

FORAGE SORGHUMS

When to Plant in the Mesa Area

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How can I get the most for my money? This is a familiar question in agriculture just as in any business. Personnel in sorghum investigations at The University of Arizona are continually trying to help answer this question for Arizona farmers.

A "date-of-planting" test was conducted at the Mesa Experiment Station in 1960 to check for optimum dates of

(Continued on Next Page)

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Table 1. Shown below are calculated daily growth rates in tons per acre by dates of planting of two silage sorghums.

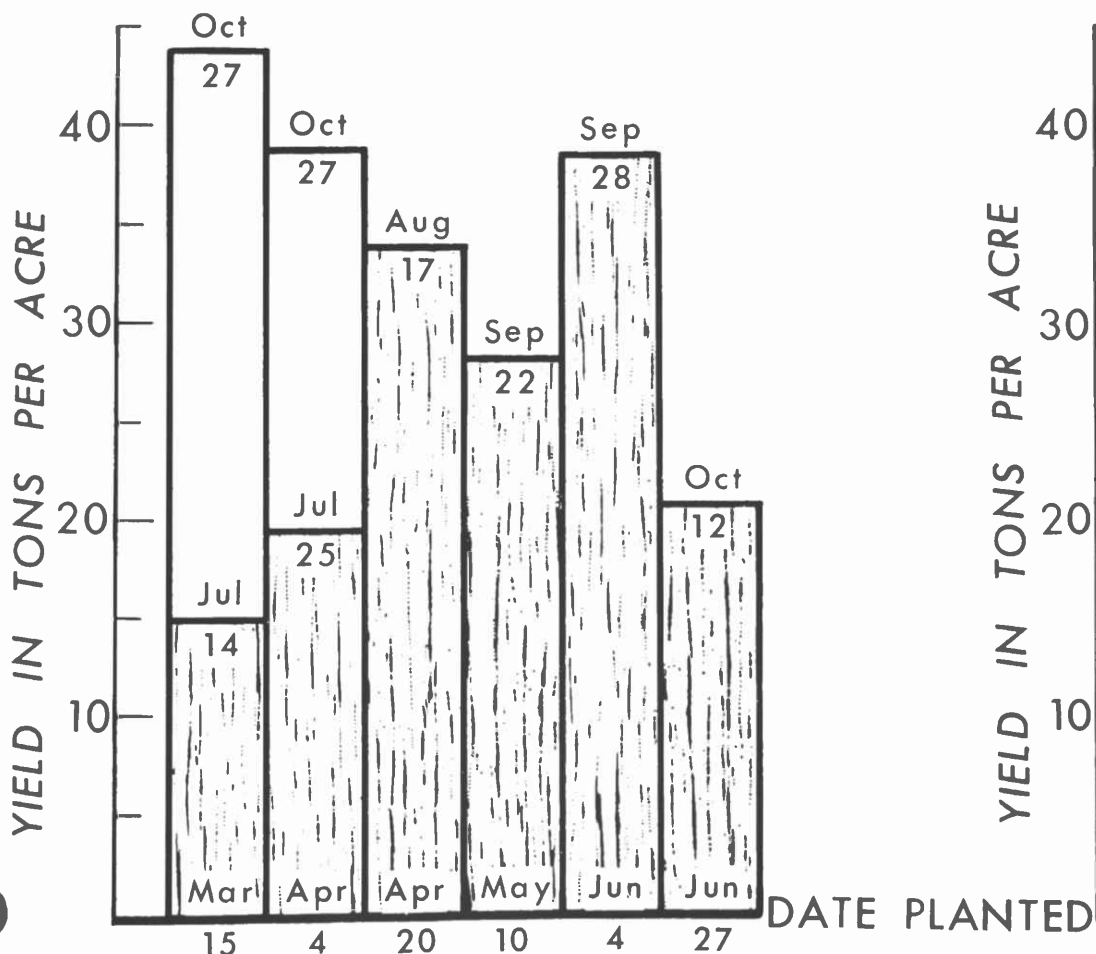
LINDSEY 101F

Date Planted	Days to Cut	Yield in T./A.	Growth Rate in T./A. Per Day
March 15	121	14.86	.123
April 4	112	18.47	.165
April 20	119	33.40	.281
May 10	135	27.69	.205
June 4	116	37.42	.323
June 27	107	20.69	.193

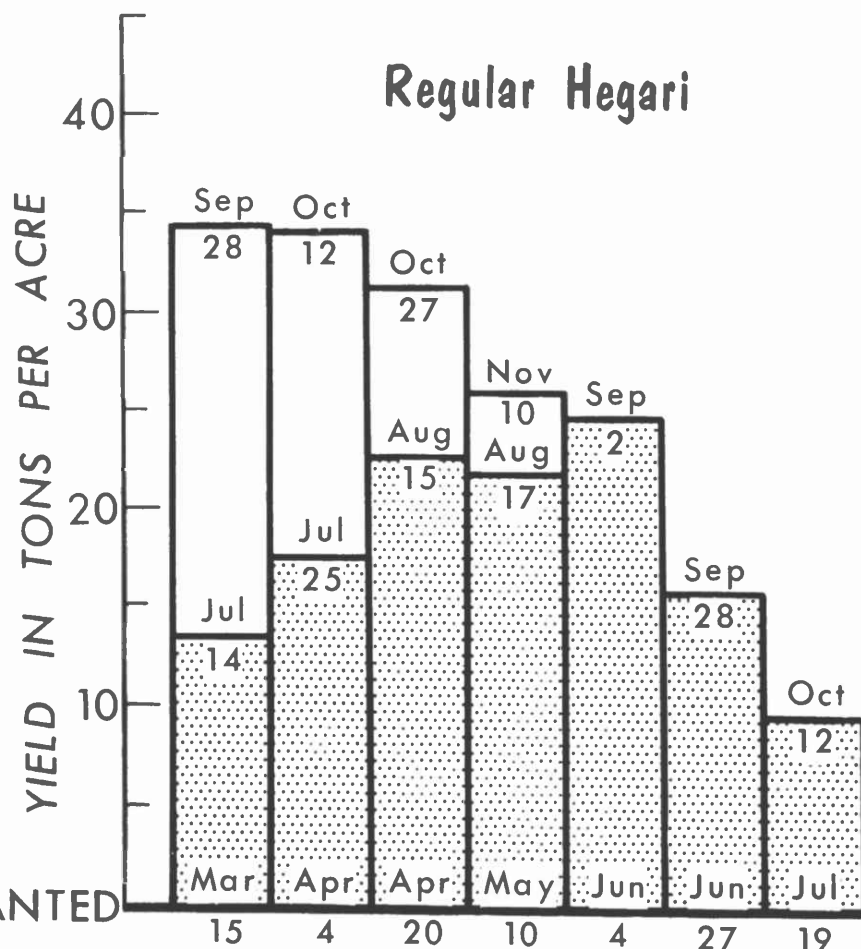
REGULAR HEGARI

Date Planted	Days to Cut	Yield in T./A.	Growth Rate in T./A. Per Day
March 15	121	13.45	.111
April 4	112	17.56	.157
April 20	117	22.43	.192
May 10	99	21.70	.220
June 4	90	24.46	.272
June 27	93	15.30	.165
July 19	85	9.03	.106

Lindsey 101 F



Regular Hegari



YIELDS IN TONS per acre of silage from Regular Hegari and Lindsey 101F, planted about every three weeks at Mesa in 1960. Figures adjusted for 30 per cent dry matter. The shaded portions of these columns show yield and date of first cutting; unshaded is yield and date of second harvest.

planting of forage sorghums. Highest yield (tons per acre) was assumed to indicate the most desirable period to plant. These results, although for only one year, showed a great difference in tonnage of forage produced at different dates of planting in the Mesa area.

Used Two Varieties

Two different forage sorghums were used: Regular Hegari, a commonly grown variety, and Lindsey 101 F, a commercial hybrid which was well adapted to the area. Plantings were made about every three weeks beginning on March 15. Yields in tons of fresh silage per acre have been adjusted at 30 per cent dry matter for comparison and are given in our graph. All harvests were made as near to soft dough stage of grain development as possible which correlates reasonably close to the 30 per cent dry matter stage that is desired by most feeders.

The total seasonal yield is measured by the full height of the bars, with the shaded portions indicating the first cut from each planting date. The total yield for the season is, of course, highest for the earliest planting date and decreases for both varieties with progressively later planting dates. The selection of a proper planting date can be just as important in obtaining high production as is proper choice of a variety or hybrid seed.

It is important to learn from these data what is the best time to plant to get the highest yield of silage from a single cutting. This is important to the Arizona farmer who may have a tight crop rotation schedule on his land, and wishes to make each crop return the most for his money.

First of June is Best

The highest single cut yield was obtained with the June 4 planting date. This indicates that in the Salt River Valley area the latter part of May or the first part of June is generally the best planting date for forage sorghums to get the most tonnage. Much smaller yields result from either earlier or later plantings. Farmers should realize that there is no one high yield from a particular recommended variety or hybrid.

'Rate of Gain' Sorghumwise

Some more interesting data were obtained by dividing the total yield in tons per acre by the number of days it took to grow the crop for each date of planting. This rate in tons per acre per day of silage is much like the rate of gain per day in beef cattle. Table I shows a peak daily growth rate for the June 4 planting. The hybrid Lindsey 101F shows a higher rate for most dates than the standard variety Regular Hegari. Here, again, the use of a hybrid is little different than

selecting a type of feeder cattle that will give you the highest daily gains.

Earliness Means Protein

The quality of forage harvested (TDN) as measured by laboratory analyses for digestible laboratory nutrients (DLN) and protein show some interesting trends. In Table II are given the per cent DLN and per cent protein on a dry matter basis for each cutting by date of planting. Note the higher per cent DLN and lower per cent protein for all second cuttings when compared to first cuttings. Also there was a general continuous decline in per cent protein as the season progressed.

Sorghum is quite responsive to photo-periodic effects and temperature in its growth rate, and temperature may also have a pronounced effect on the chemical composition of a plant. A study now under way seeks to determine response of sorghum genotypes at various altitudes (temperatures) and the same day lengths. Already this study is beginning to yield some interesting results. This study will be reported upon as soon as there are sufficient results to warrant conclusions helpful to farmers.

Arizona Active in 'Service to Youth'

Arizona continued as an active participant in the "Service to Youth" programs of the National 4-H Club Foundation last year, according to the foundation's annual report just published.

The foundation handles the international farm youth exchange program, operates the national 4-H center in Washington, D. C., trains professional workers and conducts experimental projects and studies.

Arizona took part in the youth exchange program by playing host to John J. Park of England. Park was the guest of two Arizona families—Mr. and Mrs. John Heward of Holbrook and Mr. and Mrs. D. L. Scott of Morenci.

Arizona also sent Mrs. Audrey M. Davis, home agent in Mohave County, to the annual National Workshop in Human Development and Human Relations Training.

Listed among the financial sponsors of the foundation's programs was the United Dairymen of Arizona, Tempe.

Thomas M. Ware, a native of Globe and president of International Minerals and Chemical Corp., Skokie, Ill., was named to the National 4-H Sponsors Council, an executive group that advised on the financial development of the program of the foundation.

Table II. Per cent digestible laboratory nutrients and per cent protein of two silage sorghums by date of planting and cutting.

LINDSEY 101F				
Date Planted	First Cutting		Second Cutting	
	% DLN	% Protein	% DLN	% Protein
March 15	74.5	7.79	75.0	3.19
April 4	67.0	5.33	78.0	3.34
April 20	63.0	6.30		
May 10	72.5	5.19		
June 4	67.5	4.93		
June 27	66.0	3.71		

REGULAR HEGARI				
Date Planted	First Cutting		Second Cutting	
	% DLN	% Protein	% DLN	% Protein
March 15	73.5	7.41	75.0	4.57
April 4	68.5	5.54	78.5	4.57
April 20	69.5	6.97	78.0	4.37
May 10	68.5	6.20	73.5	4.70
June 4	70.5	4.80		
June 27	80.5	4.57		
July 19	77.0	3.24		