

## GRASS ADAPTATION TRIAL

The grass adaptation trial seeded in late summer in the 1972 season was clipped for the third year in the 1975 season. The stands of one variety, basin wildrye, improved considerably in the 1975 season, although the plants were still widely spaced. Some of these plots were clipped for yield. The Alti wildrye plots continued to be overgrown with slender wheatgrass and were not clipped in 1975. The plots of Mandan ricegrass and Indian ricegrass continued to be in very poor shape, and to date they have not been clipped as part of the trial.

Average yields of the varieties for the 3-year period of the trial are given in Table 9. Overall yields in the 1975 season were only slightly better than in the 1974 season, averaging 3628 lbs/acre in 1975 as against 3505 lbs in 1974. The highest yield of any variety in 1975 was from Turkey brome, 5679 lbs/acre. This variety was also highest yielding in the 1974 season. These yields were obtained from a rather thin stand of exceptionally robust plants. Basin wildrye (SCS) appears as second highest producer in 1975 at 5286 lbs/acre. However, this production was from only part of the plots, with part remaining in unsatisfactory condition. Topar pubescent wheatgrass #759, Lincoln bromegrass, Topar pubescent wheatgrass (Pullman), and Nordan crested wheatgrass all yielded over 4000 lbs/acre. Mandan 404 brome, Lodorm green stipa, Sodar wheatgrass, western wheatgrass #456, and Basin wildrye (Pullman) all yielded over 3000 lbs/acre.

Durar hard fescue and sheep fescue are both inherently low producing varieties, being short, fine-leaved bunchgrasses, but the stands of these varieties continued to improve through the 1975 season, and would now be rated as excellent. Production of the two varieties at 2302 and 2270 lbs/acre was excellent for grasses of this type.

Topar pubescent wheatgrass #759, selected at the SCS Plant Materials Center at Bismarck, continued to appear somewhat superior to the same variety with the seed source from the Pullman, Washington Plant Materials Center. The North Dakota selection appears to be somewhat leafier than the Pullman material, although both are vigorous, high-producing strains.

Lincoln brome has continued to out-yield Mandan 404, but Mandan 404 does look somewhat better than Lincoln as a pasture grass. It is shorter, somewhat leafier, and is reported to have a somewhat better protein content throughout the growing season. Sodar wheatgrass, western wheatgrass #456, and Montana wheatgrass maintained good stands through the 1975 season. Montana wheatgrass (a selection from *Agropyron albicans*) does not seem as vigorous as the other two varieties. Sodar continues to exhibit a rather fine-leaved character as contrasted to the other two wheatgrass varieties. The stands of Lodorm green stipa and of green stipa (SCS) showed additional improvement in the 1975 season. The stands of these varieties, however, would still be rated at fair to low good. The Alti wildrye plots showed little or no improvement in the 1975 season. It is doubtful now whether these plots will become productive during the life of the trial.

<b>Table 9. Average yields of grass varieties in the grass adaptation trial seeded in 1972.</b>				
Variety	Dry-wt. yield - lbs/acre			3-year average yield
	1973	1974	1975	
Turkey brome	---	5355	5679	5526 <sup>1</sup>
Topar pub. whtgr. #759	3551	4042	4999	4197
Lincoln bromegrass	1512	5001	4280	3598
Topar pub. whtgr. (Pull.)	1646	3629	4237	3171
Mandan 404 brome	1630	3772	3587	2996
Nordan crested whtgr.	2199	2484	4176	2953
Lodorm green stipa	---	2418	3309	2864 <sup>1</sup>
Sodar wheatgrass	829	3804	3692	2775
Mandan wildrye	1427	3927	2872	2742

Durar hard fescue	1136	3794	2302	2411
Western whtgr. #456	1381	2689	3081	2384
Vinall Russian wildrye	471	3891	2766	2376
Montana wheatgrass	711	3679	2724	2371
Green stipa (SCS)	---	1850	2700	2275 <sup>1</sup>
Sheep fescue	---	2246	2270	2258 <sup>1</sup>
Basin wildrye (SCS)	---	---	5286	---
Basin wildrye (Pull.)	---	---	3706	---
Alti wildrye (SCS)	2614	--- <sup>2</sup>	---	---
Alti wildrye (Sask.)	1933	--- <sup>2</sup>	---	---
Average	1618	3505	3628	2993

<sup>1</sup>2-year average yields.

<sup>2</sup>Plots overgrown with slender wheatgrass and not harvested after 1973.

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