Grazing Summer Cover Crops

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When we think of warm season annual forage crops the summer annual grasses such as pearlmillet (*Pennisetum glaucum*) and sorghum sudan (*Sorghum bicolor*) quickly come to mind. Often warm season annual forages are thought of as an emergency source of hay for their ability to produce a lot of forage quickly during periods of dry weather when other forage sources are limited. However, they are much more versatile than just providing a quick hay or silage crop.

Recently, there has been lots of interest in using cover crops in cropping systems to provide agronomic benefits of adding soil organic material, soil cover, wind and water erosion control, increasing soil microbial diversity, and weed suppression among others. Now producers have found that the cover-crop benefits can be maintained when cover crops are grazed by livestock, providing some direct economic benefit along with the benefits to the cropping enterprise.

Thanks to emphasis placed on cover crops and soil health, warm-season annuals' role in forage systems have expanded beyond hay and silage and now include providing opportunities for grazing high quality forages during the summer. The species considered for use as forage crops during the summer has also broadened beyond the traditional sorghums and millets to include diverse mixtures of legumes, grasses, and broadleaf species. Cover crops can be as simple as a single species or more complex multiple species blends including 10 to 12 species, selected for their agronomic benefits with little regard for forage production attributes.

The rule of thumb is to start grazing sorghums, sudans, and millets at around 30 inches in height and leave a residual height of 6 to 10 inches.

Sorghum sudan hybrids are very popular due to the amount of forage that they can produce in a short period of time are very palatable and can promote high rates of gain of growing calves.

Prussic acid can be an issue with any of the sudan or sorghum species. It can build up any time the plant has undergone a period of stress. Common plant stresses that can induce buildup include drought, frost and herbicide application. It is generally best to avoid grazing 14 days after any stress period. Another potential issue with grazing or stored forage is nitrate accumulation, which occurs when a plant takes up nitrogen during a period of rapid growth followed by a period of little to no growth. This accumulation of nitrate is generally in the base of the stem of the plant. If nitrate accumulation is suspected, testing is recommended. Millets do not accumulate prussic acid but can accumulate nitrates that are a concern with grazing and hay.

Research from the Noble Research Institute looked at summer cover crop grazing between wheat graze out and wheat planting for early fall pasture. In order to meet wheat cropping goals use of the cover crop for grazing was limited to only during July and August. Even though gains were quite good their research indicates that the short period of use of summer grazing crops between wheat crops limited profitability.

Plantings of warm season annual grasses can be staggered in order to provide a steady flow of forage through the summer and avoid an overabundance of forage at one point and time. They

can also be creatively utilized. An example might be a late summer planting to provide quality forage to start stocker cattle on prior to the development of a cool season annual forage crop such as wheat. Another variation could be to use warm season annuals to further develop stocker cattle on forage following winter pasture graze out or as a source of creep grazing for calves.

The following pictures show the ability of warm-season annual plantings outside of the 'normal' planting window to fill gaps in quality forage availability. Following an unusually dry early summer in central Oklahoma, over 15 inches of rainfall was accumulated between mid-July and mid-August. Pearl millet or a multispecies summer cover crop blend (sorghum-sudan, millet, cowpeas, mungbeans, and okra) were no-till planted in a central Oklahoma demonstration in early August and allowed to accumulate 24 to 30 inches of top growth before grazing in mid-September.

A. B.

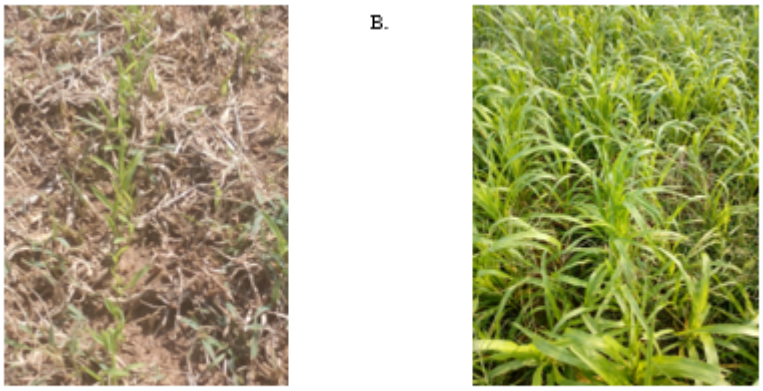

Figure 1. BMR Pearl Millet planted in early August. A. 10-days after planting and B. 40 days after planting

There is not a lot of information on the forage and grazing characteristics of many of the components of cover-crop blends. The species in these blends are included for their agronomic benefits, but many appear to be productive and surprisingly palatable.

In a demonstration conducted in central Oklahoma, composite Dairy x Angus steers that had grazed crabgrass and warm-season perennial pastures from June to September, grazed no-till cover crops from September 10 to October 30 (Figure 2). These calves would be considered novice grazers with no previous exposure to any of the forages in these mixtures. Initial preference seemed to be for the BMR pearl millet, but soon transitioned to sorghum x sudangrasses. When broadleaf species (soybean, cowpea, mungbean, and okra) began to be utilized in early October it was soon fully grazed out. These lightweight calves gained 2 pounds per day.

A. B.

Figure 2. BMR Pearl Millet (A.) and cover crop blend (B.) planted in early August being grazed by Composite Dairy X Angus steers initial preference was for PM, but later broadleaf species were fully utilized > Sorghum x Sudangrass > PM

Warm season annual grasses are productive and well adapted to the region. They are also versatile in their use supplying emergency forage in dry weather conditions, a soil cover for fallow ground, quality grazing, and erosion control. As with any forage when grazed, stocking rate greatly influences both plant and animal performance. Warm season annual grasses fit well and have their place in forage systems, but profitability of this as a stand-alone enterprise require their season long use which may interfere with planting wheat for early fall pasture.