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Flax Production in South Dakota

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Fit Flax into Crop Rotation

Flax should follow a clean, cultivated crop or a sod crop in the regular rotation. Flax after weed-free soybeans is ideal. Some growers use small grain land by packing the plowed land before seeding. Prepare a firm seedbed in fertile, well-drained soil, free from weeds. Flax makes a good “companion crop” for grasses and legumes seedings in areas where moisture is fairly abundant.

Guard Against Weeds

Flax is a poor “weed fighter” and weed control is extremely important in successful flax production. Sow only cleaned, weed-free seed. Select intertilled crop land (like corn or soybeans) where weeds were thoroughly controlled the previous year. Early fall plowing where timely cultivation has been done to encourage weed seed germination is another weed control practice in eastern and higher rainfall areas. This can be hazardous where soil erosion is a problem. Early planting is an effective means of escaping damage from hot weather weeds, such as the foxtails, wild buckwheat and pigweed.

Where wild oats is a problem, delay seeding (to the last of May or first of June) to kill one or two crops of wild oat seedlings.

Use care if chemical weed killers are used for weed control in flax. Follow with good cultural weed control practices—and only use chemicals when necessary. Present herbicide recommendations are: ¼ pound or less of acid equivalent per acre of 2,4-D or MCPA for broad-leaf annual weeds before they are six inches tall. Five pounds of

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TCA or one pound of dalapon per acre for control of the foxtails are applied when they are 2 inches tall. Refer to South Dakota Experiment Station or Extension Service circulars for more specific information on chemical control of weeds.

Treat the Seed

Seed treatment is always recommended to reduce seed decay and to provide protection against harmful soil-borne organisms. Uniform coverage of the treatment on the seeds is essential. The following fungicides are recommended: Ceresan M at 1 ½ oz. per bushel; Panogen at 1 ½ oz. per bushel; or Captan 2 oz. per bushel. Follow the directions on the container carefully.

The Hazard of Heat and Drought

A flax crop prefers a cool, humid climate for maximum yield. For this reason flax is best adapted in the high altitude areas in the Northeast and East Central sections of the state; however, all areas have the hazards of heat and drought during July and August. Therefore, a flax grower should have his flax crop as far advanced as possible before this period.

Sow on land where: (1) timely tillage practices have conserved moisture; (2) planting is on the contour to prevent water runoff; (3) weeds were controlled the previous year; (4) adequate fertility is provided. Have a soil test made to determine fertility needs. Frequently, commercial nitrogen fertilizer stimulates weeds to the point that many growers fertilize the previous crop in the rotation rather than the flax crop.

Seed early: Long time experimental records of the South Dakota Experiment Station show that the optimum planting date for flax is April 15 to April 25. If flax gets past the second leaf stage, it can stand freezing temperatures. Delayed seedings are more subject to damage by heat, drought, insects and weeds (such as foxtails) which germinate when soil is warm.

Seed Recommended Varieties

<table>
<thead>
<tr>
<th>Variety</th>
<th>Maturity</th>
<th>Area of Adaptation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bolley</td>
<td>Early</td>
<td>All areas where flax is grown</td>
</tr>
<tr>
<td>Marine</td>
<td>Early</td>
<td>All areas where flax is grown</td>
</tr>
<tr>
<td>Sheyenne</td>
<td>Early</td>
<td>All areas where flax is grown</td>
</tr>
<tr>
<td>Redwood</td>
<td>Midseason</td>
<td>Northeast and East Central</td>
</tr>
<tr>
<td>Añny</td>
<td>Late</td>
<td>Northeast and East Central</td>
</tr>
<tr>
<td>B-5128</td>
<td>Late</td>
<td>Northeast and East Central</td>
</tr>
</tbody>
</table>
Flax Diseases

Wilt—All recommended varieties are moderately resistant or resistant.
Rust—All recommended varieties are resistant to present day flax rust races.
Pasmo—Arny, Marine and Bolley carry some resistance. Other varieties are considered susceptible.
Aster Yellows—A virus disease that is transmitted by the 6 spotted leaf-hopper. All varieties are susceptible. Early plantings have some escape value. Aster yellows was a serious disease in 1957 causing a severe reduction in flax yields.
Rhizoctonia—A fungus organism that causes a seedling blight. The organism attacks the stem just below the soil surface. The infected plants frequently die, resulting in drastic thinning of the stand. Unfavorable environmental conditions favor outbreaks of the disease. Seed treatment may be beneficial as a control measure. All varieties are more or less susceptible.

Method of Seeding

Flax should be seeded with a grain drill in a level, firm seedbed. If seeded in a loose seedbed, there is danger of planting the seed too deep. Plant shallow, about 1 to 1½ inches deep. The pony-press drill has been used successfully. It has the advantage of placing the seed in moist soil and thus insuring immediate germination.

Use Best Rate of Seeding

Rate of seeding per acre will vary with size of seed, rainfall, time of seeding and germination. In the eastern counties of South Dakota—where rainfall is usually more abundant than outside the flax producing area—the recommended rate of seeding for the medium to large seeded varieties is 42 to 56 pounds per acre. For small seeded varieties, the rate of seeding can be reduced by one-fourth.

As a general rule for rate of seeding, adjust the drill to sow four to five seeds per inch in the drill row.

The above rates of seeding are for seed with germination of 90 per cent or higher. Test all seed for germination before planting.

Method of Harvesting

Flax does not shatter or lodge as easily as the small grains and, therefore, can be left standing until the seed is
fully mature with little danger or loss in yield or quality. Standing flax can be straight combined if the moisture content of the seed is below 12 per cent. Because of the presence of green weeds in flax, many operators cut with a windrower and allow the swath to dry. Moisture in green flax bolls can lower the quality of the harvested seed.

Harvest and Store with Care

Take care to prevent cracking or injury to the seed in threshing and in elevating. Cracked seed is very often the cause of poor germination. Reduction of speed on the cylinder and of machines handling flax seed helps prevent cracking and injury to the seed coat. Cylinder teeth should be properly aligned. Rub-bar-type combines have been very satisfactory when adjusted and operated properly.

Flax seed cannot be stored safely until moisture content is 11 per cent or less.