

DRYLAND LEGUME TRIAL

The dryland legume trial consisted of 9 varieties of alfalfa, Eski Sainfoin and Emerald Crown vetch. Seedings for this trial were made in 1967 with a good establishment of the alfalfa varieties and only fair success with the Sainfoin and Crown vetch. Stands of the Sainfoin and Crown vetch have seriously deteriorated and have been excluded from the trial in the 1971 season. The alfalfa varieties were harvested only once during the 1971 season. Lack of adequate moisture following the initial harvest resulted in poor regrowth and the decision against a second cutting later in the summer.

The 1971 yield data show a substantial reduction in yield when compared with the 1970 yields. Roamer and Ladak alfalfas were the highest yielding at 4794 and 4668 pounds of forage per acre, respectively (Table 1). The 1970 data showed Ladak and Roamer yields of 8175 and 8122 pounds per acre, respectively, with two cuttings. Near optimum growing conditions in 1970 resulted in yields well above average for all varieties tested. Yields from the 1971 harvest were considerably below the four-year average for all varieties of the legume trial.

Four-year average hay yields from the variety trial show Roamer alfalfa the highest yielding at 5853 lbs. / acre followed closely by Ladak at 5810 lbs. / acre (Table 2). Lesser yields in the order of 400 to 600 lbs. / acre were observed with Travois and Teton alfalfa, respectively. Other varieties of the trial produced considerably less with the lowest yield of 3982 lbs. / acre observed with Fremont alfalfa. The average total hay yield of all varieties combined was 4910 lbs. / acre for the four-year period.

**Table 1. Hay Yields (Dry Weight – lbs. / acre) and Composition in 1971
from Legume Plots Seeded in 1967**

Variety	Dry-Weight Yield – lbs. / acre		Total Yield- lbs. / acre
	Legume	Weeds	
Roamer	4790	4	4794
Ladak	4644	24	4668
Teton	4280	8	4288
Travois	4105	4	4109
Ranger	3674	7	3681
Vernal	3557	17	3574
Norseman	3553	35	3588
Dawson	3405	18	3423
Fremont	2493	280	2773
Emerald Crown Vetch	No stand	----	---- <u>1/</u>
Eski Sainfoin	No stand	----	---- <u>1/</u>
AVERAGE	3833	44	3877

1/ Not included in average.

Table 2. Four-Year Average (1968-1971) Hay Yields (Dry Weight - lbs. / acre) and Composition from Legume Plots Seeded in 1967

Variety	Dry-Weight Yield - lbs. / acre		Total Yield- lbs. / acre
	Legume	Weeds	
Roamer	5734	119	5853
Ladak	5659	151	5810
Travois	5310	94	5404
Teton	5180	119	5299
Vernal	4526	74	4600
Norseman	4464	129	4593
Ranger	4312	98	4410
Dawson	4114	126	4240
Fremont	3754	228	3982
Eski Sainfoin	3902	93	3995 ^{1/2/}
AVERAGE^{2/}	4784	126	4910

^{1/} 1969-1970 average only.

^{2/} Not included in average.

In general, the alfalfa stands have not deteriorated appreciably for the majority of varieties included in this trial. Some plant mortality is becoming apparent in the Fremont variety plots as evidenced by a continued increase in weed invasion and decline in hay production. Some early evidence of stand deterioration in certain plots was observed this season by way of uneven and spotty growth. This may have been due to uneven snow cover and other farming activities in the vicinity of the trial. It is anticipated that a new variety trial will be initiated in the spring of 1972 to include the presently available and newly released varieties for this region. Continued testing of alfalfa varieties and other legumes for possible adoption for grazing or for hay production will remain an essential part of our legume and forage program at the Dickinson Experiment Station.