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Nueces and Llano BUFFELGRASS



The Texas Agricultural Experiment Station
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Nueces and Llano BUFFELGRASS

Nueces and Llano are new buffelgrass varieties with high forage production potential and improved cold tolerance. They are vigorous hybrids that initiate growth earlier in the spring, develop denser stands, and produce more forage than the Common (T-4464) and Higgins varieties. Mature plants develop a strong rhizomatous root system that enables them to tolerate freezing temperatures common in the northern section of the buffelgrass producing area of Texas (in the vicinity of San Antonio). Nueces and Llano are adapted to the present buffelgrass area and well-established stands should survive 50 to 100 miles further north than Common buffelgrass. New stands should be planted as early in the spring as possible because cold tolerance depends on development of strong, deep rhizomes before winter.

Nueces (hybrid #2-1) and Llano (hybrid #331) were developed in the cooperative grass breeding program by the U.S. Department of Agriculture, Science and Education Administration-Agricultural Research (SEA-AR), and the Soil and Crop Sciences Department, Texas Agricultural Experiment Station, and released jointly with the Soil Conservation Service. These varieties are apomictic F₁ hybrids derived from a cross of sexual clone B-1's (Reg. No. GP 1) x a rhizomatous apomictic "blue-type" introduced from Africa. Like most buffelgrasses, Nueces and Llano reproduce by obligate apomixis, an asexual (vegetative) method of reproduction in which the seed is formed without union of the male and female gametes.

KEYWORDS: Rangelgrasses/Nueces/Llano/Common (T-4464)/buffelgrass/forage production.

Cover: Nueces buffelgrass.

Because of their method of reproduction Nueces and Llano breed true and remain uniform and genetically constant in succeeding generations.

Description

Foliage color of both Nueces and Llano is bluish-green and mature inflorescences (heads) are tan to light brown. Mature plants have prominent rhizomes that spread to form dense broad crowns at the soil surface. The most prominent visual difference between Nueces and Llano is the length of inflorescences. Inflorescences of Nueces are about 50 percent longer than those of Llano. When grown under the same conditions the foliage of Nueces is greener and its leaves are wider and grow less erect than those of Llano. Nueces and Llano can be readily distinguished from Common and Higgins by the colors of foliage and inflorescences; Common and Higgins have green foliage and brownish-wine to purple inflorescences.

Performance

Nueces and Llano have been consistently superior to Common and Higgins in forage production tests. Comparative forage yields from tests at College Station, Beeville, and Weslaco are shown in Table 1. At Weslaco, without irrigation, average annual dry matter production of Nueces and Llano for 3 years was 1,000 pounds greater than Common. With irrigation they produced over 2,500 pounds more than Common. Yields in the third year at Weslaco illustrate the advantages of rhizomatous varieties — earliness and increased stand density. In that year (1979) Nueces and Llano produced 2,000 pounds more forage than Common without irrigation and, with irrigation, outyielded Common by 5,800 and 3,400 pounds of dry matter per acre, respectively. At Beeville where the growing season is shorter the yield differences averaged about 1,000 pounds in favor of Nueces and Llano over Common or Higgins. At College Station the new varieties also produced about 1,000 pounds more than Higgins. Common is not included in tests at College Station because it lacks winter hardiness.

Nueces and Llano produce nutritious high quality forage when grazed or harvested be-

TABLE 1. COMPARATIVE PERFORMANCE OF BUFFELGRASS VARIETIES

Forage Yields — Pounds Dry Matter Per Acre					
College Station — 1971-74					4-year
	1971	1972	1973	1974	average
Llano	9,000	9,070	8,500	9,570	9,040
Nueces	8,280	8,430	5,790	9,090	7,900
Higgins	7,760	8,060	5,240	7,480	7,140
Beeville — 1973-75					3-year
	1973	1974	1975	average	
Llano	9,060	3,650	4,930	5,880	
Nueces	8,300	3,870	4,540	5,570	
Higgins	7,040	2,470	3,820	4,440	
Common (T-4464)	6,780	2,250	4,270	4,430	
Weslaco — 1977-79 (without irrigation)					3-year
	1977	1978	1979	average	
Llano	10,920	13,220	15,280	13,140	
Nueces	10,740	13,290	15,210	13,080	
Common (T-4464)	9,840	12,990	13,290	12,040	
Higgins	8,800	11,970	10,560	10,450	
Weslaco — 1977-79 (irrigated)					3-year
	1977	1978	1979	average	
Nueces	14,550	21,780	29,520	21,950	
Llano	16,170	20,810	27,170	21,390	
Higgins	12,150	19,260	25,340	18,920	
Common (T-4464)	13,730	18,700	23,710	18,710	

fore maturity (Table 2). Based on animal feeding trials, Nueces is higher in dry matter digestibility than all other buffelgrass strains tested. Llano is lower in digestibility than Nueces and Common but well within the range of acceptable quality for warm-season grasses.

Both Nueces and Llano have outstanding individual characteristics that should be considered in choosing a variety to plant. Nueces is superior to Llano in seed production and high in forage quality. Both varieties are outstanding in forage production and well adapted throughout the buffelgrass production area.

Llano is superior to Nueces in cold tolerance and can be grown further north. The main advantage of this variety is that it offers a productive buffelgrass for an area where the species is not presently grown. Low seed production is the main disadvantage of Llano.

Seed production of Llano will be difficult and seed supply may be limited until there is sufficient acreage to permit seed harvest as a by-product of the forage program.

Production of inflorescences by rhizomatous buffelgrasses is limited during the long days of midsummer. Excess rainfall may result in dense vegetative growth that hinders seed harvest. A satisfactory fall seed crop can generally be produced under arid conditions. Experience has shown that seed production is encouraged by mowing the crop in mid-August, subjecting the plants to moisture stress for about 10 days, and then cultivating, watering, and fertilizing with a balanced fertilizer.

TABLE 2. DRY MATTER DIGESTIBILITY OF BUFFELGRASS VARIETIES

Beeville	In vitro digestibility, %			
	5/28/73	8/7/73	10/10/73	Average
Higgins	64.5	59.1	61.9	61.8
Common (T-4464)	63.6	59.5	60.3	61.1
Nueces	64.0	58.7	60.3	61.0
Llano	60.7	54.1	53.1	56.0

	(Dormant Season)				
	11/15/73	11/27/73	12/20/73	1/16/74	Average
Nueces	63.8	59.1	56.7	51.9	57.9
Common (T-4464)	60.7	57.3	57.7	51.9	56.7
Higgins	59.9	57.0	53.8	51.5	55.5
Llano	59.7	56.4	53.6	49.2	54.7

Weslaco	In vitro digestibility, %		
	9/19/78	11/7/78	Average
Nueces	62.5	57.6	60.0
Higgins	60.4	57.2	58.8
Common (T-4464)	60.9	56.4	58.7
Llano	60.6	54.4	57.5

College Station	In vivo digestibility, %
	1972
Common (T-4464)	61.8
Nueces	65.9
Llano	60.0

Sources of Seed

Foundation seed of Nueces and Llano is available to qualified seed growers through the Foundation Seed Service at the Texas Agricultural Experiment Station. Certified seed will be available after the 1980 season.

References

Woodward, W. T. W. 1980. Performance of Buffelgrass Cultivars for South Texas. Texas Agr. Exp. Sta. MP-1460.

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