

FALL SEEDING — WILL IT WORK IN INTERIOR ALASKA?

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INTRODUCTION

Short growing seasons in interior Alaska, averaging 90 days in Fairbanks, are a major factor affecting crop production. In the past, volunteer germination of seed from previous years crops has been observed in the field. These volunteer plants tend to get a head start on spring seeded plants, indicating that the use of fall planting could have potential advantages. Spring planting is often delayed due to soil wetness following snow-melt. This problem could be avoided with fall seeding. Seedbed preparation causes rapid drying of the surface of silt loam soils, which are common in interior Alaska. This, combined with low rainfall during spring, often results in

moisture levels which are too low for good germination and early growth of shallow planted seeds. Since the soil would not be disturbed in the spring, seeding in fall might allow crops to take advantage of moisture available from snow-melt. Also, fall seeding has the potential of reducing the workload during the short spring planting period.

MATERIALS AND METHODS

Field studies were conducted in Fairbanks in the fall of 1989. Plots measuring 40 feet by 6 feet, with 6 rows of 12 inch spacing were planted with a plot drill with a single disk in the field of 1989. Plots measuring 40 feet by 6 feet, with 6 rows of 12 inch spacing were

planted with a plot drill with a single disk opener on two fall planting dates; 5 and 11 of October 1989. By 11 October the ground was permanently frozen and a light snow cover was present. Large seeded and small seeded legumes, Nip oats and a forage kale were planted (Table 1). Two seeding depths were used depending on the crop. Non-quantitative observations were made on 9 and 24 May 1990. Plots were visually rated at four levels; 0, poor, medium and good.

RESULTS

Large seeded legumes did not germinate, apparently due to very poor winter survival of the seeds. Most pea seeds that we were able to find in the spring had rotted. Two of the small seeded legumes, Altaswede red clover and Norgold sweetclover had medium germination for both fall planting dates. Nip oats had medium germination (Table 1) and the forage kale had poor germination. In the spring, soil cracking and drying was also observed in the seed beds which may have contributed to poor germination.

SUMMARY

The small seeded legumes and Nip oats showed medium winter seed survival and subsequent germination and although none were rated as good, there may be potential for their use in fall seeding. The large seeded legumes and forage kale indicated poor or no seed survival and subsequent germination thus there is no potential for their use as fall-seeded crops. S. Sparrow and C. Knight obtained poor stands in a study of fall seeding of rapeseed at Delta (data not yet published). Additional fall seeding trials and early frost seeding in the spring with small seeded legumes and grains are indicated. Fall seeding under conditions other than fallow soil need to be tested (e.g., seeding into sod or crop stubble).

NOTE: Research Progress Reports are published by the Alaska Agricultural and Forestry Experiment Station to provide information prior to the final interpretations of data obtained over several years. They are published to report research in progress but may not represent final conclusions.

Table 1: List of fall seeded plants and germination success the following spring.

Common Name	Species	Variety	Germination Success
Large Seeded Legumes			
White Lupine	Lupinus alba	Primorski	0
Peas	Pisum sativum	Tessa	0
Peas	P. sativum	Poneka	0
Peas	P. sativum	German 1680	0
Peas	P. sativum	M86-P40	0
Peas	P. sativum	Cisco	0
Peas	P. sativum	Maxi	0
Small Seeded Legumes			
Red Clover	Trifolium pratens	Altaswede	medium
Sweetclover	Melilotus officinalis	Norgold	medium
Other Crops			
Oats	Avena sativa	Nip	medium
Forage Kale	Brassica oleracea	Maris kestrel	poor