

More Forage Sorghum Grown



by **TROY SMITH,**
field editor

In recent years, conversion to corn has claimed considerable acreage previously devoted to forage production, and hay yields on remaining acres were severely reduced due to widespread drought. According to the National Sorghum Producers, that has led to an increased interest in growing forage sorghum to cut as silage or hay, or for grazing. University of Nebraska Extension Forage Specialist Bruce Anderson says there has been new or renewed interest in forage sorghum and increases in acreage planted.

"I'm not sure if this will be sustained, however," says Anderson. "It will depend mostly on the relative economics of beef production versus grain production, which currently favors beef. Acreage could quickly revert to grain crops if and when this relative relationship shifts."

Anderson says the 2012 drought caused a need to quickly rebuild hay supplies in 2013 and prompted producers to ponder the benefits of water-efficient crops, including forage sorghum. In 2014, after spring-planted crops were ruined by hail, replanting fields to forage sorghum or other summer annuals was a viable option for affected Nebraska producers.

Anderson also believes interest in forage sorghum has increased as a result of enhanced promotion of genetically improved varieties offering brown mid-rib (BMR), photoperiod-sensitive and brachytic-dwarf characteristics. Additionally, there is growing interest in using sorghum and other summer annual grasses as part of double-cropping or cover-crop strategies.

Silage option

South Dakota State University Forage Specialist Karla Hernandez reports increased interest in forage sorghum as a silage crop. Because it is fast-growing and bred for a high leaf-to-stem ratio, Hernandez calls forage sorghum well-suited to the production of silage — particularly in dryland and limited irrigation situations. Thanks to its larger root system, production of forage sorghum silage requires a third less water than corn silage. The seed cost is significantly lower than that of corn.

"Depending on the variety chosen, it reaches heights of 6 to 12 feet and can produce a considerable amount of dry-matter tonnage. The nutrient content is pretty decent, too," says Hernandez, calling forage sorghum competitive with corn for both yield and nutrient value.

However, a reputation for lower nutrient value relative to corn silage persists. It's based on the perception that grain content contributes significantly to the nutrition silage offers. However, Dale Strickler, an agronomist for Osborn,

Kan.,-based Star Seed Inc., says the leaves and stalks of BMR forage sorghum varieties contain lower concentrations of lignin than do traditional varieties. Lower lignin concentrations mean fiber digestibility is improved, thus increasing the availability of nutrients.

"Nutritionally, energy levels compare with corn silage, especially when forage sorghum is put up by the soft-dough stage. Protein often is a little higher (than for corn silage)," says Strickler. "Typically, yields for forage sorghum are superior to corn silage, unless you're in a 200-bushel (per acre) corn environment."

Hay option

Forage sorghum can produce a high-yielding, nutritious hay crop. However, limited potential for regrowth and large, juicy stems, which hinder dry-down, pose challenges to hay-making. The more rapid regrowth and smaller stems of forage sorghum-Sudan grass hybrids often make them preferable for haying and grazing. However, Strickler does graze dwarf forage-sorghum varieties on

his own operation, near Cortland, Kan.

Bred to express the brachytic-dwarf genetic trait, these varieties have shorter stalk internodes, resulting in compact, leafy plants 4 ft. to 5 ft. in height. In Strickler's experience, these varieties yield more under grazing and exhibit relatively fast regrowth.

"You still have the potential for prussic-acid poisoning, especially around the time of frost, but that can be managed," says Strickler. "I recommend dividing a field into three or four paddocks to use rotational grazing. I start grazing when the plants are 24 inches tall and pull cattle when the plants are grazed down to 12 inches. I don't return (to a previously grazed paddock) until plants have regrown to a height of at least 18 inches."

While the potential for nitrate poisoning also exists, Strickler says that seems to be less of an issue with dwarf varieties. He also recommends proper attention to soil fertility. While excessive nitrogen fertilization is often cited as a contributor to nitrate problems, Strickler says sulfur deficiency also appears to be related.

Strickler isn't surprised that more producers are interested in forage sorghum. He calls it a water-efficient crop that typically requires only moderate fertilization. It's cheaper to plant, too. Seed costs ranging from \$10 to \$20 per acre, compared to roughly \$100 per acre for corn seed, make forage sorghum a forage crop worth consideration.

Genetic advancements in forage sorghum

- Selection for the brown mid-rib trait in forages produced varieties with 25% to 60% reduction in indigestible lignin content within the plant cells. Reduced lignin allows for increased digestibility of nutrients and higher palatability.
- Genetically altered photoperiod sensitivity has resulted in forage varieties that remain in a vegetative stage until daily exposure to sunlight is reduced (to 12 hours and 20 minutes for sorghum). The plants grow more leaf material before producing a seed head roughly four weeks later than traditional varieties.
- Genetic selection for the brachytic-dwarf trait resulted in sorghum varieties with shortened intermodal stalk length. Plants exhibit greater leaf-to-stem ratio.

Editor's Note: Troy Smith is a cattleman and freelance writer from Sargent, Neb.