Good crops possible even with little rain

Farmers in eastern New Mexico have received little or no precipitation since fall of 2010. In addition, irrigation quantity and seasonal availability are becoming severely limited in the region with each passing year.

Consequently, local dryland farmers are facing a no-plant situation for grain crops and irrigated farmers are not sure if seasonal rains will be enough to offset water shortages in marginal irrigation situations. Some are even considering abandoning crops already planted.

AG SENSE

By Mark Marsalis

Still, even when there is limited precipitation in early spring, there is a good chance that summer rains in the region will provide at least some benefit to thirsty crops. Weather patterns in our area typically produce the greatest precipitation in July and August, which with a late planting, would coincide with early crop growth.

Rapidly growing late-planted forage crops offer an opportunity to take advantage of delayed rainfall scenarios when early planting is not an option or when crop disasters occur. A number of crops are capable of producing a harvestable yield within 100 days or less, but forage crops can be harvested prior to physiological maturity, thus lessening the risk of harvest losses associated with an early killing frost.

In addition, most farms in the area have combinations of crops and beef cattle, and the dairies in the surrounding areas of eastern New Mexico and West Texas purchase large quantities of forages.

A project to evaluate late-planted, short-season annual forage crops for adaptability and yield potential was initiated in 2010 at New Mexico State University's Agricultural Science Center at Tucumcari.

The criteria for selecting crops for inclusion in the trial included the following: Selected crops would be annual forages that have demonstrated potential to produce marketable yield in 100 days or less; they need to be productive with limited irrigation and other inputs; they must be compatible with the equipment base currently used by local farmers; and a marketing outlet must be available within 100 miles.

Millets and sorghums comprised the majority of the forage entries selected for the test. Seed for all entries was commercially available. Due to varietal diversity in sorghum forage types, the test included different forage sorghum genotypes: a brown mid-rib (BMR), pho\toperiod sensitive variety; and a non-BMR, non-photoperiod sensitive variety.

Other crops included a photoperiod sensitive sorghum x sudangrass, teff as potential horse quality grass hay, oats and buckwheat. Annual legumes that had shown potential for use, based on previous research at the science center (cowpea, lablab, and soybean), and Korean lespedeza were sown with pearl millet to assess the effects of adding a legume on forage quantity and quality.

The study was planted July 1, 2010 and fertilized adequately so that no nutrients were limiting. Applied water (15.6" irrigation + 5.5" precipitation) totaled 21.1 inches. The entire test was swathed on October 6, 2010 – 97 days after planting – as a single-cut hay harvest and baling took place, by species, based on curing time. Bales were weighed by plot and hay core samples were collected for nutritive value analysis.

Sorghum x sudangrass was the most productive entry. However, its yield was similar to the forage sorghums and pearl millet. All other entries had significantly lower yield than the sorghums and pearl millet as a group.

Nutritive value of all entries was within the expected range for warm-season annual forage grasses. Many of the lower yielding entries had greater nutritive value than the higher yielding entries, but the reduced economic return from the lower yields would likely not be offset by the increased economic value that should result from the higher nutritive value.

Establishing pearl millet with legumes did not significantly increase yield or nutritive value. While pearl millet did not produce the highest forage yield or the highest forage quality, it did produce the best combination of yield and high quality.

Study results indicate multiple annual forage crops offer potential for producing hay in late-planted, water-limited situations in the region. Sorghum x sudangrass and forage sorghums, which are the traditional crops for hay and silage production, were among the most productive entries.

However, pearl millet, which is not widely grown in the region, provided the best combination of forage yield and quality.

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