

Flax grown in South Dakota less than demand

by:- Ag Professional

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Today only about 7,000 acres in South Dakota are planted to flax seed. This is a large change from the mid-1980s when South Dakota produced close to 100,000 acres of flax and was one of the largest producers in the U.S., said Ruth Beck, SDSU Extension agronomy field specialist.

The reduction in flax seed production in South Dakota is not because of less demand as a human food ingredient. Flax seed demand has increased in recent years because of consumer popularity for the seed or meal; flax seed has high dietary fiber and high omega-3 oil content.

Flax 101

Flax produced in South Dakota is typically used for diverse products of feed, food or oil.

There are varieties with yellow seed and others with brown seed. "Some markets discriminate on seed color while others don't," Beck said. "Flax works well in a crop rotation with small grains and corn."

South Dakota flax is also often a popular component of cover crop mixes because it attracts pollinators and has strong arbuscular mycorrhizal associations.

Research has shown that meal made from flax that has had the oil removed by solvent extraction or cold-pressing makes excellent livestock feed.

For optimum yield and disease control, flax should be in a three-year or more rotation. Beck said producers should select a variety that is adapted to their location. SDSU has flax variety performance results from 2012 and previous years available on iGrow.org.

Moisture requirements

Moisture requirements for flax are lower than many other crops including wheat, corn and sunflowers. The root system on flax is primarily located in the top 2 to 3 foot of the soil. Consequently, Beck said flax does better in medium and heavy textured soils that hold more water in the surface layers.

"Flax is highly mycorrhizal meaning it can extract maximum amounts of water from the zones where its roots grow if it is in a diverse no-till rotation favoring VAM (vesicular arbuscular mycorrhiza)," she said. "This ability to dry the surface soil sometimes presents more of a challenge in establishing a winter wheat stand in the fall as compared to where peas are grown. The excellent snow-catching ability of flax stubble provides a distinct advantage in recharging soil water prior to spring."

Planting recommendations

Flax should be seeded at $\frac{3}{4}$ inch to $1\frac{1}{4}$ inches deep.

"Be sure to plant only high quality seed with good germination. Certified seed is recommended to assure varietal purity, seed viability, and freedom from pathogens and weed seed," she said.

Seed treated with a fungicide can reduce seed decay and seedling blight and increase stand significantly. Some published fact sheets on flax production recommend that seeding rates be between 25 to 45 pounds per acre. In fact, Beck said, experienced flax producers in central South Dakota and the SDSU Oilseeds group usually seed flax at rates around 50 pounds per acre.

Vulnerable to frost

Flax is epigeal upon emergence meaning it places its growing point above the soil surface (or above crop residue). This makes it vulnerable to spring frosts, Beck explained.

"High residue conditions actually enhance this issue for crops like flax. Residue reduces frost issues with crops that keep their growing point below the residue/soil surface (peas, small grains, corn) until later in their growth cycle. This means flax is normally seeded later than peas and wheat and before corn," she said.

When seeding with disc drills into no-till it is important to measure the distance of the seed into the soil.

"Some producers tie up their closing wheels when residue levels are heavy, leaving the flax pressed into the bottom of a trench that is not fully closed. High residue farming systems minimize issues with surface crusting. The small seed size of flax means it is vulnerable to surface crusts," Beck said.

Flax is sensitive to seed-placed fertilizers. It is more sensitive to zinc deficiency than many crops. Like most oilseeds it requires sulfur.

To learn more about nutrient requirements of flax, visit iGrow.org and review the South Dakota's Fertilizer Recommendation Guide.

Herbicide recommendations

Herbicide options are included in the 2014 South Dakota Pest Management Guide for Alfalfa and Oilseeds. There are several herbicide options (bromoxynil, MCPA, and clopyralid and combinations) that provide opportunities to break resistance cycles that develop in wheat, corn, and soybean production.

Life cycle of flax seed

The life cycle of the flax plant consists of a 45- to 60-day vegetative period, a 15- to 25-day flowering period and a maturation period of 30 to 40 days. Flax maturity is usually judged by the color of the bolls. Beck said that typically flax is harvested when 75-90 percent of the bolls are brown.

During the ripening process, under certain conditions, stems may remain green and a second flush of flowers may even occur. Desiccants can be used to accelerate the drying after the crop is mature (70-80 percent of bolls are brown; seed moisture 30 percent or less) and may be beneficial especially in fields that contain a lot of weeds.

Grasshoppers can be an issue with flax especially during boll development and ripening stages. Sanitation practices on field borders can be very important in preventing problems.

Flax can be straight cut with a platform or stripped using a stripper header. Swathing is an option but is not common anymore. Desiccants can aid this process.