

H – 1917

ALFALFA INTER-SEEDED PASTURE GRAZING TRIAL – 1982

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The Alfalfa Inter-seeded Pasture Grazing Trial was seeded in May of 1977. A pasture type alfalfa (Travois) was inter-seeded into 10 acres of mixed grass prairie using a mechanical sod control method. The seeding rate was 4 pounds per acre. Data were collected from two other similar native range pastures for comparative purposes. One of these pastures, 12 acres in size, was annually treated with 50 pounds of Nitrogen per acre and the other pasture, 18 acres in size, has had no treatments and was used as the control. The three pastures were annually grazed with 7 to 10 cow/calf pairs primarily during the month of July. Animal performance and herbage production data were collected and were used for a comparison between the treatments.

The alfalfa inter-seeded pasture was not grazed in 1982 so that the alfalfa plants could recover from drought conditions of the previous years. No animal data were collected in 1982. The alfalfa plant density counts, herbage production and quantitative species composition data were collected.

The year of establishment (1977) was favorable for good alfalfa seed germination, but because of problems with the seeding mechanism, the distribution of the seed was uneven. In 1978, the mean number of alfalfa plants per meter row was 10.95. The mean number of plants per meter row was 1.34 in 1982. Much of this apparent decrease in alfalfa plant density can be attributed to the drought conditions of 1980.

The above ground herbage production (Table 1) was greatest in the fertilized pasture with 4546 pounds per acre. The alfalfa inter-seeded pasture produced 3068 pounds per acre with the alfalfa comprising nearly 30%. The control pasture had 2301 pounds of herbage per acre. The addition of 50 pounds of Nitrogen per acre nearly doubled the herbage production over the control. The alfalfa inter-seeded pasture had 33% increases in herbage production over the control.

The percent basal cover for the three pastures is shown in Table 2. The alfalfa inter-seeded pasture had the greatest percent basal cover of living plant material with 44.8%. The control and the fertilized pasture had 29.5% and 17.7% respectively.

The alfalfa inter-seeded pasture had the lowest amount of litter cover and the greatest amount of bare soil (Table 2). The fertilized pasture had the greatest amount of litter cover and lowest amount of bare soil (Table 2). The fertilized pasture had the lowest basal cover (Table 2) but had the greatest herbage production (Table 1).

Table 1. Above Ground Herbage Production, Given in Lbs./Acre, on the Three Pasture Treatments of the Native Range Inter-seeding Study, Dickinson Experiment Station, 29 July 1982

	Alfalfa Inter-seeded	Fertilized	Control
Grass and Forbs	2160	4546	2301
Alfalfa	908	0	0
Total	3068	4546	2301

Table 2. Percentage Basal Cover on the Three Pasture Treatments of the Native Range Inter-seeding Study, Dickinson Experiment Station, 1982

	Alfalfa Inter-seeded	Fertilized	Control
Litter	47.2	78.1	63.7
Soil	8.2	4.1	6.8
Grass	32.9	17.1	21.4
Forbs	5.5	0.4	1.4
Alfalfa	1.3	0.0	0.0
Club Moss	5.1	0.2	6.7