

TOP DRESSING SOLUTION NITROGEN

L. Campbell

Top dressing solution nitrogen is not something new in our industry. It has been practised throughout the U.S. for many years in conjunction with pesticide applications and in the area of foliar feeding.

The interest and expanded growth of this market has been in response to the frustrations of the SPRING RUSH.

Farm businesses are faced with rising prices of inputs and uncertain output returns. In this environment a farmer is trying to choose between buying new equipment such as tractors or combines or increasing his fertilizer or chemical inputs. Whenever that problem is faced the farmers must answer the question as to whether or not profit potential is being reduced. Top dressing solution nitrogen is one way of maximizing profit potential while minimizing some of the other risks. We should not have to be reminded of the benefits of early seeding and efficient use of early spring moisture.

All our tests start with a soil test preferably in early Fall to give us the flexibility of taking advantage of the three application seasons - Fall, Spring (pre-seeding), and Spring (top dress).

One of our top-dress experiments was carried out on a field NW of Brandon which had been continuously cropped for 9 years. Sinton wheat was seeded on Flax stubble May 21, 1979 swathed August 20 and combined August 28.

Fertilizer was applied prior to top dressing as follows:

Phosphate:	fall broadcast	122 lbs. of 0-45-0
Nitrogen:	pre-plant broadcast	103 lbs. of 34-0-0
Sulfur:	pre-plant broadcast	15 lbs. of 0-0-0-90

Wild oats and broadleaved weeds were controlled with Avenge and LV 96. The latter proved satisfactory for removing volunteer flax.

Top dress applications of 28-0-0 were as follows:

June 8	Plot D	30 lbs. N
	Plot B	60 lbs. N
June 18	Plot D	30 lbs. N
	Plot E	60 lbs. N

Rainfall on Test Plots (mm)

	<u>1979</u>	<u>NORMAL</u>	<u>1979 as % OF NORMAL</u>
May	73.4	49.5	148 %
June	24.7	76.3	32
July	27.5	68.1	40
August	19.2	59.2	32
September	46.3	39.1	116
Total	191.1	292.2	65 %
Total during growing months	71.4	203.6	35

Plots were 272 ft. X 80 ft.

<u>Results:</u>	<u>bu/ac</u>	<u>Top Dress Increase</u>
A (30# on June 8)	30.2	8.9
B (60# on June 8)	33.5	12.2
C (check)	21.3	-
D (30# on June 18)	36.9	15.6
E (60# on June 18)	40.0	18.7

Dollar return from top dressed "N".

<u>PLOT</u>	<u>COST OF TOP DRESSED N</u>	<u>YIELD INCREASE</u>	<u>GROSS PROFIT</u>	<u>NET PROFIT</u>
A	6.60	8.9	35.60	29.00
B	13.20	12.2	48.80	35.60
C	0	0	0	0
D	6.60	15.6	62.40	55.80
E	13.20	18.7	74.80	61.60

N @ \$.22/lbs. Wheat @ \$4.00/bu.

With the growth of 28-0-0 in the marketplace and the soon to be available 12-0-0-26 (ammonium thiosulfate) there is considerable potential for top dressing nitrogen and sulfur in response to specific problem situations.

Top dressing is more than a last resort. By top dressing farmers can:

- seed earlier (better yields).
- use spring moisture more effeciently.
- respond to changing crop outlook (markets).
- respond to changing weather.
- get custom equipment when they need it.

Questions that come to mind are

When can you apply 28-0-0? Crop Stage? Rates? What Crops?

With all top dressing we would recommend application during cool, moist weather conditions. This is particularly important for the oilseeds. Burning is essentially eliminated if a rain occurs within 24 hours.

Spraying should be done prior to the 6 leaf stage of cereals and within 2 - 3 weeks of seeding for oilseeds. Flootation equipment is recommended. Rates of application are subject to weather conditions and crop stage. Growers in Manitoba have put on from 30 to 80 lbs. of N.

On some plots in the Neepawa area we attempted to assess crop tolerance to 28-0-0 top dressed on rapeseed and wheat. Rates of 10, 20 and 30 gallons per acre were applied equating to 35, 70 and 105 lbs. of N/acre. Even under severe weather conditions (hot winds and temperatures over 30°C) only the top rate burnt the crop which recovered in about 5 days. With similar applications on rapeseed the soil moisture was so poor that we couldn't assess the plot though leaf burn was not visible.

The interesting observation of our Neepawa - Wheat plot was the change in protein.

	% Protein
A (105# N)	14.2
B (70# N)	13.8
C (35# N)	10.2

Rainfall from seeding to harvest was less than one inch and there was no measured change in yield.

Top dressing is a tool to improve yields and profits and lends itself to make a farmers operation more flexible.