

# THE NISBET SEED DRILL IN PRAIRIE RESTORATION

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## INTRODUCTION

The Nisbet seed drill was used with excellent results for prairie establishment on the Knox College Biological Field Station during the summer of 1970. The results of this planting far exceeded any previous planting of the Knox prairie restoration project. The Nisbet drill has been used with good results in the planting of native grasses on rangeland in the western and central parts of the great plains but it is only recently that its use has extended into the higher rainfall areas of the prairie peninsula to the east. With the rapidly growing interest in the use of prairie plants on college and university field stations, roadside right-of-ways, public parks, and industrial site plantings, improved and practical methods of establishment of the native grassland species are greatly needed.

## METHODS AND RESULTS

The area to be planted had been in a pure stand of orchard grass, Dactylis glomerata, for ten years. The ground was prepared by plowing the fall before, and discing very shallowly up to the time of planting. A thirty-foot strip was kept mowed around the area to be planted to reduce orchard grass and weed contamination.

Approximately two acres were planted, drilling grasses and forbs at two different times. Instructions are provided for setting seeding rates. Grasses were planted on one area on June 30 and on a second area on July 15. Only the drill's large seed boxes were used and set at a seeding rate of 15 lbs. per acre. The areas to be planted were gone over three times (Figures I and II)<sup>1</sup> giving an actual seeding rate of 45 lbs. bulk weight per acre. This also resulted in reduced visual row effect and closer spacing than the eight inch rows that result from one pass of the drill.

The grass seed was obtained from Wilson Seed Farms (Jim Wilson), Polk, Nebraska, with four species mixed and planted together. Table 1 summarizes the species and varieties of grasses planted, their proportions mixed, and the bulk weight and lbs. of pure live seed (PLS) planted per acre.

Rains followed two days after the first grass planting and by July 6 newly germinated grass seedlings were emerging. After the grasses were well up the earlier planting was hand weeded. This was easily accomplished because the area was small and there were relatively few weeds.

Because of an unusually wet mid-summer with much rain, forbs could not be drilled into the plantings until August 10. The forb seeds had been mixed with damp vermiculite during cold conditioning and it was found that this mix had to be partially dried before it would feed through the drill. Dry vermiculite or soil could be added to accomplish the same end. Seeding rate was speeded up to about twice that of grass drilling to get more forbs into the ground in fewer passes. The drill easily cut through and planted the forbs in the newly established grass sod (see Figures III and IV)<sup>1</sup>. About 40 lbs. of complex forb-vermiculite mix were evenly drilled into the two-acre area. Some seeds were already germinating in the mix but were easily drilled, survived, and became established. Mid-August rains resulted in good germination of the late-planted forbs.

The total time required to drill the two acres (forbs and grasses included) was four hours.

At the time of this writing it is uncertain how well the forbs will survive and compete with the dense and well-established stand of Wilson variety prairie

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See Photo Section for figs. I-V.

grasses (Figure V). It is the author's present opinion that the forbs should be planted at the same time (with separate passes at the faster rate) as the grasses to assure establishment and survival in the competitive grass stand.

It is also not yet possible to determine the proportions of the four grass species that have actually been established. It is only obvious that an excellent mixed stand has emerged, almost completely free of weed competition.

The Nisbet seed drill when used in conjunction with the vigorous varieties of commercial native grass seed now available promises to greatly augment current efforts to reestablish our native grassland communities.

Table 1: Species, Variety, Proportion by Bulk Weight and Pounds Pure Live Seed Planted Per Acre.

SPECIES AND VARIETY*	PROPORTION	POUNDS BULK	LBS. PURE LIVE SEED
Andropogon gerardi Kaw Big Bluestem	2	15	8.6
Sorghastrum nutans Certified Nebraska 54 Indian Grass	2	15	10
Andropogon scoparius Native Nebraska Little Bluestem	1	7-1/2	2.7
Panicum virgatum Certified Blackwell Switchgrass	1	7-1/2	6.6

\* Jim Wilson Seed Farms, Polk, Nebraska

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 ...the time of sowing it is uncertain how well the forbs will survive ...  
 ...compare with the dense and well-established stand of Wilson variety prairie ...  
 ...Photo Section for figs. 1-5.