

NITROGEN REQUIREMENTS OF STUBBLE SEEDED CROPS

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1) Soil Test Correlation Studies

Fourteen strip tests were laid down in which ammonium nitrate was broadcast to supply 20, 30, 40, 60 and 80 lb N/acre including that supplied by 11-48-0 applied with the seed at 60 lb/acre. Evaluation of yield response was done by comparison of all treatments with complete check strips and nitrogen response was determined by comparison to a single 11-48-0 strip.

Soils in the very low nitrate nitrogen range showed excellent responses to added nitrogen. This corroborates other evidence which showed that the nitrate test gave a good indication of nitrogen fertilizer requirements. For soils in the very low N range, the rate of application of N for maximum profit was 60 lb N/acre, including that supplied by 60 lb/acre of 11-48-0. However, the correlation of response to soil test was not good for soils in the low and medium nitrate nitrogen ranges. However, alteration of soil test benchmarks would not be warranted on the basis of the data included in the 1968 study. A larger volume of data, gathered over a period of years, would be required to provide a sound basis for altering current recommendations.

2) Comparison of General Recommendations to Those Based on Soil Test Information

In co-operation with VLA credit advisors, twenty-four strip tests, in widely scattered areas of the province, were laid down in which the following treatments were compared:

1. 11-48-0 at 40 lb/acre
2. 23-23-0 at 87 lb/acre
3. 11-48-0 at 40 + 33.5-0-0 at 100 lb/acre
4. Soil test recommended rate - if it differed

significantly from any of the above treatments.

In seventeen of the trials, a comparison of soil test and general recommendations were available. The soil test recommended rates outyielded the applications based on general recommendations in all cases but one. The average yield increase of soil test rates over general recommendations was 3.9 bu/acre which would have resulted in an increased profit of approximately \$4.00 per acre.

TABLE 1. Nitrogen requirements of wheat seeded on stubble land (Yields in bu/acre, Fertilizer rates in lb/acre)

	11-48-0 @ 62	Yield Increase over 11-48-0				
		11-48-0 @ 40	11-48-0 @ 62 + 34-0-0 @ 70	11-48-0 @ 100	11-48-0 @ 160	11-48-0 @ 220
Very low N tests* (5 trials)	10.0	3.5	5.3	7.4	10.3	10.6
Low N tests (3 trials)	23.8	1.2	3.5	3.0	1.5	2.9
Medium N tests (2 trials)	15.3	8.1	2.4	7.1	10.5	4.2
High and very high + N tests	21.4	2.6	0.2	2.7	3.7	7.4

*Ratings from Sept./68 soil test benchmarks for stubble seeded crops.