

Summary of Recent Results Compiled in 1972

W. F. Nuttall, Melfort Research Station

CEREALS (A) Melfort 1972

Yield of Betzes barley on stubble was increased by 116 lb/acre with 20 lb of S applied as gypsum (Table 1) with 11-48-0. A similar yield increase was obtained with ammonium sulphate and with additional ammonium nitrate added to bring the rate to 40 lb of N/acre. The high rate of nitrogen (120 lb/acre) depressed yield without the addition of sulphur (3114 vs. 2883 lb/acre), but by adding 20 lb of S the maximum yield of 3343 lb/acre was obtained. The 30 and 40 lb rates of S produced only slight yield increases at high rates of nitrogen (90 and 120 N/acre) and resulted in yield depression with lower N rates.

BETZES BARLEY ON STUBBLE - 1972

Melfort - Devon Wentz

Treatment				
N	P	S	Grain	Straw
	lb/acre		lb/acre	lb/acre
8.7	17.6	0	3114	2263
8.7	17.6	20	3230	2373
8.7	17.6	40	2983	2260
40	17.6	0	3170	2481
40	17.6	20	3263	2396
40	17.6	40	2999	2451
120	17.6	0	2883	2665
120	17.6	20	3343	3093
120	17.6	40	3132	3166
90	17.6	0	3220	2981
90	17.6	30	3232	2881

Soil Test - ppm

	P	NH ₄	NO ₃	S
0-6	27.59	1.5	9.16	1.59
6-12	17.81	1.8	8.69	2.11
12-24	7.91	1.7	2.81	1.70

Yields of Alfalfa and Bromegrass Pasture
as Affected by NP Fertilizers

FORAGES (B) Melfort 1972 (1971 data)

Yield response to NP fertilizers was significant on pasture which was in the fifth year of grazing (Table 1). Forage yields on pasture with animals fed supplementary barley (1200 lb/steer) were higher (3472 vs. 2666 kg/ha average of 3 ranges) than on pasture where no supplement was fed. Yield response to phosphate fertilizer was less on pasture with supplementary barley fed (224 vs. 448 kg/ha). Soil tests for P were higher on pastures with supplementary pasture (6.8 vs. 4.4 $\mu\text{g P/g soil}$) and this would account largely for the lower phosphate fertilizer yield response.

Average yield was 2890 kg/ha and 3203 kg/ha with 0 and 20 kg P/ha applied, respectively.

Yields of Alfalfa and Bromegrass
Pasture Affected by NP Fertilizer

Range C

Pasture Management (A)	P* (C) kg/ha	Nitrogen** (B) kg/ha ⁺					Mean
		0	45	90	135	180	
Put & Take	0	1590	1814	3114	3360	2890	2554
	17.6	1680	2554	3069	3136	4524	2979
Supplementary Barley	0	2016	3382	3853	3942	4144	3472
	17.6	2666	3450	3338	3875	4502	3562
Mean	0	1814	2598	3472	3651	3517	3002
	17.6	2128	3002	3203	3494	4502	3270
	Mean	1971	2800	3360	3584	4010	3136
Mean of 3 ranges		2083	2822	3270	3517	3674	3069

* Subunit effect of phosphorus was significant at 5% probability level.

** Subunit effect of nitrogen was significant at 1% probability level.

+ lb/ac = kg/ha x .9.