Sorghum forages integral to livestock systems

Sorghum forages are an integral part of livestock systems in New Mexico and other semiarid subtropical environments.

Currently, three types of annual sorghum forages are available. Forage sorghum is typically planted as a row crop and harvested for single-cut silage, but occasionally it is drilled in closer rows and harvested for multiple-cut hay even though regrowth usually isn't very good.

Sorghum-sudangrass hybrids (haygrazer), are usually planted in closer rows and harvested in multiple-cut systems for hay because they do have good regrowth. A 'special' class of sorghum-sudans includes very late maturing

and photoperiod sensitive varieties such that they remain vegetative until day length drops below about 12-1/2 hours, which happens after late September in most of New Mexico.

While sorghum forages are very drought and heat tolerant, irrigation is necessary to maximize yields in semiarid regions. Water for irrigation has become limiting in many areas however, so two studies were conducted recently at New Mexico State University's Agricultural Science Center at Tucumcari to evaluate sorghum forage options under limited irrigation and rainfed conditions in New Mexico.

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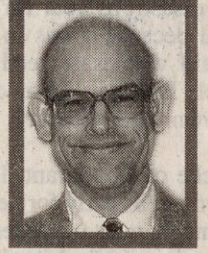

By Leonard Lauriault

In the first study, annual dry matter yields of furrow-irrigated sorghum forage types, all drilled for hay, were compared from two years each of full irrigation (24 inches of irrigation plus 13 inches May to October precipitation with two harvests), limited irrigation (12 inches of irrigation plus 13 inches May to October precipitation, also with two harvests), and rainfed (11 inches May to October precipitation, with one harvest).

Conventional and photoperiod sensitive sorghum-sudan hybrids out-yielded forage sorghums under irrigation, but 25 inches of applied water (irrigation plus precipitation), produced yields that equaled 37 inches of applied water. Yield of all sorghum forages was greatly reduced when no water was available for irrigation.

Forage sorghum and photoperiod sensitive sorghum-sudan hybrid yields tended to yield more than conventional sorghum-sudan hybrids in rainfed years when July and September precipitation was sufficient.

July and September precipitation appeared to have the greatest influence on productivity in each year without regard to irrigation status.

In the second study, a forage sorghum was compared to a photoperiod sensitive sorghum-sudangrass in a single-cut system with four planting dates. The planting dates ranged from that typical of an irrigated sorghum-udangrass in mid- to late May to mid-July, typical of what a dryland grain sorghum producer might do as they waited for soil moisture.

Similarly with the study already discussed, the rainfed forage sorghum yielded as much as a ton/acre less than the photoperiod sensitive sorghum-sudangrass in the mid-May to mid-June plantings. Waiting past mid-

June to plant any sorghum forage in rainfed systems leads to a considerable yield reduction, likely because the time is too limited for vegetative growth. Although the yield reduction is greater for the photoperiod

sensitive types, there is evidence to suggest that they will still yield more than the conventional forage sorghum if planted in late June.

In conclusion, while conventional sorghum-sudangrass hybrids had high yields under irrigation and the forage sorghums had high yields (relatively) in rainfed conditions, the photoperiod sensitive types offer the greatest flexibility across irrigation status as well as harvest timing, especially in regard to avoid stress situations that lead to high nitrate levels. Additionally, planting needs to take place before mid-June to maximize yields.

In any case, variety selection is critical to increase the chances of harvesting the most possible hay, whatever class of sorghum forage is chosen.

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