



OKLAHOMA FORAGES NEWSLETTER



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BOOKMARKS

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We welcome contributions and suggestions. Comments about and contributions to the Oklahoma Forages Newsletter and/or our web sites are welcome and should be submitted to john.caddel@okstate.edu or daren.redfearn@okstate.edu

Everyone interested in forages is welcome to receive and contribute to the Oklahoma Forages Newsletter.

Warm-Season Forages

The recent rainfall has resulted in a moderate amount of forage growth on summer pastures. However, the dry period this past fall and winter exhausted much of the hay supply. Forage managers who were depending on winter pasture growth for hay production have had little opportunity to produce much hay because of the continued dry conditions. Planting summer annual forages to recover some of the unused inputs, such as fertilizer, may help alleviate some of the lost hay production. There are several summer annual forages that have the ability to produce a moderate yield during a short growth period, are somewhat tolerant of droughty conditions, and more importantly, can be easily incorporated back into the soil prior to winter pasture establishment.

The most common summer annual forages are forage sorghum, sudangrass, and sorghum x sudangrass hybrids because of their potential to produce high forage yields. A few items on the downside for these forages are that they use a lot of water and continue to regrow until killed by freezes, herbicides, or tillage. These forages may accumulate nitrates, causing nitrate toxicity, and they can also have prussic acid when they regrow after stresses such as drought or freezes.

Other summer annual forages that have the potential to provide moderate forage yields are crabgrass, German millet, cowpea, and mungbean. At this point, the latter group likely has the most potential for forage production due to the continued dry conditions that are persisting across the southern Great Plains.

Annual Warm-season Forage Grasses

Crabgrass is a warm-season annual forage grass that is also a weed in lawns and in row-crop fields. This species, originally from southern Africa, can be planted at 3 to 4 pounds per acre and has potential to provide some forage growth through September. Under favorable conditions of adequate moisture and nitrogen, forage yields of 4000 to 8000 pounds per acre are common. This year, forage yields will likely only range from 1500 to 3000 pounds per acre due to the dry conditions. It can be either grazed or harvested as hay, but it is usually difficult to cure as a hay crop when yields are high. See Figures 1, 2, & 3.



Figure 1. A single crabgrass plant with several seedheads and several stems that may root at the nodes.



Figure 2. A single crabgrass seedhead with six racemes (branches).



Figure 3. A solid stand of crabgrass in seed production stage of growth. It appears to be a mass of seedheads, illustrating the high seed production potential of crabgrass.

German millet, also called **foxtail millet**, is another annual warm-season grass that matures rather quickly during the summer. This millet is originally from Asia. It can produce up to two tons of forage per acre when properly fertilized. However, it will produce only a single hay harvest. It can be broadcast-seeded at 30 pounds of seed per acre or drill-planted at 20 pounds of seed per acre. When broadcast, it is best to lightly harrow after planting to cover the seed. Planting should be completed by mid-June with harvest occurring just after emergence of the seedheads. German millet has small crowns and can be used before no-till establishment of many fall-planted species, including alfalfa or wheat. Figures 4, 5, & 6 show various views of German millet.



Figure 4. German millet or foxtail millet in early seed head stage of growth with many green leaves remaining.



Figure 5. German millet hay drying in windrows



Figure 6. A seedhead of millet has several hundred flowers and potential seeds.

Annual Warm-season Legumes

Cowpea is a species that was introduced from Ethiopia. It also referred to as **iron pea, clay pea, and southern pea**, is an annual legume that can produce as much as 4000 pounds of forage per acre under favorable growing conditions. The majority of growth and production occurs from June through August. To optimize forage production, cowpea should be drill-planted at approximately 50 pounds of seed per acre and inoculated with the appropriate strain of *Rhizobium*. It will produce only a single hay harvest. Because it has little or no regrowth after haying or grazing, no-till establishment of wheat or alfalfa is normally possible. Figures 7, 8, & 9 illustrate cowpea.



Figure 7. A field of cowpea planted as a cover crop after wheat was harvested for grain.



Figure 8. Close up of cowpea leaves.



Figure 9. Cowpea plants showing crinkled leaves.



Figure 10. Mungbean interseeded into wheat for grain stubble.



Figure 11. Mungbean in a mature growth stage, well past the ideal time for high-quality forage.

More **mungbean**, another species from Asia, is grown in Oklahoma than any other state, mostly for the production of bean sprouts, but this species, like many other legumes can be used as a good forage. Planting dates for mungbean are between mid May through June. Mungbean should be drill-planted at approximately 25 pounds of seed per acre and inoculated with the appropriate strain of *Rhizobium*. In soils with dry surface layers, planting depth can be increased up to 1 ½ inches if the soil surface does not easily crust. Like most summer crops, forage yield is entirely dependent on moisture with forage yields ranging from one to two tons per acre. Similar to cowpea, it will also produce only a single hay harvest. Figures 10 & 11 are views of mungbean in the field.

Don't waste moisture; if possible consider no-till establishment: Any summer annual forage crop you are considering will deplete any moisture received this summer. Tillage, including seedbed development, is a cause of loss of soil moisture. So, when possible apply the needed P and/or K fertilizer and lime for two or three crops in succession and plant into the preceding crop without tillage to conserve moisture and nitrogen.

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Have you read something that helped your forage production and want to share it with the readers of Oklahoma Forages Newsletter?

Send comments, questions, or articles you have seen and want to share to Daren Redfearn daren.redfearn@okstate.edu To remain anonymous, just let us know.

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