planted later than June 10. Plant as soon as soil is warm. Recommended varieties, listed in order of earliness, are: Mandarins, Habaro, Manchukuta, Volunteers. Soy beans for hay in areas adapted to this crop ranks high as an emergency high protein roughage. They can be grown alone or, as suggested under Sudan grass—Soy bean combination, as a combination crop with Sudan grass. For hay production soy beans do not need to come to full maturity. Therefore somewhat later varieties may be used. (See Extension Leaflet No. 58 for information.)

Dry Beans
Plant beans after soil is thoroughly warm. May be planted as late as June 15. Use about 30 pounds of seed to the acre and do not plant deeper than 1 to 1 1/2 inches. Popular varieties are: Great Northern and Pinto.

Comments
The chart on other side shows the average dates of killing frosts in every county of South Dakota. This information is useful in calculating the latest date it may be feasible to plant the crops listed. If a date, say about 10 days this side of the average is used it should be reasonably safe as far as frost is concerned.

Some of the crops listed here are high risk crops in South Dakota because of our natural climatic conditions. For instance, Soy Beans and Dry Beans would be very risky in some areas. The millets, while they require very little moisture, are high risk crops because they are middle of the summer crops that need frequent rains in July and August.

Therefore, in many areas Sorghums, Sudan Grass, and Flint Corn stand out as the most reliable late planted crops because they are capable of survival through the critical "growing season" of July and August.

For row crops planted at a late date, plant in moist soil to ensure immediate germination. This can usually be done by use of the furrow-opener attachment on the planter. Make furrow as shallow as possible and plant the seed in moist soil at the correct depth; Corn 1 to 2 inches, Sorghum 1 inch, Soy Beans 1 to 1 1/2 inches, Beans 1 inch. Use furrow opener on the contour.

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Proso Millet
Proso is a grain millet which requires only 60 to 80 days to mature. Therefore, it can be planted as late as July 5. If moisture is favorable. It has a shallow root system and while it has small moisture requirement it needs frequent rains. It cannot stand prolonged drought like sorghums. Excellent feed for cattle, sheep, hogs and poultry. For livestock seed should be taken. It is rated nearly as valuable as corn for feed. Seed 1 inch deep in warm soil at rate of 20 pounds per acre. Important varieties are Red Thurgai which matures in about 70 days. Early Fortune is an extremely early variety which under favorable conditions may be ready to harvest in 60 days. Black Voronezh is a late grain millet with brownish-black seed. It requires about 80 days to mature.

Foxytail Millet
There are several varieties of these. Some of these are known as Kursk, Siberian, Hungarian and German. Kursk and Siberian are the earliest and best adapted to the low rainfall areas. Hungarian requires more moisture than Siberian. German millet is about 2 weeks later than Siberian. Kursk or Siberian will mature in about 70 days but under favorable growing conditions only 30 days are required to mature it sufficiently for hay. Seed 1 inch deep in warm soil any time in June and as late as July 10. German millet should be seeded not later than July 1.

Buckwheat
Buckwheat is better adapted to the cool moist climate of the northeastern part of the United States than to South Dakota. However, it only takes 75 to 80 days to mature and may produce a crop in our state if seeded as late as July 10, and if weather conditions (cool and moist) are favorable for its growth. Seed about 3 pecks per acre.

Winter Rye
Rye may be considered the last resort to get early fall pasture. Winter rye makes excellent fall pasture, and, if conditions are favorable, may make a good early spring pasture and later a crop of rye hay or grain. Earliest date to seed would be the last two weeks in July. Ordinarily, of course, winter rye is seeded September 15 if early fall pasture is not urgent. Seed 5 pecks per acre.
Average Dates of Killing Frosts in South Dakota Counties

Sept. 21—Harding
Sept. 22—Shannon
Sept. 23—Corson, Deuel
Sept. 24—Bennett, Butte, Edmunds, Marshall, Todd
Sept. 25—Day, McPherson, Miner, Potter, Ziebach
Sept. 26—Buffalo, Codington, Custer, Hamlin, Perkins
Sept. 27—Brown, C dodge ton, Dewey, Moody, Roberts
Sept. 28—Brookings, Hyde, Jerauld, Kingsbury, Meade, Sanborn, Walworth
Sept. 29—Clark, Faulk, Grant, Hand, Mellette, Spink, Sully
Sept. 30—Douglas, Fall River

Oct. 1—Lake
Oct. 2—Beadle, Hanson, Hutchinson, Lawrence, Lincoln, Lyman, Washabaugh
Oct. 3—Bon Homme, Charles Mix, Jackson, McCook, Minnehaha, Tripp
Oct. 4—Brule, Gregory, Pennington, Stanley, Turner
Oct. 5—Haakon
Oct. 6—Davison, Union
Oct. 7—Aurora
Oct. 8—Clay, Hughes, Jones
Oct. 9—Yankton

These dates are copied from “Climate of South Dakota, 1941, Agricultural Year Book, U.S.D.A.” They represent averages from a period from 20 to 40 years. In planting late crops consider that in about one-half the years killing frosts will come a week or 10 days earlier than the above dates.

### CROPS FOR SUMMER SEEDING

<table>
<thead>
<tr>
<th>Crops</th>
<th>Use</th>
<th>Approx days to mature</th>
<th>Approx latest date to plant*</th>
<th>Rate of seeding per acre</th>
<th>Depth of Seeding</th>
</tr>
</thead>
<tbody>
<tr>
<td>Forage Sorghum</td>
<td>Forage</td>
<td>85-100</td>
<td>June 15</td>
<td>6 lbs. to 8 lbs.</td>
<td>1 to 1½ inch</td>
</tr>
<tr>
<td>Grain Sorghum</td>
<td>Grain</td>
<td>85-100</td>
<td>June 15</td>
<td>2 lbs. to 4 lbs.</td>
<td>1 to 1½ inch</td>
</tr>
<tr>
<td>Sudan Grass</td>
<td>Pasture or Hay</td>
<td>60-70</td>
<td>July 1</td>
<td>15 lbs.</td>
<td>1 inch</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>4 lbs. in rows</td>
<td></td>
</tr>
<tr>
<td>Sudan—Soy Bean Combination</td>
<td>Hay</td>
<td>65-70</td>
<td>June 15</td>
<td>1 bu. Soy Beans 8 lbs.</td>
<td>1 inch</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Sudan</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Flint Corn</td>
<td>Grain</td>
<td>85-100</td>
<td>June 25</td>
<td>5 lbs. or 6 lbs.</td>
<td>1 to 2 inches</td>
</tr>
<tr>
<td>Proso Millet</td>
<td>Grain</td>
<td>60-80</td>
<td>July 5</td>
<td>20 lbs.</td>
<td>1 inch</td>
</tr>
<tr>
<td>Foxtail Millet</td>
<td>Hay</td>
<td>50-70</td>
<td>July 10</td>
<td>15 lbs.</td>
<td>1 inch</td>
</tr>
<tr>
<td>Rape</td>
<td>Pasture</td>
<td>65-75</td>
<td>July 20</td>
<td>5 lbs. drilled 3 lbs.</td>
<td>Less than 1 inch</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>in rows</td>
<td></td>
</tr>
<tr>
<td>Soy Bean Hay</td>
<td>Hay</td>
<td>75-100</td>
<td>June 15</td>
<td>45 lbs.</td>
<td>1 inch</td>
</tr>
<tr>
<td>Soy Beans</td>
<td>Seed</td>
<td>100-110</td>
<td>June 10</td>
<td>45 lbs.</td>
<td>1 to 1½ inch</td>
</tr>
<tr>
<td>Dry Beans</td>
<td>Seed</td>
<td>90-100</td>
<td></td>
<td>80 lbs.</td>
<td>1 to 1½ inch</td>
</tr>
<tr>
<td>Buckwheat</td>
<td>Grain</td>
<td>75-100</td>
<td></td>
<td>8 pecks</td>
<td>½ to 1 inch</td>
</tr>
<tr>
<td>Rye</td>
<td>Fall Pasture</td>
<td></td>
<td></td>
<td>8 pecks</td>
<td>1 inch</td>
</tr>
</tbody>
</table>

* This date will vary by counties. Consult killing frost map and refer to first paragraph and note for planting late crops.
† This date represents earliest date rye should be seeded. Optimum date for seeding fall rye is about September 15.
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