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Bermudagrass: A Summer Forage in Kentucky

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Climatically, Kentucky lies within a transition zone, where extreme temperatures and variations in rainfall occur. Cool-season grasses, such as tall fescue (*Festuca arunidinacea*), orchardgrass (*Dactylis glomerata*), Kentucky bluegrass (*Poa pratensis*), and timothy (*Phleum pretense*) are well adapted to this zone. However, forage productivity and quality of these species typically reach seasonal lows in the midsummer months, when cool-season grasses grow more slowly.

Bermudagrass [*Cynodon dactylon* (L.) Pers] can be used successfully as part of a livestock forage program to supplement summer production of cool-season grasses.

It is high-yielding, sod-forming, warm-season perennial grass that is most productive on well-drained, fertile soils. Bermudagrass is widely grown in the southern United States for pasture and hay.

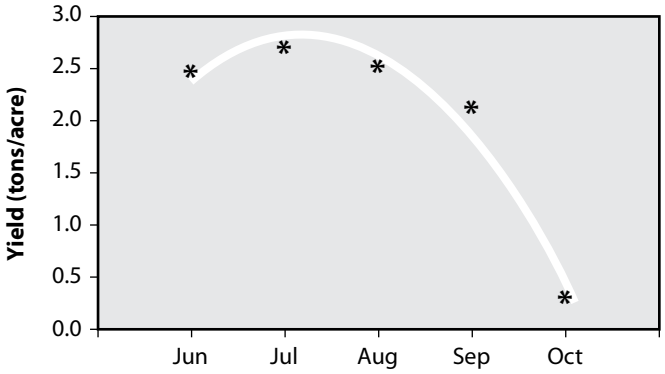
Like other warm-season plants, bermudagrass makes its best growth at 80-90° F. Growth is very slow when temperatures are below 60° F and also tends to decline above 95° F. In most years, bermudagrass growth starts in late April and continues rapidly until mid-September, when it is limited by cooling temperatures. Thus, bermudagrass is very productive during June, July, and August (Figure 1).

Wise use of cool-season perennial grasses and legumes in combination with bermudagrass can help extend the grazing season and reduce the demand on winter feed supplies. However, the potential for winterkill always exists for bermudagrass in Kentucky, so consider only the most winter-hardy varieties. In Kentucky, planting dates should be targeted for early May through mid-June if irrigation is not available.

Establishment by Sprigging

Bermudagrass varieties suitable for Kentucky's environment can be established from sprigs or seed. Stands established by sprigging involve the spreading and incorporation of rhizomes and stolon pieces of bermudagrass plants into a prepared seedbed or the direct planting of these plant parts with specialized sprig-planting equipment. Bermudagrass varieties that require establishment by sprigging do not produce viable seed.

Figure 1. Average yield pattern (hay equivalent at 13% moisture) of Tifton-44 bermudagrass during 1983-1988 at the UK Robinson Substation in Breathitt County, Kentucky.



For best results, use only fresh, moist, healthy sprigs that have been grown under a good fertility program. When a mechanical sprig digger is not available, sprigs may be obtained by cross-cutting bermudagrass sod with a heavy disk or field cultivator, then using a side-delivery rake to collect the sprigs in windrows. Sprigs are best planted the day they are collected, but if planting is delayed, they should be kept moist, cool, and in the shade to ensure survivability (Table 1). If the soil is extremely dry, prepare the site but wait for a rain before sprigging. In a dry soil, the number of live sprigs can drop 50% or more in the first two days after sprigging.

Table 1. Effect of exposure (time between digging and planting) and time of day on survival of stored bermudagrass sprigs.

Exposure Period	Time of Day	Condition	Percent Live Sprigs
None			100
8 hrs.	9 a.m. to 5 p.m.	shaded and moist	100
2 hrs.	9 a.m. to 11 a.m.	exposed	94
4 hrs.	9 a.m. to 1 p.m.		72
2 hrs.	Noon to 2 p.m.		30
4 hrs.	Noon to 4 p.m.		3

Source: Texas A & M University.

At least 20 bushels of sprigs per acre is recommended when bermudagrass is planted with a commercial sprigging machine. (A bushel normally contains about 1,000 sprigs and is approximately equivalent to 1 square yard of bermudagrass sod.) For faster coverage or when using a broadcast sprigging method that leaves many sprigs in poor contact with the soil, 40-80 bushels of sprigs per acre is recommended. Mature top growth (clippings) can be used to establish stands of some varieties, provided growing conditions are favorable. Regardless of establishment method, it is very important to firm the soil around the sprigs to improve soil contact, retain soil moisture, and improve sprig survival. Sprigs should not be covered with more than 1-2 inches of soil. Sprigs covered too deeply may not survive, especially on heavy clay soils that crust over after a rain.

Cultipacking after sprigging firms the soil around the sprigs and improves establishment success. Bermudagrass is not typically sprigged to a solid stand, so it takes most of the first growing season to achieve complete ground cover.

Establishment by Seeding

Seeded bermudagrass varieties are becoming more popular and offer another establishment option when sprigging is not feasible. One of the most important decisions is selection of an adapted variety. Producers should carefully research the varieties they're considering, as some seeded "varieties" are merely blends of varieties or common seed from other regions that may not be adapted to Kentucky's winter climate.

Bermudagrass can be seeded into a prepared seedbed or no-till planted into a killed sod. Kentucky producers have had more success on prepared seedbeds that have been worked to a fine, firm condition.

For the greatest success, whether seeding into a prepared seedbed or into a killed sod, use a well-calibrated seeder to dispense seed at the proper rate and place the seed at the appropriate seeding depth.

Bermudagrass should be seeded at the rate of 5-8 lb (hulled) per acre and planted no deeper than ¼" (ideally ⅛"). Before seeding into a prepared seedbed, cultipacking is important to firm the soil, because it improves the odds of uniformly placing the seed at the correct depth. On a properly prepared seedbed, footprints will leave only slight indentations.

Most drill-type seeders are designed to handle bermudagrass seed through their legume hopper. However, careful seeder calibration is necessary to ensure that the intended seeding rate and seeding depth are achieved. Additional seeding depth adjustments may also be necessary to prevent seeding too deeply, a common mistake.

A Brillion seeder is ideal for bermudagrass establishment, since it provides packing before and after seed distribution, ensuring a shallow planting depth. Even with a Brillion seeder, the use of a cultipacker before seeding is often necessary. Some producers use a seed drill with the hoses pulled out of the double disks to distribute seed on the surface. Broadcast seeding is another option, but bermudagrass is so small and light that it's hard to distribute it uniformly by broadcasting.

Cultipacking after seeding further ensures good contact of the seed with the soil.

Varieties

Extensive bermudagrass research programs have been under way in Georgia, Mississippi, Oklahoma, Virginia, and Tennessee for several years. New seeded and sprigged varieties are currently being evaluated in Kentucky for production, quality, and adaptability (Tables 2, 3, and 4). Producers are encouraged to check with their county agricultural agent for an updated list of varieties recommended for Kentucky. Make sure to plant only varieties that show dependable winter survival.

Table 2. Dry matter yield of seeded and sprigged bermudagrass varieties tested at the Southern Piedmont Research Station in eastern Virginia.

		2004	2005
Variety	**Description**	**lb dry matter/acre**	
Tifton 44	Sprigged	8,334*	14,387*
World Feeder	Sprigged	.	13,452*
Vaughn's #1	Sprigged	7,352*	13,022*
Midland 99	Sprigged	7,015	12,334
SunGrazer	Seeded	6,986	11,893
Cheyenne	Seeded	6,749	11,668
Quickstand	Sprigged	7,910*	11,149
Riata	Seeded	7,266*	10,403
Wrangler	Seeded	5,973	10,307
LSD (0.05)		1,185	1,834

NOTE: Varieties established in 2004.
SOURCE: C. Teutsch, Virginia Tech, personal communication.
*Not significantly different from the highest numerical value in the column, based on the 0.05 LSD.

Sprigged Varieties

Quickstand was not developed in a plant breeding program but was collected from surviving plants at the University of Kentucky Robinson Station by Harold Rice, PhD, and released by the University of Kentucky, USDA-Natural Resources Conservation Service, and USDA Agricultural Research Service (ARS). Quickstand is high yielding and displays vigorous stolon production. It has fine stems that cure fast when cut for hay. It is shorter than Tifton 44 and makes a dense sod. Quickstand has excellent cold tolerance and has never shown winterkill in Kentucky.

Table 3. Dry matter yield of seeded bermudagrass varieties tested at the Southern Piedmont Research Station in eastern Virginia.

Variety	Blend	2001	2002	2003	2004	2005	Average 2002-05	Tifton 44 (%)
		lb dry matter/acre						
Ranchero Frio	yes	6,774*	18,781*	15,288	17,547	15,718*	16,834*	114
Cheyenne	no	6,547*	19,144*	14,695	16,240	16,285*	16,591*	112
KF 194	no	5,492	15,461	17,250*	16,962	13,952	15,906*	107
Mirage	no	5,788	14,655	17,097*	16,078	15,655*	15,872*	107
Mohawk	no	4,902	14,752	17,739*	16,822	13,581	15,724	106
SunGrazer	yes	5,149	14,991	17,716*	17,111	12,560	15,595	105
Wrangler	no	3,695	13,643	18,801*	16,017	11,069	14,883	100
Guymon	no	3,757	12,849	16,859	16,284	12,018	14,502	98
Tifton 44	sprigs	0	9,274	15,650	17,818	16,545*	14,822	100
LSD (0.05)		970	2,098	1,812	ns	1,730	980	

NOTE: Varieties established in 2001.
SOURCE: C. Teutsch, Virginia Tech, personal communication.
*Not significantly different from the highest numerical value in the column, based on the 0.05 LSD.

Midland 99 is a hybrid bermudagrass released in 1999 by the Oklahoma, Arkansas, Kansas, and Missouri Agricultural Experiment Stations; the Samuel Roberts Noble Foundation; and the USDA-ARS. Midland 99 is similar to Tifton 44 in morphology and growth habit. It produces tall, upright growth with forage yields equal to or greater than that of Tifton 44. It has a cold tolerance greater than that of Tifton 44.

Tifton 44 was released in 1978 by Glenn W. Burton, PhD, at the University of Georgia. It is a hybrid cross between Coastal bermudagrass and a bermudagrass that originated from near Berlin, Germany. It is a fine-stemmed, more winter-hardy variety that has survived as far north as Michigan. It starts growth earlier in the spring than most bermudagrasses and is more resistant to leaf diseases than Midland. Tifton 44 is much slower to establish than Coastal or other hybrid bermudagrasses and cannot be established from culms or "clippings."

Vaughn's #1 was not developed in a plant breeding program but was found growing naturally by Terrell Vaughn, a farmer in White County, Tennessee. It appears to have good cold tolerance and establishes well with sprigs and clippings. In limited Kentucky field observations, Vaughn's #1 appears to green up earlier than Quickstand in the spring.

World Feeder was not developed in a plant breeding program but was found growing naturally in Oklahoma. It has been promoted across the Southeast as an extremely high-yielding variety. In controlled tests by David Ditsch, PhD, at the University of Kentucky Robinson Station, World Feeder was similar to other hybrid bermudagrass varieties tested. Disease susceptibility in Kentucky is currently unknown.

Tifton 85 was released in 1993 by Dr. Burton at the USDA-ARS Research Station in Tifton, Georgia, as a higher quality bermudagrass. It is now widely used in stocker operations and grazing dairies in the Deep South. It is taller, has larger stems, broader leaves, and a darker green color than Tifton 44. It establishes rapidly from sprigs or clippings. Tifton 85 does not have dependable cold tolerance in Kentucky and is therefore not recommended for the state.

Table 4. Dry matter yield, spring green-up, and stand persistence of seeded bermudagrass varieties sown in Lexington, Kentucky, in early June 2007.

	Spring Green-up[1]		Percent Stand		Dry Matter Yield (tons/acre)							
	2008		2007	2008	2007				2008			2-yr
Variety	Apr 30	May 14	Oct 12	Oct 21	Aug 8	Sep 17	Nov 1	Total	Jul 3	Aug 4	Total	Total
Cheyenne	0.0	0.0	100	0	1.73	1.67	0.76	4.16	0.01	0.00	0.01	4.17*
Wrangler 2X	10.0	10.0	100	100	1.38	0.78	0.32	2.48	1.09	0.27	1.36	3.84*
Wrangler	9.8	10.0	100	95	1.35	0.81	0.31	2.47	0.94	0.29	1.23	3.70
Common T	0.3	0.5	100	0	1.56	1.21	0.62	3.38	0.00	0.01	0.02	3.40
Mohawk	0.3	0.5	100	0	1.34	1.27	0.49	3.11	0.01	0.01	0.02	3.13
Riata	9.3	10.0	100	100	1.05	0.69	0.29	2.04	0.74	0.27	1.01	3.05
Riviera	2.5	5.5	100	98	1.06	0.75	0.33	2.14	0.25	0.29	0.54	2.68
Common E	0.0	0.0	100	0	1.42	0.86	0.52	2.80	0.00	0.00	0.00	2.81
LSD (0.05)	1.0	1.0	0.0	3.1	0.39	0.3	0.15	0.65	0.15	1.0	0.14	0.37

NOTE: Limited supplemental irrigation was used for establishment in 2007.
Rainfall deficit June-October 2008 was 8.88 inches below average.
[1] Spring green-up scale of 0-10, with 10 being the whole plot green (an indication of winter survival).
*Not significantly different from the highest numerical value in the column, based on the 0.05 LSD.

Common bermudagrass can sometimes be successfully grown in Kentucky, but it is not as productive or winter hardy as named varieties. Although the term "common" is widely used, it is not a variety. Wide variation exists in the growth and spreading characteristics of common bermudagrass, depending on where it originated. Common has a greater potential than many of the improved sprigged varieties to become a weed pest, since it does produce some viable seeds.

Seeded Varieties

Wrangler is slower to establish than other seeded varieties, but it is very cold tolerant, with average forage yield under hay and pasture management. It has always shown excellent winter survival in Kentucky variety tests.

Riviera is a popular turf-type bermudagrass that has good cold tolerance. This variety is very slow to germinate and establish. It forms a dense sod that is important on sports fields but has limited application as a forage bermudagrass.

Riata is a blend of Wrangler and Rivera. Some have suggested that this blend is well suited for horse pasture, since Rivera forms a dense sod and Wrangler has good forage production. But as with any blend, there is no guarantee that both varieties will grow equally.

SunGrazer is a blend of Wrangler and KF-194. It has good cold tolerance and has performed well in Virginia variety tests.

Mohawk was selected out of Virginia germplasm and is marketed for turf and pastures. Its cold tolerance is intermediate compared with that of Wrangler. It has good sod density combined with medium fine texture and a dark-green color.

KF-194 has about the same cold tolerance as Mohawk and has performed well in Virginia tests.

Laredo is a three-way blend of Mohawk, KF-194, and CD 90160. A problem with this blend and similar ones is that the rapid establishment of CD90160 often out-competes the other varieties the first year, then after it winter-kills in subsequent years, the stand is depleted.

Cheyenne was developed for Pennington Seed, Inc. It is as cold hardy as the sprigged varieties such as Coastal and more cold tolerant than Tifton 85. It has been planted in transition zone states such as Arkansas, Kansas, Missouri, Oklahoma, and Tennessee. Cheyenne is not as cold tolerant as Wrangler.

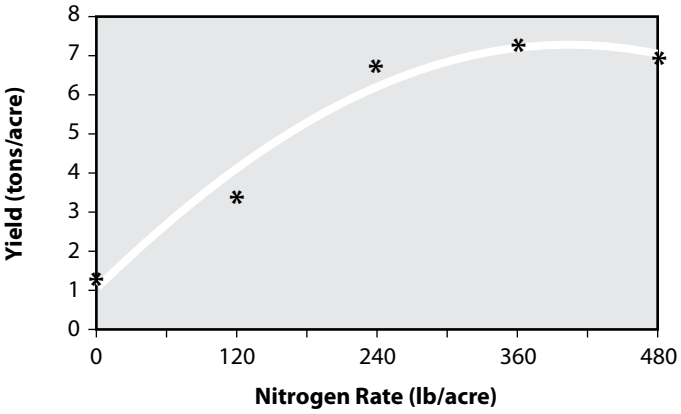
Ranchero Frio is a blend of Cheyenne, Cheyenne II, Giant, and Mohawk. Mohawk is the only winter-hardy variety in this blend, which is not recommended in Kentucky because the Giant bermudagrass usually overtakes the stand, then winter-kills after the first year.

CD 90160 establishes rapidly and is very productive during the first year of establishment. It has very poor cold tolerance and completely winter-killed in several UK trials.

Fertilization

Under good management, bermudagrass is a high-yielding forage that responds to high levels of nitrogen (N) fertilization. The amount of N needed depends on the amount of production desired, as shown in Figure 2. In a five-year study at UK Robinson Station, dry matter yields of Tifton 44 increased with increasing N rate up to 380 lb N/acre. As Table 5 shows, approximately 49 pounds of dry matter were produced for each pound of N applied up to 240 lb N/acre. Dry matter production declined to 25 pounds per pound of N applied at the rate of 480 lb N/acre rate.

Figure 2. Hay equivalent yield at 13% moisture of Tifton 44 bermudagrass at different rates of nitrogen at the UK Robinson Substation from 1983-1987.



For new seedings, improved weed control and greater fertilizer N-use efficiency will be obtained if initial fertilizer N applications (30-60 lb N/acre) are delayed to one month after sprigging or seeding. For established stands, N applications should be split (60 lb N/acre after each harvest) in order to obtain high production throughout the growing season. The first application should be made when spring green-up begins, with the remaining applications after each "graze down," or hay cutting. The last application should be made by mid-August to fully use applied N before a killing frost causes the grass to become dormant.

High-yielding forage crops such as bermudagrass can remove as much as 360 pounds of potassium (K) and 40 pounds of phosphorus (P) per acre annually in harvested dry matter.

Table 5. Bermudagrass dry matter yield produced per pound of applied N (stand established in 1983).

N-applied lb/acre	1983	1984	1985	1986	1987	Mean
	lb dry matter/lb N					
120	32.3	59.1	51.7	52.0	51.4	49.3
240	37.1	52.3	50.1	52.3	54.1	49.2
360	26.8	33.0	39.2	35.0	40.6	34.9
480	21.2	23.9	27.2	23.1	29.8	25.0

Note: Tifton 44 bermudagrass study conducted at the UK Robinson Station.
Source: Thom, W.O., H.B. Rice, M. Collins, and R.M. Morrison. 1990.

Phosphorus is necessary to develop a healthy root system and stimulate vigorous aboveground growth. Potassium is important for drought tolerance, disease resistance, rhizome development, and winter survival, especially under high N fertilization. In most Kentucky soils, 50-75 pounds of P_2O_5 and 150 to 200 pounds K_2O per acre applied annually have been sufficient to maintain production, but regular soil tests are essential to avoid deficiencies, especially with K. If growing legumes with bermudagrass, increase the amount of P and K and decrease the amount of N. For optimal production, P and K fertilizer should be added according to soil test recommendations. This practice will maintain adequate nutrient availability for the following bermudagrass crop.

Weed Control

Control of undesirable grasses and broadleaf weeds is very important in establishing bermudagrass. It is difficult to get good coverage of the desired species when weeds are present and competing for water, nutrients, and light. Currently, options for chemical weed control are extremely limited, especially for annual grass weeds like crabgrass and foxtail. Herbicide products labeled for applications on bermudagrass turf or other non-grazed sites should not be used where bermudagrass is being established and managed as a livestock forage and would be considered an illegal pesticide application.

Bermudagrass forage stands established by sprigging may be sprayed with some diuron-containing herbicide products (for example, Diuron 4L, Diuron 80DF, and Diuron 80WDG) as a pre-emergent treatment. Diuron provides fair to good control of crabgrass and goosegrass when applied immediately after sprigging. Diuron is not recommended or labeled for use with seeded bermudagrass establishment. The use of 2,4-D, Weedmaster (dicamba+2,4-D), and Cimarron (metsulfuron) is recommended as a post-emergence control of broadleaf weeds in bermudagrass when legumes have not been interseeded. Timely mowing and a good fertilization program will also reduce many weed problems in bermudagrass.

Removing a Bermudagrass Stand

Many Kentucky producers are concerned that bermudagrass they plant for forage may become a future weed problem. When planning to establish bermudagrass on new land areas, carefully consider the potential long-term use of these land resources for future forage or grain crops. After bermudagrass becomes established within an area, it can be extremely difficult and expensive to kill and convert these sites back to other types of forage or grain cropping systems.

Our typical recommendation is to not plant bermudagrass onto fields that you plan to crop in the future. Across the southern United States, however, bermudagrass is one of the most widely grown forages. Producers have found that eliminating bermudagrass for cropping requires multiple applications (typically three) of Glyphosate or a similar product, with the applications spread four to six weeks apart. Mid to late summer and early fall applications provide a better kill than spring applications.

Seeding Other Species into Bermudagrass Sod

Considerable interest exists in interseeding other forage species into bermudagrass to extend the growing season and improve forage quality. Research has shown several plant species to be compatible with bermudagrass. These include cereal rye or annual ryegrass (fall-seeded each year); perennial legumes such as red and white clover; and winter annual legumes such as hairy vetch, arrowleaf clover, and crimson clover. If annual legumes are not managed so that they reseed themselves, they must be seeded annually.

In a three-year study at the University of Kentucky, bermudagrass without N fertilizer (as a check) was compared with bermudagrass-bigflower vetch, bermudagrass-red clover, and bermudagrass with three nitrogen rates (90, 180, and 270 lb N/acre) as shown in Table 6. Bigflower vetch increased total annual dry matter productivity more than application of 90 pounds of fertilizer N/acre but less than application of 180 pounds of N/acre annually. The weed-free yield of bermudagrass without nitrogen fertilizer (2,488 lb/acre) was less than half the yield of the vetch-grass mixture. Over the same three-year period, red clover-bermudagrass produced approximately 900 pounds more dry matter per acre than vetch-bermudagrass.

Table 6. Dry matter (DM) production and percentage of legumes and weeds of bermudagrass swards under various treatments at Lexington, Kentucky (1968-1970).

Treatment	DM lb/ac	Legumes %	Weeds %
Bermudagrass (No N)	3,600	0	31
N 90 lb/acre	5,790	0	25
N 180 lb/acre	8,600	0	20
N 270 lb/acre	10,750	0	20
Bermudagrass + Bigflower Vetch	6,640	40	12
Bermudagrass + Red Clover	7,460	57	10

Source: Adapted from W.C. Templeton, Jr. and T.H. Taylor. Performance of bigflower vetch seeded into bermudagrass and tall fescue swards. *Agronomy Journal* 1975.

Both bigflower vetch and red clover were successful in limiting growth of winter-annual weeds, primarily henbit and chickweed. Because these weeds germinate and grow when temperatures are too low for bermudagrass, they constituted approximately 60 to 70% of the dry matter harvested from the check and N-fertilized grass plots prior to mid-June.

Other studies at the UK Robinson Station have been conducted using cereal rye fall-seeded into bermudagrass sod with different levels of fall N fertilization. In these studies, cereal rye slightly suppressed the first bermudagrass crop but significantly

suppressed winter and spring weeds. Interseeded cereal rye production varied with the level of N fertilization, producing up to 2,700 pounds of dry matter when 90 lb N/acre was applied. Interseeding cereal rye did extend the grazing season by producing from 1,100 to 2,700 pounds of dry matter per acre during March, April, and May before bermudagrass growth began.

Use

Bermudagrass continues to attract the interest of livestock producers in Kentucky because of its high yield potential, seasonal production pattern, and superior traffic tolerance. While dry matter production is certainly important, forage quality should also be considered in determining when and where bermudagrass fits into a livestock-forage enterprise.

Quality of all forage crops tends to decrease with advancing maturity. As warm-season grasses such as bermudagrass mature, fiber concentrations increase and contribute to a decline in digestibility. Higher growth temperatures also hasten maturity and increase lignification (thickening of cell walls), which reduces digestibility. However, the nutritive quality of bermudagrass hay cut at 28-day intervals compares favorably with that of orchardgrass and tall fescue hay cut at comparable stages of maturity (Table 7). Frequency of cut and nitrogen fertility influence both protein content and digestibility of the dry matter. Although bermudagrass hay is not preferred for high-producing dairy cows, it can be used to grow replacement heifers and to feed dry dairy cows, horses, sheep, goats, and all classes of beef animals.

Table 7. Percent approximate crude protein and total digestible nutrients (TDN) content of various hay crops.

Forage Species	Crude Protein %	TDN
Alfalfa	17-22	57-62
Orchardgrass	12-15	55-60
Tall Fescue	10-15	55-60
Bermudagrass	10-14	55-60

Note: Approximate usual nutrient level based on recommended production and harvesting practices.
Source: Adapted from D.M. Ball, C.S. Hoveland, and G.D. Lacefield, *Southern Forages,* 2002.

Beef Cattle

Studies using bermudagrass for growing steers indicate that the highest forage quality and greatest animal gains occur in May and June. Gains of 1.5 to 2.0 pounds per day are not uncommon during the earlier part of the growing season, dropping off to less than 1.0 pound per day in July and August. While animal performance decreases during the hot summer months, carrying capacity or dry matter production per acre has been shown to improve as much as 20%.

Small Ruminants

Sheep and goats are referred to as "small ruminants" because they have a four-chambered stomach (three forestomachs and one true stomach), like cattle. Unfortunately, little research has been conducted on the effects of a bermudagrass diet on small ruminant performance.

In 2001, Burke et al. reported on a study conducted in west-central Arkansas. They compared the seasonal effects of endophyte-infected Kentucky-31 tall fescue and common bermudagrass on pregnancy and lambing rates of hair sheep ewes that were either straightbred (St. Croxi or Romanov) or crossbred. They found that pregnancy and lambing rates were similar between both forage treatments for mature ewes. However, pregnancy rate was lower for yearling ewes on tall fescue than on bermudagrass (13.1 vs. 46.0%, respectively).

In another study conducted at UK Robinson Station, five mixed-breed doe goats were given free-choice access to 21 common forage species growing in small plots to determine their forage preferences. Although the preference rankings of individual species changed slightly from year to year during this study, bermudagrass was consistently the least preferred forage species in this trial.

Horses

Bermudagrass is considered an excellent forage for maintaining horses in Kentucky. During a 120-day grazing period in a UK study in 2007, 14 adult open mares were able to maintain body condition and body weight while rotationally grazing 4.9 acres of bermudagrass. The absence of an entophytic fungus in bermudagrass also makes it a safe forage for broodmares. The high traffic tolerance of bermudagrass makes it an excellent choice for summer horse paddocks. In much of the southern United States, bermudagrass horse pastures are routinely overseeded with annual ryegrass for late fall, winter, and early spring grazing.

Summary

In Kentucky, bermudagrass provides a useful option for supplemental summer forage in most livestock forage systems. Managed properly, bermudagrass can produce high dry matter yields with moderate forage quality. Producers who are considering planting bermudagrass should be extremely cautious of new bermudagrass varieties that have not been tested in Kentucky for cold tolerance. In general, bermudagrass establishment with sprigs or seed can be slow. Most failed stands are due to lack of timely rainfall, seeding too deeply, and/or highly competitive weed pressure. Bermudagrass production is highly dependent upon proper nitrogen fertilization. Adequate nitrogen rates and application timing affect yield and quality.

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