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Research

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## DORMANT-SEASON SEEDING OF ALFALFA

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Alfalfa is a high value crop in southwest Kansas, with approximately 220,000 acres in production. Establishment of 8–10 plants per square foot is desirable for new stands, and growers usually accomplish this with the recommended spring-planting time of mid-April to mid-May or the recommended fall-planting time of mid-August to mid-September. However, because of grower interest in completing seeding before other spring activities, we evaluated some very early planting times. The objective was to learn what stand establishment level could be achieved with these very early planting dates, because we expected freezing temperatures to reduce the survival of the earliest emerged stands.

### **Procedures**

Alfalfa was seeded during the late winter through spring (February 1, March 1, April 1, and May 1). Plantings were initiated at a seeding rate of 15 lbs/acre over a 3-year period (1994–1996). Seven hundred and fifty seeds treated with Apron 25w fungicide were planted 1/2 inch deep in a silt loam field site in each of the three replicated plots on each date of each year. Each individual plot was 10 feet long with 12-inch row spacing.

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## Results

Because of dormancy and variable germination, delay of alfalfa seed emergence for each date was somewhat extended. The initial emergence date for each planting date is shown in Table 1. Emergence began earliest for the February planting date. This resulted in the greatest plant size on June 1 of each year for this planting date (Table 2).

The stand portion lost to freezing temperatures declined with later plantings, but only the May 1 plantings totally avoided this peril. The percentage of planted seed that emerged, survived, and was counted on June 1 is shown for each planting date in Table 3.

## Conclusions

Spring planting of alfalfa generally should be delayed until after the danger of frost is over. Seeding as early as February 1 produced spring stands with the largest plant size. However, plant loss from freezing temperatures caused severe stand reductions. Progressively later plantings improved stand survivability. The relative success of early planting dates resulted in final seed establishment percentages of 6% for February 1, 10% for March 1, 28% for April 1, and 36% for May 1. These data suggest that April or May seedings of alfalfa will provide the best stands.

**Table 1. Emergence date of alfalfa for four planting dates.**

Planting Date	1994	1995	1996	Average
	---- (month-day) -----			
February 1	4-12	3-21	4-20	4-7
March 1	4-15	3-21	4-20	4-2
April 1	4-17	4-24	5-2	4-24
May 1	5-25	5-7	5-18	5-17

**Table 2. Stand height of alfalfa on June 1 for four planting dates.**

Planting Date	1994	1995	1996	Average
	---- (inches) -----			
February 1	12	10	9	10
March 1	11	9	7	9
April 1	10	7	5	7
May 1	6	4	3	4

**Table 3. Percentage of seed established as plants on June 1 for four planting dates.**

Planting Date	1994	1995	1996	Average
	---- (%) -----			
February 1	9	2	7	6
March 1	14	6	9	10
April 1	26	24	35	28
May 1	38	29	42	36
LSD (5%)	4	6	6	

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