Managing Native Grass Forages

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Early Studies on Native Grass Forages – a Tribute to some Pioneers

I have often presented results from research on native grass forages conducted here at UT. Although we have done a good deal of work in this area, there have been several forage researchers who helped blaze the trial. One of these was Gerry Jung (pronounced, 'Young') who worked at Penn State. During the 1970s and 1980s, Dr. Jung conducted several studies evaluating native grass forages.

One study he and his co-workers conducted examined native grass performance on extremely phosphorous (P) deficient soils. They found that switchgrass and indiangrass both outperformed big and little bluestem, tall fescue, and orchardgrass. Collectively, the natives produced approximately 3 times more forage on these low fertility soils than cool-season grasses. The yields for natives on low and P-amended soils were similar, whereas those for the two cool-season species increased by about 35% with the increased P-levels. Their results affirmed native grasses' ability to do well on low-nutrient soils.

In another study, Dr. Jung and his associates did some of the early work in conservation tillage establishment of switchgrass. They found that planting method was less important than variety (some have high dormancy) and good weed control. They recommended planting dates between early May and mid-June, which would be earlier here in Tennessee (late April to early June) than their central Pennsylvania study sites. Today in Tennessee, we continue to focus on low-dormancy varieties, similar early planting dates, and excellent weed control for reliable switchgrass establishment. Here at UT, we also have found that we can reliably plant even earlier, during the dormant-season – and that late plantings (up until early July) can be effective when moisture is adequate.

Dr. Jung and his co-workers also conducted a grazing and hay harvest study between 1975 and 1979. They found that big bluestem and switchgrass held-up well to rotational grazing by maintaining adequate residual heights (always critical with native grasses). They made no soil amendments (pH 5.3) for the first four years of their study, which included two years of grazing. Even at that, they saw pastures producing 3-4 tons of forage per acre that sustained stocking rates as much as 4 times greater than adjacent cool-season pastures. As we have also learned here at UT, they emphasized the importance of aggressive grazing management early in the season to keep plants from becoming over-mature and dropping in quality. They were also one of the first to report the under-estimate of animal performance for warm-season forages based on traditional lab tests of forage quality. In their study, test underestimated digestibility by 18-30% compared to what was actually observed with animals. Based on their research, they concluded that warm-season natives could be an excellent complement to cool-season grass-dominated forage systems in their region.

It is interesting to see that under very different conditions and nearly three decades later, we often see similar results from our research on native grass forages. It is also interesting to see that a highly respected forage agronomist like Dr. Jung reached some of the same conclusions that we have about the potential of native grasses for providing a summer complement to cool-season dominated production systems. We all owe dedicated pioneers like Gerry a debt of gratitude for their vison, hard work, and contributions to forage science in this area – and in many others. Thanks Gerry!