

Ranch  
Review

# Intermountain Ag.

December 2, 1971

## DRYLAND GRASS AND ALFALFA YIELDS FOUR TONS PER ACRE

The following results were obtained from the Melvin Myers dryland range experimental plot near Adin:

### 1970

	pounds air dry forage per acre	400# ammonia sulfate/acre	difference
Oahe Wheatgrass	4814	7062	2248
Greenar Wheatgrass	5258	8187	2929
Nordan Crested Wheatgrass	5677	7051	1374
Manchar Brome	5488	6687	1199

### 1971

	no fertilizer	500# Gypsum lbs. air dry forage/acre	500# Gypsum 225# Urea lbs. air dry per acre	225# Urea lbs. air dry/acre
Oahe Wheatgrass	6860	6740	7825	7340
Greenar "	6860	6980	8350	7225
Nordan Crested	5365	6780	7825	8350
Manchar Brome	5850	6740	7305	8555

The test plot was seeded on April 10, 1969. The pattern for the plot was a row of grass and a row of Vernal Alfalfa. Rows are one foot apart. There were three replications for each variety. Three foot strips were mowed in order to get yield information. The stand was excellent and the plants were mowed near ground level. Yield data from test plots is usually higher than field run production because there is no waste and the results come from small areas.

On February 19 1970, a 400# ammonia sulfate strip was applied across all the grasses and alfalfa. Harvest data was collected in late June. The yield figures represent averages from 3 replications.

When nitrogen was added the increase was about 20% over no fertilizer

The Greenar Wheatgrass yield was increased almost a ton and a half per acre. The average increase was about 1900 pounds per acre. There were indications of a fertilizer carry-over the following year but it was not measured. The 1970 spring was a favorable one for rain, therefore the fertilizer worked. If it had been a dry spring, results might have been different.

Fertilizer strips were applied on February 15, 1971. An attempt was made to find out if sulfur, nitrogen or combination was needed. Production data was taken June 23. The figures represent averages from three replications. Again the spring rains were favorable.

When the yields are totaled for the grass and alfalfa for the gypsum strip, it is doubtful if there were any real differences from no fertilizer. In pounds of air dry forage this would be about 1800 pounds per acre. If 400 pounds of ammonia sulfate were needed to get this increase, it would cost about \$12.00 per acre. There is a good chance that 200 pounds of ammonia sulfate per acre would give similar increases. Next year 200 pounds of ammonia sulfate will be applied across the area.

If one is looking for additional livestock feed, I would recommend Oahe or Greenar Intermediate Wheatgrass at about 10 pounds per acre. Fertilizer is not generally recommended at planting time because it might cause too much weeded competition to the seeded plants.

For further details on range seeding and fertilizing, contact the Farm Advisor's office at McArthur.

Sincerely,

*Walter R. Spivey*

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Farm Advisor

TEMPERATURE CHANGES CAUSED BY WIND

	30°	25°	20°	15°	10°	5°	0°	-5°	-10°	-15°	-20°	-25°
wind mph												
5	27	21	16	12	7	1	-6	-11	-15	-20	-26	-31
10	16	9	2	-2	-9	-15	-22	-27	-31	-38	-45	-52
15	11	1	-6	-11	-18	-25	-33	-40	-45	-51	-60	-65
20	3	-4	-9	-17	-24	-32	-40	-46	-52	-60	-68	-76
25	0	-7	-15	-22	-29	-37	-45	-52	-58	-67	-75	-83
30	-2	-11	-18	-26	-33	-41	-49	-56	-63	-70	-78	-87

MELVIN MYER'S DRYLAND RANGE PLOT (ADIN)  
 Row of grass - row of alfalfa  
 Harvest 4' x 9' - 6/23/71  
 Planted 4/10/69

		<u>Air Dry Weight</u>			
		Check	S	N+S	N
Oahe	I	6.5#	6.4#	6.0#	5.3#
Greenar	I	4.8	6.1	7.3	6.4
Nordan	I	4.2	5.6	5.8	6.7
Manchar	I	4.0	5.3	6.0	7.8
Nordan	II	4.0	4.5	6.0	7.3
Oahe	II	5.4	5.6	7.1	7.3
Manchar	II	4.8	5.0	5.8	7.5
Greenar	II	5.4	5.6	6.3	5.9
Manchar	III	5.7	6.4	6.3	7.5
Greenar	III	6.8	5.6	7.1	6.7
Nordan	III	5.1	6.7	7.6	6.7
Oahe	III	5.1	4.7	6.3	5.6

	ck	S	N	N+S
S	-1	1	-1	1
N	1	1	-1	-1
N+S	-1	1	1	-1

	ck	S	N	N+S
S	-1	1	-1	1
N	-1	-1	1	1
N+S	1	-1	-1	1

Variety	Fert	I	II	III	T <sub>e</sub>	$\bar{X}_t$	
Morban	Check	4.2	4.0	5.1	13.3	4.43	
	S	5.6	4.5	6.7	16.8	5.6	
	N	5.8	6.0	7.6	19.4	6.47	
	N+S	6.7	7.3	6.7	20.7	6.90	
	Temp		22.3	21.8	26.1	70.2	
Oatre	Check	6.5	5.4	5.1	17.0	5.67	
	S	6.4	5.6	4.7	16.7	5.57	
	N	6.0	7.1	6.3	19.4	6.37	
	N+S	5.3	7.3	5.6	18.2	6.07	
	Temp		24.2	25.4	21.7	71.3	
Manchar	Check	4.0	4.8	5.7	14.5	4.83	
	S	5.3	5.0	6.4	16.7	5.57	
	N	6.0	5.8	6.3	18.1	6.03	
	N+S	7.8	7.5	7.5	22.8	7.60	
	Temp		23.1	23.1	25.9	72.1	
Greenar	Check	4.8	5.4	6.8	17.0	5.67	
	S	6.1	5.6	5.6	17.3	5.77	
	N	7.3	6.8	7.1	20.7	6.90	
	N+S	6.4	5.9	6.7	19.0	6.33	
	Temp		24.6	23.3	26.2	74.0	6.17
	Total		94.2	93.5	99.9	287.6	

	Fertilizer			
	ck	S	N	N+S
T <sub>fert</sub>	61.8	67.5	77.6	80.7
$\bar{X}_{fert}$	15.45	16.88	19.40	20.17

LSD<sub>0.05</sub> = 3.51

Source	df	SS	MS	DF	SS <sup>R4</sup>	MS
Var Plots SS	47	44.7567				
Variety Plots (var)	11	7.6217				
Blocks	2	1.5404	.7702	.850	5.14	10.92
Variety	3	.6916	.2305	.236	4.76	9.78
Error (a)	6	5.4377	.9063			
Fertilizer	3	19.275	6.425	9.294 <sup>xx</sup>	3.01	4.72
Variety x Fertilizer	9	1.18	.131	.189	2.30	3.25
Error (b)	24	16.68	.695			

Source	df	SS	MS	DF	SS <sup>R4</sup>	MS
Fertilizer	3	19.275	6.425	9.294 <sup>xx</sup>	3.01	4.72
Sulfur	1	1.613	1.613	2.321	4.26	7.82
Nitrogen	1	17.521	17.521	25.210 <sup>xx</sup>	4.26	7.82
Nit + Sulfur	1	.141	.141	.203	4.26	7.82
Error	24	16.68	.695			