

Forage Research in Texas

Departmental Technical Report No. 81-12

Department of Soil and Crop Sciences

Project: H-6457

Worker: E.C. Holt

Location: College Station

EVALUATION OF EXPERIMENTAL CULTIVARS OF KLEINGRASS

OBJECTIVE:

To determine the yield of experimental synthetic cultivars selected for seed production.

PROCEDURE:

Single-row plots, 1 m spacing, 6 m long, established in early April 1971 by transplanting 20 rooted seedlings per plot. Fertilized with 48-48-48 at planting and each March and 40-0-0 following each cutting. The number of cuttings each year is shown in Table 1.

RESULTS:

Forage yields exceeding 4 tons per acre were obtained with the top yielding cultivars in each of the first two years. Yields declined in the third year to 3 tons or less but recovered in the fourth year.

All of the experimental materials except PMT 581, PMT 969 and 68-14 were selected for seed production. 63-7 and 64-5 were first cycle selections for seed production based on 7 and 5 parental clones, respectively. 67-11 resulted from a second cycle of selection. Forage (vegetative) yield performance of these cultivars indicates that either selection pressure for seed production or inbreeding resulting from the narrow gene base of 5 to 7 parent clones, or both resulted in reduced vigor. 70-17 resulted from collecting O. P. seed from the largest plants in a 67-11 polycross progeny nursery planted adjacent to a robust source. 68-13 is a polycross of the tallest plants in the same source from which 68-12 was selected for seed production. Forage yield of 70-17 and 68-13 were not significantly different from that of Kleingrass 75. These results indicate that not only can vegetative vigor be maintained but also that selection for vegetative vigor is necessary along with selection pressure for other characteristics.

PMT 581 is a robust glaucous type with generally poorer seed production than the green types of which Kleingrass 75 is typical. PMT 581 was the highest yielding entry initially but had declined to the lowest yielding entry in the fourth year. PMT 581 was the only entry showing a fairly consistent decline in yield over time. The yield pattern of most other entries was variable.

Forage yield of experimental cultivars of Kleingrass, University Farm College Station.

Cultivar	Pounds of Dry Forage Per Acre				Average
	1971	1972	1973	1974	
Kleingrass 75	7985 bc ¹	9793 a	6339 a	8310 a	8082
70-17	8021 b	9769 a	5992 ab	7426 bc	7802
68-13	8365 b	9448 ab	5577 bc	7445 bc	7712
PMT-581	9406 a	8959 ab	5116 cde	5318 f	7200
64-5	8195 b	8634 abc	4833 de	7146 c	7202
PMT-969	7880 bcd	8909 ab	4652 e	7623 b	7266
68-12	7052 de	9288 ab	5565 bc	6537 d	7110
63-17	6120 e	8259 bc	5364 bcd	7189 c	6733
67-11	7423 bcd	7535 d	4524 c	5611 e	6273
68-14	65384 f	7535 d	4933 cde	6919 cd	6193
No. of Cuttings	3	4	3	3	

¹ Values within a column followed by the same letter do not differ significantly.