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## Forage and Grain Yields of Barley, Wheat and Oats

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Introduction

Interest in small cereal grain silages for beef cattle has increased in recent years. Two years' research at this station (Prog. Rpt. 262) has shown: (1) winter barley and winter wheat had similar forage yields and (2) forage yields were highest in the dough stage of plant growth and lowest in the boot stage. In this trial, we continued to measure effects of type and variety of cereal grain on forage and grain yields.

Experimental Procedure

Plots were grown at the South Central Kansas Experiment Field near Hutchinson and at the Animal Science and Industry Farm near Manhattan in 1975-76. Two winter barley varieties used were Kanby and Paoli; hard red winter wheat varieties were Eagle and Sage; soft red winter wheat varieties were Abe and Arthur-71 and spring oat varieties were Lodi, Pettis and Trio. Varieties at Hutchinson were replicated four times; at Manhattan varieties were not replicated. All varieties were harvested for forage in the dough stage. Hutchinson plots were hand-harvested by mower - clipping a 60-square-foot area from each plot; Manhattan plots were machine-harvested. Grain yields were determined by hand-harvesting three, 12-square-foot areas from each plot.

Results

Forage and grain yields are shown in Table 18.1. Forage yields are expressed as tons of 60% moisture forage per acre; grain yields are bushels of 12%-moisture grain per acre.

At Manhattan, forage yield was highest for Abe wheat; lowest for Lodi oats. Grain yields were reduced by a late freeze (May 3, 1976), dry weather conditions and an outbreak of barley yellow dwarf.

At Hutchinson, forage yields were not affected by type or variety and were similar to yields obtained in 1975 (Prog. Rpt. 262). The 1976 average forage yield was 9.0 tons for barley, 9.5 tons for wheat and 9.0 tons for oats. The range in forage harvest dates was 29 days at Manhattan (June 2 to July 1) and 33 days at Hutchinson (May 20 to June 22).

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Table 18.1. Forage and grain yields of barley, wheat and oat varieties.

Location and variety	1976 forage harvest date	Forage yield tons/acre <sup>a</sup>	Grain yield bu./acre <sup>b</sup>
<hr/> <b>Barley</b> <hr/>			
Manhattan Kanby	June 2	8.27	58.0
Hutchinson Kanby	May 20	10.03	77.8
Paoli	May 20	8.78	65.2
<hr/> <b>Wheat</b> <hr/>			
Manhattan Abe	June 6	11.38	20.8
Arthur-71	June 6	7.63	22.0
<hr/> <b>H u t c h i n s o n</b> <hr/>			
Abe	June 4	9.27	54.4
Arthur-71	June 4	9.53	55.6
Eagle	June 4	8.84	41.1
Sage	June 4	9.76	50.1
<hr/> <b>Oats</b> <hr/>			
Manhattan Lodi	July 1	6.28	19.9
Trio	June 14	7.07	32.9
<hr/> <b>Hutchinson</b> <hr/>			
Lodi	June 22	8.27	34.4
Pettis	June 16	9.64	72.0

<sup>a</sup> Adjusted to a 60% moisture basis.

<sup>b</sup> Adjusted to a 12% moisture basis.