1965

Small Grain Production Guide: A Summary of Recommendations

L. A. Derscheid
R. A. Cline
E. E. Sanderson
E. J. Langin

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## SMALL GRAIN PRODUCTION GUIDE

Information for this chart comes from L. A. Derscheid, R. A. Cline, E. E. Sanderson, E. J. Langin, Earl Adams, and K. R. Frost, of the Agronomy Department; B. H. Kantack, of the Entomology Department; and L. S. Wood, of the Plant Pathology Department. All of these men are specialists with the South Dakota State University Cooperative Extension Service.
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<td>Minhafer</td>
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<td>Statewide, except B1</td>
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<tr>
<td>Cantyacht</td>
<td>B1</td>
<td></td>
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<tr>
<td>Crim</td>
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<tr>
<td>Justin</td>
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<tr>
<td>Lee</td>
<td>Statewide</td>
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<td>Pembina</td>
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<td>Rushmore</td>
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<td>Durum Wheat</td>
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<td>Lakota</td>
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<td>Wells</td>
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<td>Gage</td>
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<td>Nebred</td>
<td>B3, B4, C2, C3</td>
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<tr>
<td>Omaha</td>
<td>B4, C2, C3, D4, E</td>
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</tr>
<tr>
<td>Ottawa</td>
<td>B3, B4, C2, C3</td>
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<tr>
<td>Scout</td>
<td>B4, C2, C3</td>
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<td>Winalta</td>
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<td>Caribou</td>
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<tr>
<td>Pierre</td>
<td>Statewide</td>
<td></td>
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<tr>
<td>Flax</td>
<td></td>
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<tr>
<td>B-5128</td>
<td>C1, D1, D2, D3</td>
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<td>B-5128 (SS)</td>
<td>C1, D1, D2, D3</td>
<td></td>
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<tr>
<td>Bolley</td>
<td>all flax areas</td>
<td></td>
</tr>
<tr>
<td>Redwood</td>
<td>C1, D1, D2, D3</td>
<td></td>
</tr>
<tr>
<td>Summit</td>
<td>all flax areas</td>
<td></td>
</tr>
<tr>
<td>Windom</td>
<td>all flax areas</td>
<td></td>
</tr>
</tbody>
</table>
SEEDING
RATE
60-75 lbs/A
Use the lower rate in areas B1, B2, B3, and B4.
Increase rate 30% for broadcast seeding.

SEEDING
DATE
April 10-20
(After wheat is planted.)

CHEMICAL WEED CONTROL

H愍RCIDE
2,4-D or MCPA
Amine
2,4-D ester
2,4-D

RATE
1/2-1
1/2
1

TIME
Oats in 6-leaf to boot stage.
CROP in 5-leaf to boot stage.
After dough.

khED-LEAVED WEEDS

TRIALLATE
Barban
(2,4-D)
Triallate
(Avadex-BW or Fer-go)

WILD OATS

BROAD-LEAVED WEEDS

2,4-D ester
2,4-D amine
2,4-D

1/2
1/4
1

1/2-1/4
1/2-1
1

50-60 lbs. pressure
Wild oats in 2-leaf stage (less than 14 days after emergence).
Pre-emergence on a smooth surface and incorporate immediately.

MCACA is not so apt to injure the crop, however, it is less effective as a weed killer except for mustards and lambs-quarters. Treatment at the dough stage of growth does not remove weed competition until crop yield has been reduced, but does kill weeds and facilitate harvesting.

REMARKS
Neal not well adapted to northern counties of areas B2 and B3.

Ortle, Portage, and Rodney not well adapted to southern counties of Tipppecanoe not well adapted to northern counties of area C1.

Garry and Mo-0-205 are most tolerant to 2,4-D. Mo-0-205 is not a desirable milling oat. Rodney and Garry tend to produce double-oats, not desired by the oat milling industry.

Andrew, Burnett, and Mo-0-205 are the best varieties for use on irrigation.

Larker, Trophy and Dickson must not be mixed with Kindred or Trail.

Spartan not well adapted to northern counties and Trophy, Kindred, Dickson, and Traill not well adapted to southern counties of area B2. Trophy and Dickson not well adapted to southern counties of area C1. Larker seed has a tendency to discolor under moist climatic conditions.

Liberty, Trail, Lee, and Selkirk do well on irrigation.

All recommended oat varieties are known to have acceptable or good milling qualities.

Minter is the most winter-hardy variety. Minter, Ottawa, Gage, Lancer, Scout, and Winalta are tolerant of stem rust Race 56. Omaha, Ottawa, and Warrior are resistant to Hessian fly. Warrior, Ottawa, and Lancer are resistant to northern counties of area B3.

Let rye grow 4 to 6 inches high before pasturing in the spring.

To get good grain yield, do not graze after the rye is in the boot stage.

MCPA less injurious to crop than 2,4-D.

B-5128, B-5128 (SS), and Redwood not adapted for late seeding.

Flax often responds to same rates of nitrogen application on these crops. Please, herbicides. Fertilizer application takes place during very little nitrogen is used the next year and less nitrogen is used.

Apply fertilizer to soils of low fertility than 0-2.0. soil can be estimated by a soil test.

The amount of nitrate matter in the soil. Although organic matter, a soil test measurement takes place during very little nitrogen is used this year and less nitrogen is used.

Apply nitrogen broadcast at time of planting. As needed, except that the recommendation is 10 pounds with drill attachment. Use on texture soils moist to a depth of 6 inches. Use only one-half the recommended rate.

Percent organic matter

0-2.0
2.5-3.0
3.5-4.0
4.0-4.5

Apply with drill attachment.

The amount of phosphorus in the soil. The majority of South central phosphorus per acre, but a soil phosphorus broadcast banding. Phosphorus is relatively more phosphorus recommendation in the root zone than elemental P (a newer technique). It is estimated by a soil test.

Soil test

(lb. P/Acre)

0.5
5-15
15-25
25-40
40-

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2.5-3.0
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(lb. P/Acre)

0.5
5-15
15-25
25-40
40-

Apply nitrogen broadcast at time of planting. As needed, except that the recommendation is 10 pounds with drill attachment. Use on texture soils moist to a depth of 6 inches. Use only one-half the recommended rate.
FERTILIZER

Supplement the nutrients in the soil. Use more fertilizer on soils of high fertility. The present fertility level of the crop can be determined more accurately.

NITROGEN

Nitrogen fertilizer needed depends on the amount of organic matter in the soil, the majority of South Dakota soils contain 2.0 to 3.5% organic matter. Therefore, more nitrogen is available for crop use when fertilizer is needed on fallow land than on non-fallow land cast before or after planting or with a drill attachment such as 30 pounds per acre can be applied with a drill attachment. Biuret content of urea may cause damage to germination that safe to apply with drill attachment, may be applied broadcast before or after planting or with a drill attachment at time of planting or with a drill attachment at time of planting.

Recommended pounds of nitrogen per acre

<table>
<thead>
<tr>
<th>Condition</th>
<th>Rate</th>
<th>Application Method</th>
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</thead>
<tbody>
<tr>
<td>Non-fallow land</td>
<td>40</td>
<td>Dust</td>
</tr>
<tr>
<td></td>
<td>35</td>
<td>Rotary or gravity</td>
</tr>
<tr>
<td></td>
<td>30</td>
<td>Slurry</td>
</tr>
<tr>
<td></td>
<td>25</td>
<td>Slurry</td>
</tr>
<tr>
<td></td>
<td>25</td>
<td>Slurry</td>
</tr>
<tr>
<td></td>
<td>5-15-0+</td>
<td>Liquid</td>
</tr>
<tr>
<td>Fallow land</td>
<td>20</td>
<td>Dust</td>
</tr>
<tr>
<td></td>
<td>0</td>
<td>Rotary or gravity</td>
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<tr>
<td></td>
<td>0</td>
<td>Slurry</td>
</tr>
<tr>
<td></td>
<td>0</td>
<td>Slurry</td>
</tr>
<tr>
<td></td>
<td>0</td>
<td>Slurry</td>
</tr>
</tbody>
</table>

INSECT CONTROL AND DISEASE CONTROL

Treat seed before planting to reduce crop losses from seed- and soil-borne diseases.

DISEASES

<table>
<thead>
<tr>
<th>Fungicide</th>
<th>Rate</th>
<th>Formulation</th>
<th>Application Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Captan 75</td>
<td>1/2 oz.</td>
<td>Dust</td>
<td>Rotary or gravity treater</td>
</tr>
<tr>
<td></td>
<td>1 oz.</td>
<td>Dust</td>
<td>Slurry treater</td>
</tr>
<tr>
<td>Captan-Hexaclorobenzene (for wheat only)</td>
<td>1 oz./bu.</td>
<td>Dust</td>
<td>Slurry treater</td>
</tr>
<tr>
<td>Ceresan M* (wheat, barley or oats)</td>
<td>1/2 oz.</td>
<td>Dust</td>
<td>Rotary or gravity treater</td>
</tr>
<tr>
<td>Wheat Barley Oats</td>
<td>1 lb./gal. water</td>
<td>Dust</td>
<td>Slurry treater</td>
</tr>
<tr>
<td>Panogen 15</td>
<td>1/2 oz.</td>
<td>Liquid</td>
<td>Liquid or mist-type treater</td>
</tr>
</tbody>
</table>

*Ceresan M-DB, a 1 to 4 formulation available for drill box application; use 6 oz. per bushel and apply as directed.

INSECTS

Aphids:
- Malathion - 1.0 lb/A

Armyworms:
- Toxaphene - 1.5 lb/A of emulsifiable conc.
- *Parathion 4 oz/A of emulsifiable conc.
- *Endrin - 3-4 oz/A

Cutworms:
- Toxaphene - 1.5 lb/A emulsifiable conc.
- *Parathion 4 oz/A of emulsifiable conc.
- *Endrin - 3-4 oz/A

Grasshoppers:
- Aldrin - 2.5 oz/A
- Dieldrin - 1-2 oz/A
- Chlordane - 1 lb/A
- Malathion - 1 lb/A
- Toxaphene - 1-1.5 lb/A

Greenbugs:
- *Parathion 4 oz/A of emulsifiable conc.

Mites:
- *Parathion 4 oz/A of emulsifiable conc.

*Parathion and endrin should not be used by anyone except commercial applicators. Parathion should not be used on rye.

Check with your local County Agricultural Agent or Extension Entomologist before using insecticides to be sure label approval has not been changed since this publication was printed.

INSECT CONTROL AND DISEASE CONTROL

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<th>Application Method</th>
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<tr>
<td>Captan 75</td>
<td>2 oz./bu.</td>
<td>Dust</td>
<td>Rotary or gravity treater</td>
</tr>
<tr>
<td></td>
<td>1 oz./bu.</td>
<td>Dust</td>
<td>Slurry treater</td>
</tr>
<tr>
<td>Ceresan M*</td>
<td>1 oz.</td>
<td>Dust</td>
<td>Rotary or gravity treater</td>
</tr>
<tr>
<td></td>
<td>3 lbs./gal. water</td>
<td>Dust</td>
<td>Slurry treater</td>
</tr>
<tr>
<td>Ceresan L</td>
<td>1 oz.</td>
<td>Liquid</td>
<td>Liquid or mist-type treater</td>
</tr>
<tr>
<td>Panogen 15</td>
<td>1 oz.</td>
<td>Liquid</td>
<td>Liquid or mist-type treater</td>
</tr>
</tbody>
</table>

*Ceresan M-DB, a 1 to 4 formulation available for drill box application; use 6 oz. per bushel and apply as directed.
Secure the following fact sheets for more information on small grain production:

- Barley Production in South Dakota
- Oat Production in South Dakota
- Producing Oats for Milling
- Spring Wheat Production
- Flax Production in South Dakota
- Fertilizing Small Grain
- Seed Treatment
- Weed Control in Small Grain