1969

Corn, Sorghum and Soybean Production Guide: A Summary of Recommendations

Cooperative Extension South Dakota State University

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ROW CROP PRODUCTION GUIDE

Varieties
Fertilization
Seeding Dates and Rates
Insect Control
Weed Control
Disease Control

COOPERATIVE EXTENSION SERVICE
SOUTH DAKOTA STATE UNIVERSITY
U. S. DEPARTMENT OF AGRICULTURE

Issued in furtherance of Cooperative Extension work, Acts of May 8 and June 30, 1914, in cooperation with the United States Department of Agriculture. John T. Stone, Dean of Extension, South Dakota State University, Brookings.
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CORN, SORGHUM AND SOYBEAN PRODUCTION GUIDE

A Summary of Recommendations

Varieties
Fertilization
Seeding Dates and Rates

Insect Control
Weed Control
Disease Control
Corn and Grain Sorghum Production Guide

**CROP**

- **Corn**
- **Sorghum**

**ADAPTATION AREA**

- 60-80
- 80-100
- 100-120
- 60-80
- 80-100
- 100-120

**AREA OF BEST ADAPTATION**

- 60-80
- 80-100
- 100-120

**SEEDING DATE**

- May 10-15
- May 10-20
- May 10-15
- May 10-15
- May 10-15
- May 10-15

**SEEDING RATE**

- 10-12
- 8-10
- 4-6

**CHEMICAL WEED CONTROL**

- **INSECT AND DISEASE CONTROL**

- **FERTILIZER RECOMMENDATIONS**

**REMARKS**

- Corn earworm in heads, fall armyworms and webworms are of concern.
- Sclerotinia is a disease that can reduce crop yield.
- Yield potentials are based on the soil organic matter as determined in a soil test.
- The nitrogen recommendation is shown in Table 1. 3. when recommended for a continuous corn rotation in the eastern half of the state.

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**Table 1. Nitrogen Rate Recommendations**

<table>
<thead>
<tr>
<th>Nitrogen Rate Recommendations</th>
<th>% of Yield Potential</th>
<th>% of Soil Test</th>
<th>Rate (lbs N/A per year)</th>
</tr>
</thead>
<tbody>
<tr>
<td>40 - 50</td>
<td>1.5 - 2</td>
<td>Low</td>
<td>70</td>
</tr>
<tr>
<td>60 - 70</td>
<td>2.5 - 3.5</td>
<td>Medium</td>
<td>100</td>
</tr>
<tr>
<td>80 - 90</td>
<td>3.5 - 4.5</td>
<td>High</td>
<td>130</td>
</tr>
</tbody>
</table>

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**Table 2. Phosphorus Rate Recommendations**

<table>
<thead>
<tr>
<th>Phosphorus Rate Recommendations</th>
<th>% of Yield Potential</th>
<th>% of Soil Test</th>
<th>Rate (lbs P2O5/A)</th>
</tr>
</thead>
<tbody>
<tr>
<td>40 - 50</td>
<td>1.5 - 2</td>
<td>Low</td>
<td>70</td>
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<td>80 - 90</td>
<td>3.5 - 4.5</td>
<td>High</td>
<td>130</td>
</tr>
</tbody>
</table>

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**Table 3. Zinc Rate Recommendations**

<table>
<thead>
<tr>
<th>Zinc Rate Recommendations</th>
<th>% of Yield Potential</th>
<th>% of Soil Test</th>
<th>Rate (lbs Zn/A)</th>
</tr>
</thead>
<tbody>
<tr>
<td>40 - 50</td>
<td>1.5 - 2</td>
<td>Low</td>
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<td>High</td>
<td>130</td>
</tr>
</tbody>
</table>
Adapted commercially developed sorghum hybrids are available. Some are superior to the varieties listed here. However, the policy of the South Dakota Agricultural Experiment Station does not permit it to recommend commercially developed crops or varieties. Limited tests indicate that forage sorghums will produce more forage when planted in 30-inch rows than when planted in 40-inch rows if soil moisture and fertility are adequate. About 100,000 plants per acre usually result in maximum yield of highest quality forage.

<table>
<thead>
<tr>
<th>SEEDING RATE</th>
<th>SEEDING DATE</th>
<th>REMARKS</th>
</tr>
</thead>
<tbody>
<tr>
<td>8-12 lbs./A</td>
<td>May 15 to June 10</td>
<td>In warm soil</td>
</tr>
</tbody>
</table>

**Soybeans**

Forage Sorghum

- **Rancher D1, D2, D3**
- **Rox Orange (Wisteria) D1, D2, D3**
- **SD 252 F**

- **Statewide**
- **In warm soil**
- **May 15 to June 10**

**Solid-drilled**
- **120 lbs./A (6 seeds per foot of row)**
- **20-inch rows**
- **10 lbs./A (10 seeds per foot of row)**
- **30-inch rows**
- **60 lbs./A (12 seeds per foot of row)**

**Late May (right after corn is planted)**

- **Inoculate seed before planting.**
- **Corsoy is not recommended for northern counties of area D3. Ford and Wayne not recommended for northern counties of D1 and D2.**
- **Chippewa 64 and HawkEye 63 resistant to Phyllostachys root rot, which is not prevalent in South Dakota.**
- **HawkEye 63 is adapted to small grains and potatoes, but not in South Dakota.**

- **Limited tests and observations indicate there is seldom any yield advantage from planting rows closer than 20 inches.**
- **Planting with narrower row spacings tends to cause the soybeans to grow taller, and bear pods higher off the ground, which facilitates harvesting. It also causes shedding of weeds, and chemicals are more effective in narrow row spacings.**
- **Rows spaced too closely cause too much shading, beans tend to grow too tall and lodge. Narrower row spacing also may make it more difficult to control weeds with cultivation.**

**Broad-leaved Weeds**

<table>
<thead>
<tr>
<th>Herbicide</th>
<th>Rate (Lb/A)</th>
<th>Time of Application</th>
</tr>
</thead>
<tbody>
<tr>
<td>2,4-D</td>
<td>1-2 lbs</td>
<td>Pre-emergence</td>
</tr>
<tr>
<td>2,4-D</td>
<td>4-6 lbs</td>
<td>Pre-emergence</td>
</tr>
</tbody>
</table>

**Pre-emergence**

- **2,4-D amine 1-2 lbs from ground to new leaf is emerging.**
- **2,4-D 4-6 lbs from ground to new leaf is emerging.**

**Annual Weeds**

- **Atrazine (Atracur) 2-3 lbs per acre.**
- **Propazine (Riplaured) 2-3 lbs per acre.**

**Herbicide Rate Time of Application**

**Broad-leaved Weeds**

- **Pre-emergence**
- **Post-emergence**

**Grassy Annuals**

- **Avena (Oat) 2-3 lbs per acre.**
- **Cocksfoot (Dactylis) 2-3 lbs per acre.**

**Weed Control**

**SOYBEAN INSECTS**

- **Grasshoppers: Curbury (Sevin) 1 pound per acre.**
- **Malathion: 1 pound per acre.**
- **Methidathion: 2-3 lbs per acre.**

**Dust**

- **Ceresan Dust 1 lb per acre.**
- **Malathion low-volume Dust 1 lb per acre.**

**Rotary or gravity treaters**

- **Propazine (Riplaured) 1 lb per acre.**
- **Malathion low-volume Slurry 1 lb per acre.**

**Cockleburs**

- **(Coroxene 170 or Nesselene 5B) 2-3 oz.**
- **Apply 7-10 days after bloom. Use 1 gallon of 7.5 lbs/gal, seed adjacent material applied to 10 inches of beans. Use 10 to 12 gals. spray solution per acre.**

**Soybean Yield and Fertilizer Recommendations**

- **Yield Potential:**
  - **Grain:**
    - **Sorghum:**
      - **25 bushels per acre**
    - **Soybeans:**
      - **60 bushels per acre**

- **Fertilizer Recommendations:**
  - **N:**
    - **Grain:**
      - **60 lbs per acre**
    - **Soybeans:**
      - **100 lbs per acre**

**Fertilizer Recommendations for Soybeans**

Soybeans resemble legumes in their nutrient needs. Proper inoculation of seed will usually assure that the crop will be able to supply its own nitrogen needs. Soybeans can be relatively heavy users of phosphorus and potash. Experimental data indicate soybean response to fertilizer is rather inconsistent. Some evidence suggests it is more profitable to apply fertilizer to other crops in the rotation and let soybeans obtain their nutrient needs from these two elements from residual carrier and overall soil supplies. This may be the case in the more fertile soils.

**Forage Sorghum and Soybean Production Guide**

**Crop Adaptation Areas of South Dakota**

CROPPING SYSTEMS FOR SOUTH DAKOTA

Soybeans, which are highly recommended in the central and southern areas, are not recommended in the northern counties of D3. Ford and Wayne are not recommended in northern counties of D1 and D2.

**Fertilizer Recommendations for Forage Sorghum**

Apply fertilizer on forage sorghum at the rates that would be used for forage silage. This is 90% above the rates suggested in Tables 1, 2, or 3 for corn or soybean grown for grain.

**EXAMPLE:** A rotation that contains no legumes and the soil test is 2.2% organic matter (low range), and corn or grain sorghum yield is 60 bushels, would require 60 lbs. of nitrogen for grains, but 90 lbs. if harvested for silage. Forage sorghum grown on that field would require 90 lbs. of nitrogen.