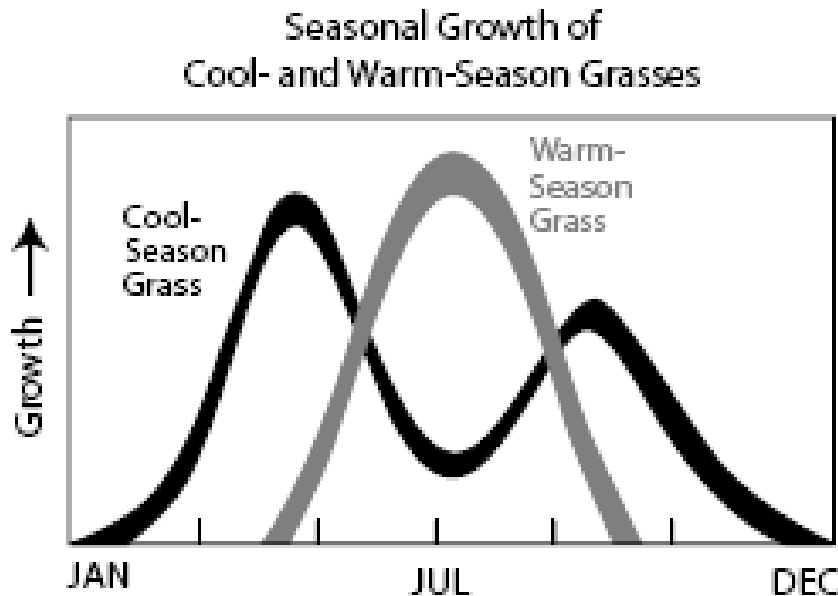


Options for Summer Grazing

Dr. David C. Ditsch
Extension Agronomy Specialist
Department of Plant and Soil Sciences
UK Robinson Station



Summer is the time during the growing season when shortages of forage most often occur in Kentucky. The summer of 2007 will long be remembered as one the warmest and driest in recent years and cause many livestock producers to evaluate their current forage systems. Most Kentucky pastures are predominately cool-season grasses such as tall fescue, orchardgrass and bluegrass. During the historically hot, dry periods in July and August, these species produce very little growth and can quickly become overgrazed. At this point, some producers have no alternative except to buy feed or begin feeding stored forage intended for winter feeding. According to Ag Economist, grazing is the cheapest way to feed livestock and the difference between profit and loss in the livestock business can usually be related back to the producer's ability to grow his own feed.

Advanced planning can help reduce the risk of a forage shortage during the summer months. Some practices to consider are:

- Tailor herd size to expected forage production.
- Renovate pastures with a legume to increase production and quality.
- Follow a good soil testing and fertilizer program.
- Practice rotational grazing.
- Establish alfalfa for summer grazing.
- Establish warm-season grasses and legumes.
- Establish summer annual forage species.
- Use corn as a grazing crop.

Alfalfa for Summer Grazing

The deep root system of alfalfa (*Medicago sativa*) makes it more drought tolerant than cool-season legumes and grasses. Although alfalfa does not make maximum growth during summer drought, it usually provides good summer pasture. With proper grazing management, alfalfa's high yield potential can be converted to high levels of animal production per acre.

Significant advances have been made in the development of alfalfa varieties that are more tolerant of grazing conditions. Alfalfa varieties selected under grazing pressure will better tolerate hoof traffic and allow more flexible grazing schedules than hay-types while maintaining thicker stands. Alfalfa must be grazed on a rotational basis. This will require that fields be subdivided so that cattle are restricted to one paddock for a time, then moved to another paddock. General recommendations are to graze a paddock for one week and allow four to six weeks for a rest or recovery period.

The following suggestions will reduce the potential for bloat when grazing alfalfa:

- Grow grass with alfalfa
- Provide grass hay or grain during the first week or two of grazing alfalfa
- Feed Rumensin®
- Feed bloat-preventing compounds
- Do not turn hungry cattle into alfalfa when plants are wet from dew
- Do not graze immature alfalfa
- Provide salt and minerals
- Do not graze alfalfa for three days following a killing frost (below 24°F).

Warm-Season Perennial Grasses

In contrast to the cool-season grasses, warm-season grasses grow best in late spring and summer. They can be grazed during summer when cool-season grass pastures are less productive. Including up to 25% of the forage acreage as a warm-

season perennial grass may reduce the risk of a pasture shortage in July and August. It may also permit resting of cool-season pastures when they are stressed.

Switchgrass (*Panicum virgatum*) is a tall growing (3 to 9 feet), wide-leaved grass that produces short rhizomes. The seed are relatively large and smooth so they will flow through most drills. Switchgrass becomes quite stemmy as it matures so it needs to be grazed before seed heads emerge for good quality forage. Varieties such as Cave-in-Rock and Blackwell are shorter and better adapted to well drained (even droughty) soils on side slopes and ridge tops. Properly managed switchgrass should be rotationally grazed leaving at least 6 inches of stubble.

Eastern gamagrass (*Tripsacum dactyloides*) is a bunchgrass that produces short thick rhizomes near the soil surface. Leaves of gamagrass emerge from the base and may reach a length of 3 feet. The seed are large, enclosed in a cylindrical seed coat and tend to be very dormant. Seed treatments such as wet-chilling increase seed germination. Eastern gamagrass is best adapted to deep well-drained soils but can withstand short periods of flooding. Rotational grazing and leaving a 6 inch stubble height will extend the life of the stand.

Big bluestem (*Andropogon gerardii*) is a tall growing (6 to 8 feet), stemmy bunchgrass that provides excellent wildlife habitat. Big bluestem is more drought tolerant than eastern gamagrass and switchgrass but dry matter yield is usually lower. Specially modified drills are necessary for seeding big bluestem. Establishment can be slow. Must be rotationally grazed.

Indiangrass (*Sorghastrum nutans*) is also a tall growing bunchgrass similar to big bluestem. It produces more of it's growth later in the summer. It is very drought tolerant and can be grown on steeper, shallower soils.

Bermudagrass [*Cynodon dactylon* (L.) Pers] is a sod forming forage species that spreads by rhizomes, stolons and seed. It makes its best growth at 80-90°F. and is extremely drought, grazing and traffic tolerant. Bermudagrass is a high yielding (5-7 tons d.m./ac) forage that responds to high levels of nitrogen fertilization (250 lbs N/ac). When using bermudagrass as far north as Kentucky, the potential for winterkill always exists and only the most winter-hardy varieties should be considered.

Warm-Season Perennial Legumes

Sericea Lespedeza (*L. cuneata*) is the only perennial warm-season legume used for livestock forage in Kentucky. It is extremely drought resistant and well adapted to shallow, low fertility soils. Because of its low seedling vigor, sericea lespedeza should be established before overseeding with other grasses. It is naturally high in tannin, which is a component of some forages that can cause poor acceptance in ruminants (Serala, AU Lotan, AU Donnely are reduced tannin varieties). Sericea is best suited to steep terrain pastures where establishment and management of other forage species is limited.

Summer Annual Grasses

Sudangrass and sudangrass hybrids are rapidly growing annual grasses of the sorghum family. They are medium yielding and re-grow quickly after harvest.

Sorghum x Sudangrass hybrids (*Sorghum bicolor*) are more vigorous and higher yielding than sudangrass. They are more likely to contain toxic levels of prussic acid and nitrates during environmentally stressful periods. They produce large stems and are difficult to cure as hay. Brown midrib types have less lignin increasing palatability and digestibility.

Millets are small seeded, fast growing summer annual grasses. They have smaller stems and are more leafy than the sorghum-type plants. The millets do not have a problem with prussic acid poisoning. **Pear millet** (*Pennisetum glaucum*) is higher yielding than **foxtail millet** and will re-grow after harvest if a five-inch stubble height is left. **Foxtail millet** (German Millet) is shorter and finer stemmed. It will not re-grow to produce another harvest.

* Horses should **NOT** be allowed to graze sorghum or sorghum cross plants. An unidentified toxin in sorghum, apparently more common in hybrid strains, occasionally causes spinal cord degeneration and paralysis in horses.

Teff, [*Eragrostis tef*. (Zucc.) Trotter], also known as “summer love grass or annual love grass”, is a warm season annual grass native to Ethiopia. It is adapted to environments ranging from drought-stressed to water logged soil conditions. It germinates quickly and can be ready for first harvest in 50-55 days. Teff can grow over 4 feet tall and produce more than 6 tons per acre. Teff is new to Kentucky and currently being evaluated by the University of Kentucky College of Agriculture.

Corn (*Zea mays*) is not a traditional grazing crop in Kentucky but results from several on-farm trials suggest that corn is a versatile crop that can be green-grazed as a rescue forage or late season grazed to extend the grazing season.

***Nitrates**. Under certain summer conditions such as high nitrogen fertilization, drought or sudden weather changes, forage plants (including corn) can accumulate high levels of nitrates. When eaten, nitrates are converted to nitrites and are directly absorbed from the digestive tract. The absorbed nitrites combine with hemoglobin of the red blood cells to produce methemoglobin, a form incapable of transporting oxygen.

Related publications from the University of Kentucky Cooperative Extension Service

Producing Summer Annual Grasses for Emergency or Supplemental Forage ... AGR-88
Native Warm-Season Perennial Grasses for Forage in Kentucky AGR-145
Grazing Alfalfa ID-97
*2006 Alfalfa Grazing Tolerance Report....*PR 546

Grazing Corn: An Option for Extending the Grazing Season in Kentucky ID-152
Bermudagrass: A Summer Forage in Kentucky AGR-48
Growing Lespedeza in Kentucky AGR-86
Lime and Fertilizer Recommendations AGR-1
Planning Fencing Systems for Intensive Grazing Management ID-74
Rotational Grazing ID-143

Species	Seeding Dates	Seeding Rates	Grazing Considerations
Alfalfa	Mar 1-Apr 15 Aug 1-Sept 15	15-20 lbs /ac	Rotational grazing required. Graze close to stimulate regrowth from crown. Use grazing tolerant variety. Prevent cattle bloat.
Switchgrass	May 15-Jun 15	8-10 lbs PLS/ac	Rotational grazing required. Leave 6-8 inch stubble.
Eastern gamagrass	May 15-Jun 15	8 lbs PLS/ac	Rotational grazing required. Leave 6-8 inch stubble.
Big bluestem	May 15-Jun 15	10 lbs PLS/ac	Rotational grazing required. Leave 6-8 inch stubble.
Indiangrass	May 15-Jun 15	10 lbs PLS/ac	Rotational grazing required.
Bermudagrass	Apr 15-Jun 15	Sprigs 30-50 bu/ac Seed 8 lbs/ac	Tolerant of continuous grazing. Responses to N fertilization. Choose winter hardy variety.
Sericea Lespedeza	Mar 15-May 15	30-35 lbs/ac (scarified)	Rotational grazing required. Leave 6 inch stubble. Best suited for steep terrain.
Sorghum x sudangrass hybrids	May 10-Aug 1	20-40 lbs/ac	Rotational grazing required. Leave 6 inch stubble. Prussic acid and nitrate poisoning possible. Responses to N fertilization.
Pearl Millet	May 1-Aug 1	15-20 lbs/ac	Rotational grazing required. Nitrate poisoning possible.
Foxtail Millet	May 1-Aug 1	20-30 lbs/ac	Use as emergency pasture.
Teff	May 1-Aug 1	6 lbs/ac	Rotational grazing required. Leave 3-4 inch stubble.
Corn	Apr 15-May 15	24,000 seeds/ac	Strip grazing recommended. Nitrate poisoning possible