

Coastal vs. Tifton 85 Bermudagrass for Horses. Facts & Myths.

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Bermudagrasses are one of the most important grasses used in the U.S. for horse grazing and hay feeding. Despite the abundant research on these grasses and their popularity among producers in the cattle livestock industry, there are many myths surrounding their use as horse feed. This publication will present the general facts and characteristics of bermudagrass. It will provide the distribution (acreage), botanical description, forage production and quality comparisons for Coastal and Tifton 85 bermudagrass, with the intent that horse owners will make feeding decisions based on facts instead of myths.

Facts vs. Myths

‘Coastal’ is an improved bermudagrass that has been used in Florida since its release six decades ago; Tifton 85 is a more recent variety that has been around for more than

10 years and is increasingly being adopted because of its superior nutritive value and production. However, more myths are linked to pasture and hay use for horses than for any other animal. And when the discussion comes to the specifics of varieties it is not any different:--“If the stem is too thick my horse will not eat it” – Such statements apply to many situations, but not to all varieties. As discussed later, some of these ‘thick’ stems are highly digestible depending on the variety. As good ‘pasture and hay myths’ they override the facts derived from sound research studies regardless of the years under examination! This should not be the case; in many instances, they are more fiction than fact and they come to life based on anecdotal observations exchanged in the attempt to explain the dire outcome of mismanagement.



Tifton 85

Bermudagrass Acreage

On a national scale bermudagrass is grown in 25-30 million acres for livestock use. It is regarded as the most widely planted warm-season perennial grass in the southern United States. If wondering how many acres are planted to bermudagrass in Florida and where they are in the state, you will find out that in the last 10 years the hay acreage harvested (all species including bahiagrass and perennial peanut) has ranged from 250,000 acres (1997) to 290,000 acres (2005). In 2006, the total acreage harvested for hay was 260,000 and approximately 80% of the producers in north Florida, use one of several varieties of bermudagrasses. Most horse hay in Florida is produced in the north but, with the increased demand and rapidly growing market for horse hay, production in south Florida is becoming a cash crop. The small farm owner relies almost entirely on external sources within Florida and Georgia hay supply, and in dry years supply comes from as far north as the Carolinas and Virginia.

Description of the grasses

To break some of the myths, a good start is the clarification of the botanical and morphological characters between Coastal and Tifton 85 bermudagrass. Coastal bermudagrass, whose scientific name is *Cynodon dactylon*, is a cross or hybrid developed in Georgia in 1943. In terms of propagation, this grass has sterile flowers (there is no seed production and the plant reproduces mainly vegetatively through pieces of stem or runners). Tifton 85 is also a sterile hybrid; however, there is a distinction between the two. Coastal is a cross whose parents were two bermudagrass species (*Cynodon dactylon* X *Cynodon dactylon*). Although we call Tifton

85 a bermudagrass, it is a cross between a bermudagrass (*Cynodon dactylon*) and a close tropical relative characterized by a more upright growth than coastal called stargrass (*Cynodon nlemfuensis*); the particular stargrass used in this cross was selected because of the high digestibility. These differences have important implications for management and the nutritional composition of the grass.

Tifton 85 bermudagrass in appearance is slightly different from Coastal; when comparing the two, Tifton 85 stands out as taller with more upright growth habit, larger stems that spread rapidly, and broader leaves with darker color; the rhizomes, or underground stems for energy storage are fewer but larger and they have been associated with the good tolerance to drought present in Tifton 85. This grass was selected for deep, droughty sands and, therefore, is adapted to well drained soils. Although more drought tolerant than Coastal, Tifton 85 is less winter hardy because of that tropical parent with no cold hardiness. Nevertheless, in Florida it can be grown all the way to the Panhandle and winter hardiness is not an issue. The low stubble recommended for Coastal is not necessarily recommended for Tifton 85. Compared to Coastal management, Tifton 85 requires leaving an additional inch or two in the stubble due to the more upright growth, and longer time to replenish reserves if cut at a lower stubble.

Forage Production

In Florida, almost exclusively, all bermudagrass production is based on hybrid bermudagrasses like Coastal and Tifton 85. When properly fertilized and managed they produce about 30-60% more dry matter than the seeded types. Providing a reference figure for dry matter production

of Coastal and Tifton 85 is difficult because production varies with soil moisture, fertility and management (age at cutting or grazing); however, annual production reports for fertilized (100 lb N/year) Coastal have ranged from 7000 to 11,000 lb/acre while Tifton 85 yields have been consistently higher by 25-30% more. In Florida, dry matter yields of 3,000 to 5,000 lb/acre/cutting are not uncommon for Tifton 85 with 3 to 4 cuttings per year. With high soil fertility/fertilization yields from both grasses can be substantially increased.

Forage Quality

Research data from different southern states (Florida, Georgia, Texas) have shown that under similar cultural practices Tifton 85 is about 10% units higher in digestibility and also ranks higher than Coastal bermudagrass in crude protein concentration (1-5% units higher). Comparison of quality related characteristics of different bermudagrasses across the south ranks Tifton 85 as one with the highest nutritive value (Table 1).

Under high Nitrogen fertilization Coastal CP concentration may range from 10-17% while reports of 17-20% CP for Tifton 85 under high fertility conditions and young stages of

maturity are not uncommon.

An aspect associated with the high nutritive value of Tifton 85 and of importance, particularly for horse feeding, is the higher digestibility of the dry matter and more importantly of the fiber component (Table 2). Although it has thicker stems, those stems have fiber content that is more digestible and the decline overtime is not as pronounced as that for Coastal.

Table 2 Forage and fiber digestibility for Coastal and Tifton 85 bermudagrasses

		Age (weeks)		
		3	5	7
		-----%-----		
Digestibility	Tifton 85	67	65	59
	Coastal	66	62	54
Digestible fiber (NDF)*	Tifton 85	57	60	48
	Coastal	43	53	41

NDF= Neutral Detergent Fiber
Adapted from Mandevu et al (1999)

Nevertheless, the fact that Tifton 85 is regarded as a hybrid bermudagrass with very high nutritive value, and possibly the highest quality hybrid released, does not make it suitable for every field conditions.

Table 1. Performance of bermudagrasses across the south

Choice	Grass	Winter Survival	Digestibility	Protein	Rhizomes
1	Tifton 85	3.5	1	1	Some
2	Tifton 44	1	4	3	V many
3	Coastal	3	6	3	Many
4	Coastcross	9 (No cold tolerance)	1	1	None
No	Alicia	3.5	9	3	V many

Ratings: 1 = best, 9= poorest.
Adapted from Burton and Utley (2005).

Having an excellent production and quality potential does not preclude them from mismanagement: a) being planted in areas where it should not be utilized (i.e. areas with poor drainage); b) being used at very late stages of maturity - if they are cut or grazed after 35-60 days their nutritive value will be extremely low and will very likely not meet the animal nutritional requirement; c) mismanagement after post harvest conditions, such as weathering of the hay or the use of big round rolls to feed just one or two horses – in this situation, the roll cannot be consumed promptly and it will develop mold regardless of the grass species or grass quality fed.

Coastal and Tifton 85 are both excellent warm-season grasses and they will provide the high quality hay and pasture required for horses if properly managed. And this is not a myth—it is a fact!

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