NITROGEN RATE STUDIES

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In the spring of 1967, Western Co-operative Fertilizers Limited set out some nitrogen rate strip trials in Saskatchewan in co-operation with Federated Co-operatives Limited and the Saskatchewan Wheat Pool. The main objective of these trials was to determine if the rate of application recommended by the soil testing laboratory was giving the farmer the most satisfactory returns on his nitrogen fertilizer investment. The strip trials included the following rates of application:

1/ 20 lbs. N greater than the recommended rate.
2/ 10 lbs. N greater than the recommended rate.
3/ 10 lbs. N less than the recommended rate.
4/ The recommended rate.
5/ Check (No broadcast nitrogen).

A cost of $1.10 for 10 pounds of nitrogen as ammonium nitrate was assumed and the following values were assigned to the test crops:

Crop	Wt./Bushel	Price/Bushel	Price/Cwt.
Wheat	60 lbs.	$1.60	$2.67
Barley	48 lbs.	0.90	1.88

For wheat grown on stubble, the average net returns (14 plots) from money invested in nitrogen fertilizer ranged from a loss to a profit of 50%. For barley grown on stubble, the average net returns (5 plots) from money invested in nitrogen fertilizer ranged from 36% to 75%. For wheat, on the average, the most profitable rate was the application of 10 lbs. of N less than the recommended rate. From the average plot data for barley, the most profitable rate of nitrogen application was the recommended rate. However, since the response curve was not smooth, more data would be required before any comments could be made on the present levels of nitrogen being recommended by the Saskatchewan Soil Testing Laboratory.