FESTUCA

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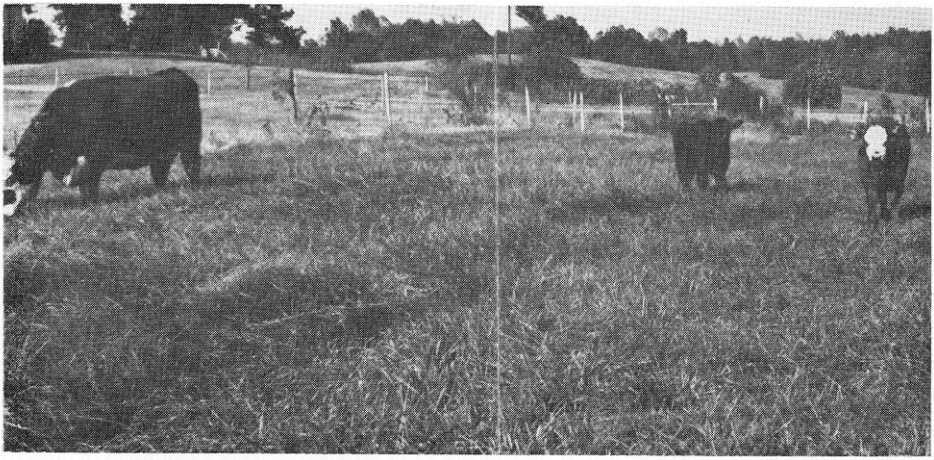

GOAR TALL FESCUE

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TALL FESCUE (***Festuca*** *arundinacea*) is the most important cool season perennial grass in Alabama. Grown on more than 400,000 acres in the State, this grass is mainly used for winter and spring grazing. In addition it is planted for roadside cover and turf.

Goar tall fescue is a new variety in the Southeast. When properly fertilized, Goar can he expected to furnish more forage during the critical winter period than standard tall fescue varieties.

VARIETY DESCRIPTION AND ORIGIN

Goar tall fescue is a deep-rooted, long-lived cool season perennial grass. In appearance it resembles Kentucky 31 variety, but it matures seed 1 to 2 weeks earlier in the spring. Seedling vigor, leafiness, and palatability are similar to Kentucky 31.

This variety was selected at the Imperial Valley Field Station, El Centro, California, by L. G. Goar. The original plant introduction came from Hungary. The Goar variety was released by the California Crop Improvement Association in 1946.

TITLE PHOTO: Goar fescue under grazing at the Piedmont Substation, Camp Hill.

FORAGE YIELDS

Goar has been tested since 1960 at 7 locations by Auburn University Agricultural Experiment Station. In these replicated tests, fescue varieties were clipped 3 to 5 times during autumn, winter, and spring.

AGRICULTURAL EXPERIMENT STATION

E. V. Smith, *Director* **AUBURN UNIVERSITY** Auburn, Alabama

TABLE 1. COMPARISON OF TOTAL AND WINTER FORAGE PRODUCTION OF TALL FESCUE VARIETIES AT SEVEN ALABAMA LOCATIONS, 1961-64

Location[1] and soil type	Nitrogen per acre per year	Season[2]	Per acre yield of dry forage			
			Gaar	Ky. 31	Alta	Kenwell
	Lb.		*Lb.*	*Lb.*	*Lb.*	*Lb.*
Tennessee Valley Substation, Decatur clay	120	Winter	1,316	1,071	1,068	966
		Total	4,949	5,363	5,386	4,854
Alexandria Experiment Field, Decatur *clay*	120	Winter	1,802	947	1,151	.....
		Total	3,534	2,756	2,927	.....
Alexandria Experiment Field, Taft silt loam	120	Winter	1,573	869	.....	.....
		Total	5,319	5,080	.....	.....
Plant Breeding Unit, Cahaba fine sandy loam	160	Winter	1,461	769	.....	.....
		Total	5,693	4,756	.....	.....
Tuskegee Experiment Field, Boswell loam	120	Winter	741	246	615	175
		Total	3,234	3,469	3,404	2,938
Black Belt Substation, Eutaw clay	100	Winter	691	462	521	504
		Total	3,188	3,531	3,321	3,366
Monroeville Experiment Field, Magnolia fine sandy loam	80	Winter	1,298	837	1,170	727
		Total	2,674	2,487	2,665	2,004

[1] Data from Tuskegee and Monroeville Experiment Fields are for 2 years and that from the Black Belt Substation covers 4 years; all others are 3-year results.
[2] Winter refers to period from January to early April.

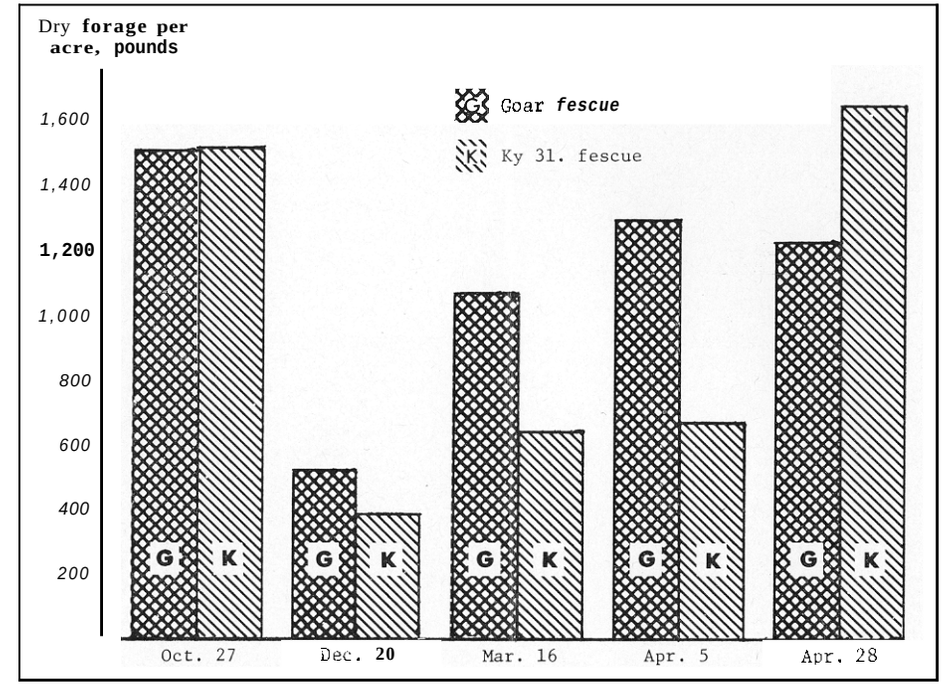
Total yields of Goar, generally, have equalled those of Kentucky 31, Alta, and Kenwell, Table 1. Yields of all varieties were low at the Monroeville and Tuskegee Experiment Fields and the Black Belt Substation. At the Alexandria Experiment Field, yields were high on Taft silt loam soil but lower on Decatur clay.

Winter production is often more important than total yield. Goar made more winter growth than Kentucky 31 at all locations. Winter yield differences between the two varieties generally are greater following the year of establishment. Alta was more productive than Kentucky 31 at most locations, but generally did not equal the earliness of Goar. Kenwell made the least growth of any variety during the winter period.

Autumn growth of Goar and Kentucky 31 are similar, but spring growth of the latter variety is greater. Typical seasonal forage distribution of the varieties is illustrated by l-year Tallassee data presented in the graph. More winter growth of Goar results in a longer and more uniform grazing season.

Goar stands persisted well at all locations but two. At the Black Belt Substation there was a 20 per cent stand loss of Goar and Alta, but no loss of Kentucky 31 after 4 years. The small plot experiments at Tuskegee Experiment Field were on poorly drained soils. No specific disease other than leaf blight (*Rhizoctonia solani*) was isolated from plants in these tests. In a droughty hillside field planting at Tuskegee, stands of Goar were nearly eliminated whereas Kentucky 31 had only small losses.

Goar fescue, right, was taller than Kentucky 31 variety, left, when photographed at the Alexandria Experiment Field, March 1962.



Seasonal forage yield of Goar and Kentucky 31 varieties of fescue is illustrated by this 1966-67 winter production data from the Plant Breeding Unit, Tallassee.

FORAGE QUALITY

Forage quality of Goar appears to be similar to other varieties during autumn and winter. In spring, however, Goar quality can be expected to decline faster because of its earlier maturity. Dry matter digestibility determinations were made by placing nylon bags of forage for 24 hours in steers having a rumen fistula. Digestibility of Goar was high in February and March but declined in April, Table 2. Goar forage digestibility was slightly lower than Kentucky 31 in March and April.

TABLE 2. DRY MATTER DIGESTIBILITY OF TALL FESCUE VARIETIES, PLANT BREEDING UNIT, TALLASSEE, 1967

Variety	Dry matter digestibility		
	Feb. 23	Mar. 20	Apr. 25
	Pct.	*Pct.*	*Pct.*
Ky. 31	73	78	58
Goar	73	71	49

Pastures of Goar have been grazed with brood cows and calves with satisfactory results. Potential toxicity or "fescue foot" problems are probably similar to that of other tall fescue varieties.

ESTABLISHMENT

Successful establishment of tall fescue calls for planting 10-15 pounds of seed per acre in September or October on a well prepared seedbed. Ideally, Regal ladino clover should be planted with tall fescue to provide high quality forage for a longer season. Ladino clover stands persist longer if tall fescue is planted in rows 12 to 24 inches apart than if broadcast or seeded in narrow drill rows.

Only *certified* seed of Goar should be planted to ensure varietal purity.

MANAGEMENT

Heavy grazing should be avoided the first winter to permit establishment of a

TABLE 3. AUTUMN FORAGE PRODUCTION OF GOAR TALL FESCUE AS AFFECTED BY SUMMER MANAGEMENT, PLANT BREEDING UNIT, TALLASSEE, 1965-1966

summer treatment[1]	Per acre yield of dry forage in autumn	
	1965	1966
	Lb.	*Lb.*
No cutting	2,359	1,746
Cut in July	1,801	1,616
Cut in June	2,038	1,141
Cut in June and July	2,090	1,128

[1] On all treatments the last spring harvest was in early May. Forage and residue of all treatments was cut and discarded in early September.

good sod. Goar fescue must be rested during and after seed formation. Cutting in early June sharply reduced autumn growth the second year of an experiment at the Plant Brqeding Unit, Table 3. This is probably because plant food reserves are stored at that time for rapid autumn growth. Summer rest is also important in maintaining fescue stands.

Maximum autumn and winter growth of Goar fescue can be obtained only with adequate fertilization – phosphorus, potassium, and lime – according to soil test and nitrogen at the rate of 50 to 60 pounds per acre in September. and again in February unless clover stands are adequate to supply sufficient nitrogen.

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