SOLUTIONS IN THE LAND

CROP PROFILE

SORGHUM

Sorghum bicolor
Grass species
Member of poacea family

History

Milo, or grain sorghum, was used for grain production in arid regions and originated in Egypt about 4,000 years ago. Today, sorghum is Africa's second most popular cereal.

Climate Needs

Average temperatures of at least 80°F during July are necessary for maximum grain sorghum yields. Milo is very sensitive to cold weather and will be killed by even a light frost. After sorghum reaches maturity, rainy weather may cause sprouting in the head, weathering, or both.

Risk

Milo does not bring much risk when growing. The most imporatnt reminder is wildlife does tend to eat Milo as soon as it is ready for harvest.

Sorghum Description

Grain sorghum plants are coarse annual grasses with stems growing no more than 5ft. Milo is shorter than other sorghum varieties, yet produces a higher grain yield.

Soil

Sorghum should be seeded after the soil temperature reaches 60 to 65°F and with a pH of 6 to 7.5. Milo produces best on deep, fertile, well-drained loamy soils however it is possible to grow on clay, clay loam, or sandy loam soils. It is much more tolerant of shallow soil and drought conditions than corn.

Seeding

The seeding depth for milo is ¾ to 11/4 inches in heavy soils and up to 2 inches in sands. A grain drill can be used, seeding at 12 to 15 lbs per acre if the drill cannot be calibrated more closely than this. Narrow rows may produce more yield than wide rows. A corn planter can also be used. Seeding should be done between May 15th and early June.

Fertility

It is recommended there be 0 to 80 lbs of phosphate and potash per acre. Non-irrigated milo should receive 80 to 100 lbs of nitrogen per acre. Fertilizer applied before planting should be well worked into the seedbed or banded near the row. Using a small amount of starter fertilizer may increase yield and enable quicker maturity of milo planted in cool soils and reduced tillage systems. Adequate application rates for starter fertilizer should be about 20 to 30 lbs per acre of nitrogen and 20 pounds of P2O2. The nitrogen applied in the beginning should be considered part of the total 80 to 100 lbs needed. Apply the remainder of nitrogen 3 to 5 weeks after grain sorghum emerges.

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Highlights

Due to its hard kernel, sorghum is disease resistant and not easily damaged. However, this does make it difficult to digest. The grain in a 100-bushel-per-acre sorghum crop removes about 150 lbs of nitrogen, 14 lbs of phosphorus, and 14 lbs of potassium. On-farm utilization as feed is the best option for the use of milo.

Weed Control

Timely cultivations of sorghum planted in 20 inches or broader rows during early growth stages are very important. Canada thistle, milkweed, and hemp dogbane should be suppressed the year before. Early spring seedbed preparation, followed by one or two shallow cultivations just before planting sorghum, will kill several generations of weed seedlings and give sorghum a chance to get ahead of the weeds.

Pest & Disease Managment

Grain sorghum is resistant to corn rootworms but is sensitive to corn earworms, aphids, and green bugs. The most severe pest problem for grain sorghum growers will likely be bird damage.

Harvest

Grain sorghum matures when the moisture content is at about 30%. In order to ensure excellent grain, plants should complete heading by early August. Nearly all grain sorghum can be harvested as a standing crop with a combine. The recommended cylinder speed is 750-1300 R.P.M., but loss determinations should be made to refine the combined adjustments.

Cleaning & Storage

Grain sorghum can be dried with corn-drying equipment and stored at 13% moisture and in clean bins. Use 1/10 cfm/bu airflow. Grain sorghum should not be heated over 200°F since feeding values are reduced by high temperature.

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Rating any crop's production opportunity or risk is subjective and depends on the region where the crop is to be raised. Genetic advancement for pathogen tolerance and adverse weather condition has been more significant for popular, high seed sales crops such as corn and soybeans. The table below lists some of the issues of producing specific crops and helps guide your process of selecting your cropping choice.

Average rating: 3.6

Issue	1	2	3	4	5
Seed availability					X
Scouting requirements		X			
Drought tolerance				X	
Waterlogged soil tolerance				X	
Disease pressure				X	
Wildlife concerns		X			
Yield swings			X		
Harvest ability					X
Field loss			X		
Market demand				X	
Soil regeneration		X			
Residue value			X		
Storability					X
Benefit for following crop				X	

1- very low 2- low 3- average 4- moderately high 5- very high

Seed availability – Price, lead time, and required lot size are considerations for these issues
Scouting requirements – What frequency does someone need to look at the crop?
Drought tolerance – Rainfall patterns are requiring crops go longer between rainfall events.
Waterlogged soil tolerance – Rainfall events tend to produce higher volumes than historical averages.
Disease pressure – Plant stress has increased with the rise of daytime temperatures
Wildlife concerns – Deer, rabbits, voles, resident geese, and others can destroy fragile crops.
Yield swings – How predictable will the income be when this crop goes to market?
Harvest ability – Do we need plans B & C if adverse conditions affect the harvest?
Field loss – How much will be left in the field and can we monetize field loss?
Market demand – Does this crop have an elastic delivery window and are there timing penalties?
Profitability – Is there potential for higher margins needed for a shrinking land base?
Soil regeneration – Does this crop support the next crop?
Residue value – What remains after the target crop? Can we monetize the residue?
Storability – How long can we hold this crop? Will quality be challenging to maintain?

SORGHUM