

Comparison of Jiggs to Other Bermudagrass Alternatives

Joe Vendramini, Ph.D.¹

¹Range Cattle Research and Education Center, University of Florida, Ona, FL

Bermudagrass is one of the most important warm-season perennial grasses in the southern U.S. Coastal bermudagrass was the first hybrid bermudagrass released in 1943 and, since then state agricultural experiment stations and private companies have released a massive number of new bermudagrass cultivars. Despite the large number of cultivars released, it has been challenging to find a bermudagrass cultivar adapted to South Florida, primarily because of the poorly drained soils. Coastal, Tifton 85, and the “Central Florida Tifton 44” (which is different from the true Tifton 44) are cultivars well adapted to North-Central Florida and have superior drought tolerance; however, they are not productive and persistent when planted in poorly drained soils.

A private company, owned by J.C. Jiggs, released Jiggs in southeast Texas in the 1980’s but the exact date of the release is unknown. Jiggs has been included in bermudagrass variety trials in Overton, TX and Ardmore, OK for several years and it had showed decreased herbage production when compared to Tifton 85 and Tifton 44. It is important to mention that these sites are located in northern latitudes ($30\text{--}31^\circ$), where the duration of the cool season is prolonged and the number of freezing events is much greater than in South Florida (27°). Nonetheless, these variety trials have proven that Jiggs is as cold tolerant as many of the commercial bermudagrass cultivars.

Dr. Paul Mislevy brought Jiggs to the Range Cattle Research and Education Center, Ona, FL approximately 10 years ago to conduct research and compare Jiggs with the existing improved warm-season grass species adapted to South Florida. A study was conducted in Ona, FL to compare the herbage production and nutritive value of different stargrass (Florona, Okeechobee) and bermudagrass (Tifton 85, World Feeder, Bermuda 2000, and Jiggs) cultivars at different grazing frequencies (2, 4, 6,

and 7 weeks). Jiggs and Bermuda 2000 (cultivar not released) were generally the two highest yielding entries at grazing frequencies of 2 (3.4 and 3.1), 4 (6.5 and 5.7), 5 (6.9 and 7.9), and 7 weeks (9.3 and 8.2 ton/acre), respectively, and the most persistent. The winter forage production was highest for Bermudagrass 2000 and Jiggs averaging 1.1 ton/acre when harvested after 12 weeks regrowth. It was noted that the early spring and fall forage production of Jiggs was greater than the other cultivars.

A recent study conducted in Wauchula, FL compared several species and cultivars of warm-season grasses commonly planted in South Florida. Jiggs was among the most productive entries with similar nutritive value (Table 1). As a result of standing water conditions for two weeks during the summers of 2007 and 2008; many entries did not persist throughout the three-year trial. Jiggs persisted under those conditions and maintained 95% of the stand after the experimental period.

A haylage study was conducted at the UF/IFAS Range Cattle Research and Education Center in Ona to compare nutritive value and fermentation characteristics of Jiggs and Tifton 85 ensiled at two dry matter concentrations, 30 and 50% DM. The plots were fertilized with 80 lb N/acre and harvested at four weeks regrowth interval. There was no difference in nutritive value and fermentation characteristics between Jiggs and Tifton 85 haylage. The average crude protein, in vitro digestibility, lactic acid concentrations, and pH were 13, 55, and 3%, and 4.5 respectively.

A grazing study was conducted at the UF/IFAS Range Cattle Research and Education Center to test the effects of Jiggs stubble height on forage and animal performance. Jiggs grazed at approximately seven inches stubble height had crude protein and in vitro digestibility of 15 and 57%, respectively. Early weaned calves grazing Jiggs and receiving 1% body weight in

concentrate had average daily gains of 1.3 lb/day.

In addition to the desirable characteristics described above, it has been observed that Jiggs has faster establishment than stargrass and other cultivars of bermudagrass, when planted with mature tops. Jiggs also has thin stems, which allow the grass to dry faster under field conditions when harvested for hay or haylage. The faster drying time is necessary to decrease the chances of adverse climatic conditions and maintain the green color of the dried material. The thin stems and green color are desirable attributes in the hay market, primarily for horse hay.

As with many bermudagrass cultivars in South Florida, Jiggs is susceptible to leaf rust when regrowth periods between harvests or grazing exceed approximately six to seven weeks. The appearance of rust is conditional to the plant maturity and climatic conditions. Nitrogen fertilization can stimulate new growth and eventually decrease the rust symptoms; however, it is an expensive solution for the problem. Spraying copper sulfate has also being tried by producers with highly variable results. The best management practice to alleviate the rust problem is to harvest or graze the stand and allow new regrowth.

Recently, it was observed in Ona and Okeechobee that Jiggs stands were damaged by "bermudagrass stem maggot". The common symptom is the death of the top leaves of the plant. The products used to control the maggot are similar to the products currently used for army worms, with the exception of Dimilin.

It needs to be emphasized that Jiggs is a bermudagrass; like all bermudagrasses, Jiggs requires adequate pH and fertilization program, and will not tolerate overgrazing for long periods. Overgrazing Jiggs often results in an infestation of common bermudagrass, which is extremely difficult to control. A minimum of four inches stubble height is recommended for grazed Jiggs pastures, and recent research finding have indicated that five to six inches may increase forage production.

Although it was mentioned that Jiggs is adapted to poorly drained soils, it is not recommended to plant Jiggs in areas with frequent long periods of flooding (several weeks) because the persistence of Jiggs under this condition is unknown.

Table 1. Herbage production and nutritive value of warm-season grasses harvested in the summer with 6 weeks regrowth interval

Item	Forage Species							
	Bahiagrass	Stargrass	Mulato	Limpograss	Jiggs	Coastcross 2	Tifton 85	Florakirk
Forage Production								
(lb/acre)	2600 ^c	3670 ^b	3200 ^b	3870 ^b	4600 ^a	3090 ^b	2970 ^b	3800 ^b
CP, %	14.9	12.0	12.6	12.5	11.6	12.9	10.2	11.6
IVTD, %	56.3 ^b	61.7 ^{ab}	67.0 ^a	60.1 ^b	58.4 ^b	63.2 ^a	63.9 ^a	58.0 ^b

CP = crude protein and IVTD = in vitro true digestibility

^{a, b, c} Means with different superscripts differ, $P < 0.05$