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# Russell Bermudagrass

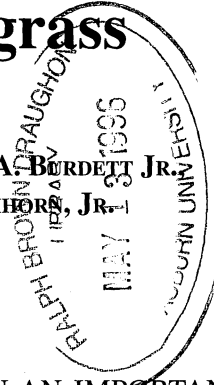


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March 1996

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# Russell Bermudagrass

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**B**ERMUDAGRASS HAS BEEN AN IMPORTANT FORAGE crop in the South for decades, and for good reason. It is widely adapted, has high yield potential, and has proven useful for thousands of forage producers, particularly as a hay crop. Thus it is not surprising that the availability of a productive, new forage bermudagrass variety is always of interest to cattlemen in the lower South where bermudagrass is adapted.

Most new varieties of hybrid bermudagrass, which require propagation vegetatively from sprigs or clippings, are developed in plant breeding programs. However, the most recent “new variety” has actually been around for years but has only recently attained true variety status.

‘Russell’ bermudagrass was found in the late 1970s in a field near Seale, Ala., by Donald Bice, County Agent in Russell County. The field had originally been planted to the Mississippi State University variety ‘Callie,’ but since Callie soon winterkilled throughout Alabama, it became clear that the grass which had dominated the field was unique, probably either a mutation of Callie or a natural hybrid between Callie and common bermudagrass.

Once the impressive characteristics of this grass were recognized, planting material was shared among neighbors. By the mid-1980s, there were

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hundreds of acres of it being grown, mostly in or near Russell County in east central Alabama.

On-farm success led to the grass being entered in variety trials at the Plant Breeding Unit in Tallassee, Ala., in 1986 (Table 1), at the E.V. Smith Crops Unit in Shorter, Ala., in 1991 (Table 2), and at the Hill Farm Research Station in Homer, La., in 1988 (Table 3). These tests established that this bermudagrass yields as well as, or better than, popular hybrid bermudagrasses which are commonly used throughout the South.

Russell has yielded better and been rated higher for winter hardiness than 'Coastal' (Table 4), the variety which is considered the bermudagrass standard and which has been the subject of many research studies in Alabama and elsewhere. No unusual disease or insect problems have been noted with the grass, either in variety trials or in over 15 years of producer experience. It also was shown in a greenhouse test to root better from clippings than Coastal (Table 5).

Forage quality of Russell was similar to that of several other commonly grown bermudagrass hybrids when grown in a test in Alabama (Table 6), but in-vitro dry matter digestibility was lower than Coastal in a test in Louisiana (Table 7). Rate of spread, primarily by stolons, has been as fast or faster than any other bermudagrass variety commonly available in Alabama or Louisiana, with the exception of 'Tifton 85.'

A unique trait is that in the first harvest of the season it has almost always outyielded all other varieties to which it has been compared (Table 2). Most producers see this characteristic as being quite valuable. If a field is to be used for pasture, early greenup allows earlier grazing. High growth potential in early spring when rainfall is most dependable also gets hay production off to a good start for the year and reduces the risk of a poor season-long hay yield.

A quantitative measurement of sprig production per unit area for Russell relative to other bermudagrasses has not been determined. However, it has been noted that the variety forms a dense mass of robust rhizomes. Observation of a sprig (rhizome) digging operation involving Russell confirms that sprig yield is outstanding. Moreover, the recovery rate of stands after sprigs have been dug has been excellent.

Russell exhibits many morphological characteristics similar to robust common bermudagrass ecotypes. Forage height at normal cutting stage is typically lower than for other improved bermudagrass hybrids, but the forage

is quite dense, thus allowing high yields. It forms a thick sod which producers have noted holds up well under grazing and which has important implications regarding erosion prevention.

Documentation of its superior forage characteristics, as well as the need to have certified planting material available to producers, made it apparent that Russell should be recognized as a variety. This led to the 1994 joint release of Russell bermudagrass as a recognized variety by the Alabama Agricultural Experiment Station and by the Louisiana Agricultural Experiment Station.

The northern limit for use of this variety has not been established, but it has persisted for years in locations as far north as Pell City, Ala., and Homer, La., (both have latitudes similar to Birmingham, Ala.) and it has withstood winters in the vicinity of Russell County, Ala., since the mid-1970s. It is believed that this variety can make an important contribution on many farms, especially in areas with well-drained soils and winters which are no more harsh than those which normally occur in Central or North Alabama or North Louisiana.

Though promising new variety releases often stimulate much producer interest, many of them ultimately turn out to be disappointments. When new varieties reach the farm, it is not unusual for problems to appear that had not been previously observed. In the case of the "new" variety Russell, farmers have access to a bermudagrass which has *already* stood the test of time and for which there is much evidence of producer acceptance.

Breeder planting stock will be maintained by the Alabama Crop Improvement Association from which foundation planting material is available. Persons interested in producing certified sprigs should contact this agency at P.O. Box 2619, Auburn, AL; Phone — (334) 844-4995 or 821-7400.

**TABLE 1. SEASON-LONG DRY MATTER YIELDS OF ENTRIES IN BERMUDAGRASS VARIETY TRIAL AT THE PLANT BREEDING UNIT IN TALLASSEE (1988-90)**

Bermudagrass	1988	1989	1990	Average
	<i>lb./a.</i>	<i>lb./a.</i>	<i>lb./a.</i>	<i>lb./a.</i>
Russell	8,340	11,779	7,103	9,074
Grazer	6,365	9,747	5,079	7,064
Tifton 78	7,242	10,180	5,321	7,581
Lancaster	6,079	7,470	4,744	6,098
Pasto Rico	6,295	8,511	5,564	6,790
Campo Verde	6,263	8,784	5,171	6,739

**TABLE 2. FIRST CUT AND SEASON-LONG DRY MATTER YIELDS OF ENTRIES IN BERMUDAGRASS VARIETY TRIAL AT E.V. SMITH RESEARCH CENTER CROPS UNIT IN SHORTER (1992 - 1994)**

Bermudagrass	1992		1993		1994	
	First cut	Season long	First cut	Season long	First cut	Season long
	<i>lb./a.</i>	<i>lb./a.</i>	<i>lb./a.</i>	<i>lb./a.</i>	<i>lb./a.</i>	<i>lb./a.</i>
Russell	6,701	23,819	7,587	18,092	5,459	19,420
Tifton 85	4,920	23,736	6,822	18,984	2,910	18,064
Coastal	4,987	21,732	7,217	17,055	5,420	19,839
Tifton 44	5,535	22,318	6,233	14,545	4,452	18,787
Tifton 78	3,841	19,377	5,684	14,396	3,192	13,835

**TABLE 3. MEAN ANNUAL FORAGE YIELDS OF RUSSELL AND COASTAL BERMUDAGRASSES AT THE HILL FARM RESEARCH STATION IN HOMER, LA. (1989-92)**

Bermudagrass	1989	1990	1991	1992	Mean
	<i>lb./a.</i>	<i>lb./a.</i>	<i>lb./a.</i>	<i>lb./a.</i>	<i>lb./a.</i>
Russell	17,007	17,367	12,673	23,717	17,691
Coastal	12,897	15,051	11,666	21,030	15,161

**TABLE 4. VISUAL RATINGS FOR STAND ESTABLISHMENT, WINTER SURVIVAL, AND RESISTANCE TO LEAF-SPOT DISEASE FOR RUSSELL AND COASTAL BERMUDAGRASS IN HOMER, LA.**

Bermudagrass	Stand est. <sup>1</sup>		Winter survival <sup>2</sup>			Leaf-spot resistance <sup>3</sup>		
	1988	1989	1990	1991	1989	1990	1991	1992
Coastal	3	10	8	10	5	5	5	5
Russell	4	10	10	10	5	5	5	5

<sup>1</sup>Rating: 1 = very slow to 5 = very rapid.

<sup>2</sup>Rating: 1 = 0-10% full stand to 10 = 90-100% full stand.

<sup>3</sup>Rating: 1 = highly susceptible to 5 = highly resistant.

**TABLE 5. PERCENTAGE OF COASTAL AND RUSSELL BERMUDAGRASS STEMS ROOTING AT THREE MOISTURE LEVELS IN A GREENHOUSE ENVIRONMENT**

Bermudagrass	Soil moisture level		
	Low	Medium	High
Coastal	24.6	27.1	44.3
Russell	32.5	73.6	80.7

**TABLE 6. FORAGE ANALYSIS RESULTS FROM  
THE E.V. SMITH CROPS UNIT (1992)<sup>1,2</sup>**

Bermudagrass	Crude protein	Dig protein	NDF <sup>3</sup>	Crude fiber	TDN <sup>4</sup>
	<i>pct.</i>	<i>pct.</i>	<i>pct.</i>	<i>pct.</i>	<i>pct.</i>
Coastal	12.14	7.80	72.75	32.83	52.14
Tifton 44	11.45	7.15	74.00	33.32	51.37
Tifton 78	12.15	7.81	71.60	32.36	52.85
Tifton 85	12.78	8.39	73.80	33.24	51.94
Russell	11.76	7.44	72.40	32.68	52.35

<sup>1</sup>These are the averages of samples taken from each of five replications. The sample date was Sept. 22, 1992.

<sup>2</sup>Samples were analyzed on a dry matter basis, and results are expressed as percentages of dry matter.

<sup>3</sup>NDF = Neutral Detergent Fiber

<sup>4</sup>TDN = Total Digestible Nutrients

**TABLE 7. MEAN NUTRITIVE CONTENT OF RUSSELL AND COASTAL  
BERMUDAGRASS ACROSS HARVESTS AND YEARS, AT THE HILL FARM  
RESEARCH STATION IN HOMER, LA. (1988-92)<sup>1</sup>**

Bermudagrass	IVDDM	CP	NDF	ADF	AIL
	<i>pct.</i>	<i>pct.</i>	<i>pct.</i>	<i>pct.</i>	<i>pct.</i>
Russell	56.80	11.59	69.57	34.02	4.95
Coastal	58.55	12.29	69.08	32.93	4.64

<sup>1</sup>IVDDM = *In vitro* Digestible Dry Matter; CP = Crude Protein; NDF = Neutral Detergent Fiber; ADF = Acid Detergent Fiber; and AIL = Acid Insoluble Lignin.

## ACKNOWLEDGMENTS

Appreciation is expressed to Dane R. Williamson, superintendent of the E.V. Smith Crops Unit; Steven P. Nightengale, superintendent of Plant Breeding Unit; and Charles B. Elkins, superintendent of the Plant Science Research Unit for assistance with data collection.

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