

Cominco Fertilizer Trials - 1972

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The following summarizes results obtained from four fertilizer trials on barley in Manitoba in 1972.

1. **Objective:** To measure the yield response of barley to 30, 60, 90 and 120 lbs. of Nitrogen (N) per acre.
Results: Yield responses reflected in the four graphs attached, were secured by harvesting 30 sq. yds. from each N treatment; each treatment being a plot 7' x 1200' (min.). Responses may be compared against soil test levels shown.
2. **Objective:** To compare barley yield response to two fertilizer Nitrogen sources, Viz., urea (46-0-0) and ammonium nitrate (34-0-0).
Results: The yield response curves shown in the attached graphs do not indicate any consistent differential in respect to source of N. Four trials are considered to be an inadequate number for this type of field test.
3. **Objective:** Fertilizer trials in farm fields are often established by the use of fertilizer applicators commonly used on farm seeding implements. The accuracy of such equipment in delivering specific pre-set rates, for plot work, was evaluated.
Results: Cominco applicators were used. Weighing equipment was installed on the implement permitting determination of the pounds of fertilizer applied, within 1 lb. tolerance. Marked differentials between the targets (30, 60, 90 and 120 lbs. of N per acre) and actual application were found as indicated by the rates reflected in the graphs. The major cause was implement vibration, a condition common to most seeding and spreading equipment.
4. **Objective:** Evaluation of the effect on barley yield of the placement

of urea on the soil surface vs. drilled beneath the surface.

Results: The yields obtained are reflected in the following graphs. No consistent yield differentials are apparent. On three fields the surface exposure was 4 to 5 days, while one field had only 1 day exposure.

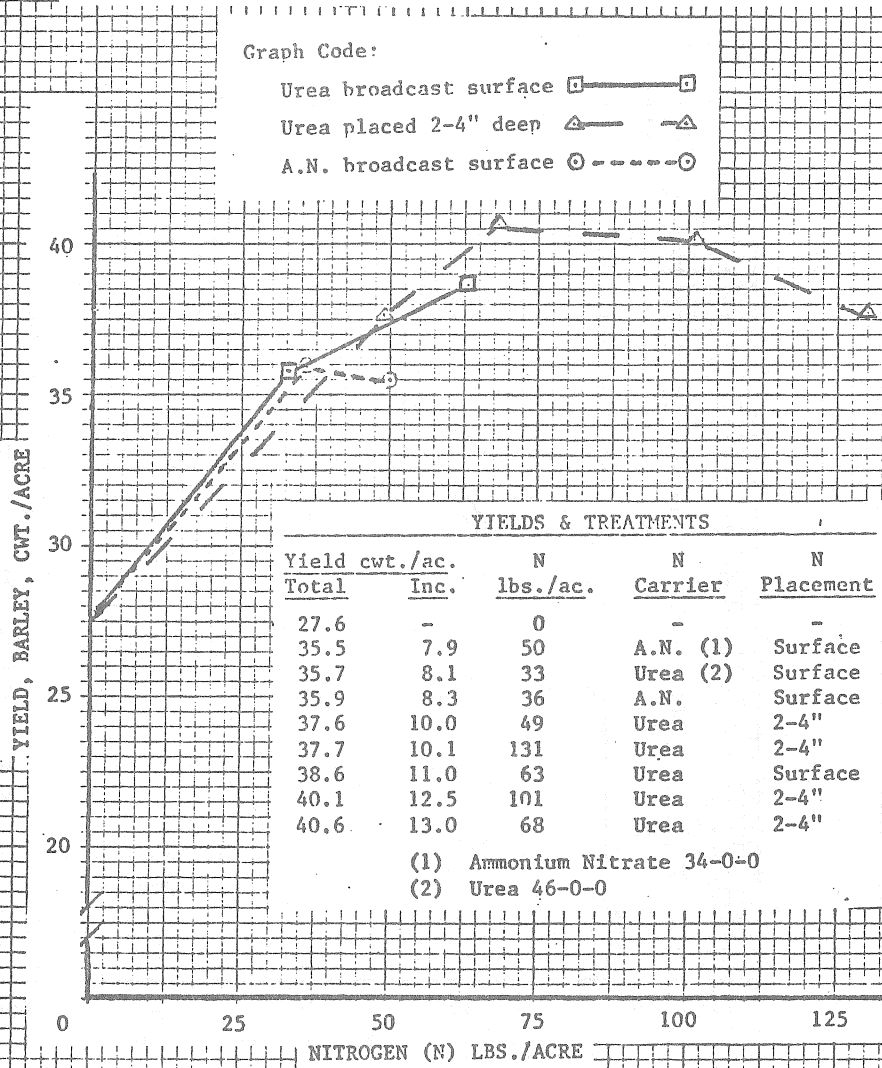
EFFECT OF NITROGEN ON YIELD OF BARLEY

Cominco Fertilizer Trial - 1972

Co-operator: J.P. Weibe & Sons, MacGregor, Manitoba
 Location: NE 34/11/10
 Crop: Barley (Fergus), seeded May 20 wheat 1971.
 Fertilizers: Urea 46-0-0 & Ammonium Nitrate 34-0-0. All plots 11-55-0 at 50 lbs./ac. broadcast. Fertilizer applied May 15.
 Soil Type: Almasippi Loamy Sands.
 Soil Test: .-

Graph Code:

Urea broadcast surface \square — \square
 Urea placed 2-4" deep \triangle — \triangle
 A.N. broadcast surface \circ - - - - \circ



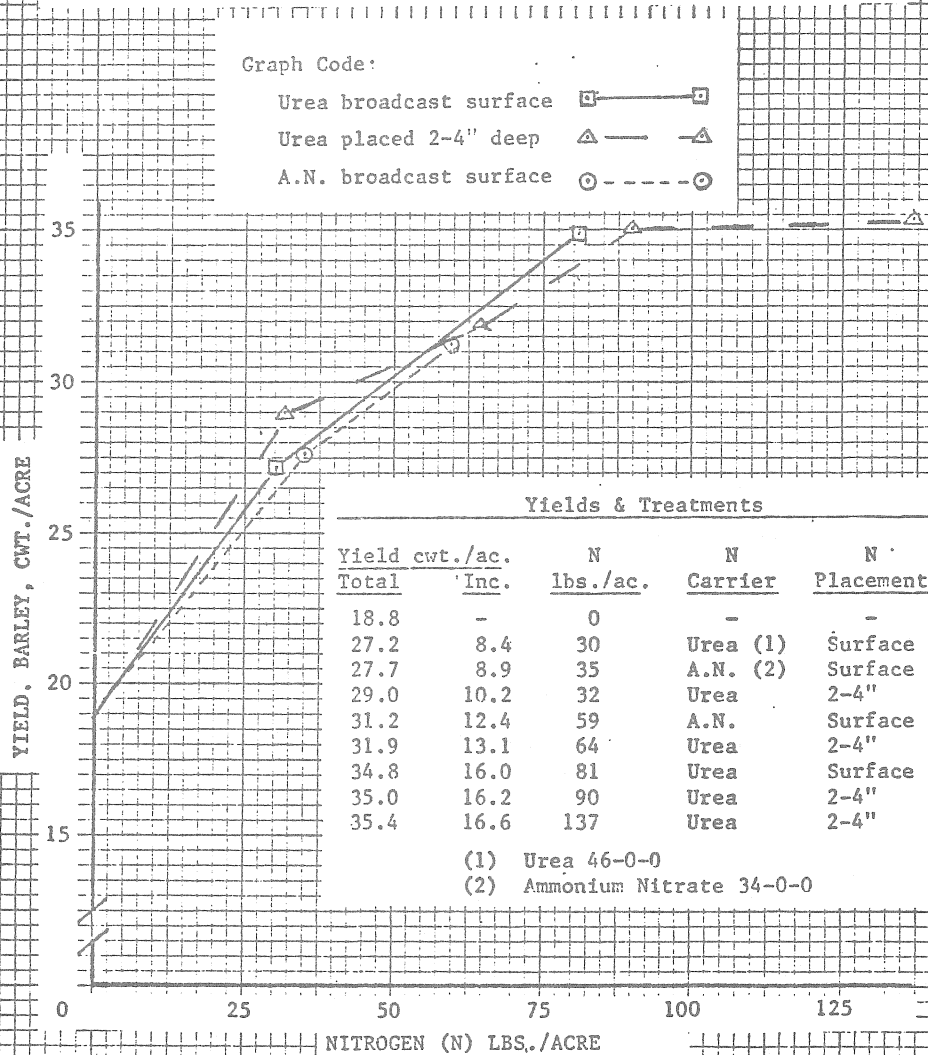
EFFECT OF NITROGEN ON YIELD OF BARLEY

Cominco Fertilizer Trial - 1972

Co-operator: J. Warren Kroeker, Landmark, Manitoba.
 Location: NW 20/8/5E
 Crop: Barley (Herta) seeded May 22; rape 1971.
 Fertilizers: Urea (46-0-0) & Ammonium Nitrate (34-0-0) applied May 18; 25 lbs. 11-55-0 applied with seed.
 Soil Type: Osborne Clay.
 Soil Test: N 0-6" 14.7 lbs., 6-24" 34.1 lbs.
 P 11.2 ppm.; K 467 ppm.

Graph Code:

- Urea broadcast surface □ — □
- Urea placed 2-4" deep △ — △
- A.N. broadcast surface ○ - - - ○



EFFECT OF NITROGEN ON YIELD OF BARLEY

Cominco Fertilizer Trial - 1972

Co-operator: L.S. Poersch, Brunkild, Manitoba.
 Location: NE 19/7/1
 Crop: Barley (Fergus) seeded May 20; oats 1971.
 Fertilizers: Urea (46-0-0) & Ammonium Nitrate (34-0-0) applied May 1st, 11-55-0 applied with seed.
 Soil Type: Red River Clay.
 Soil Test: N 0-6" 14 lbs., 6-24" 48 lbs.;
 P 8 ppm.; K 570 ppm.

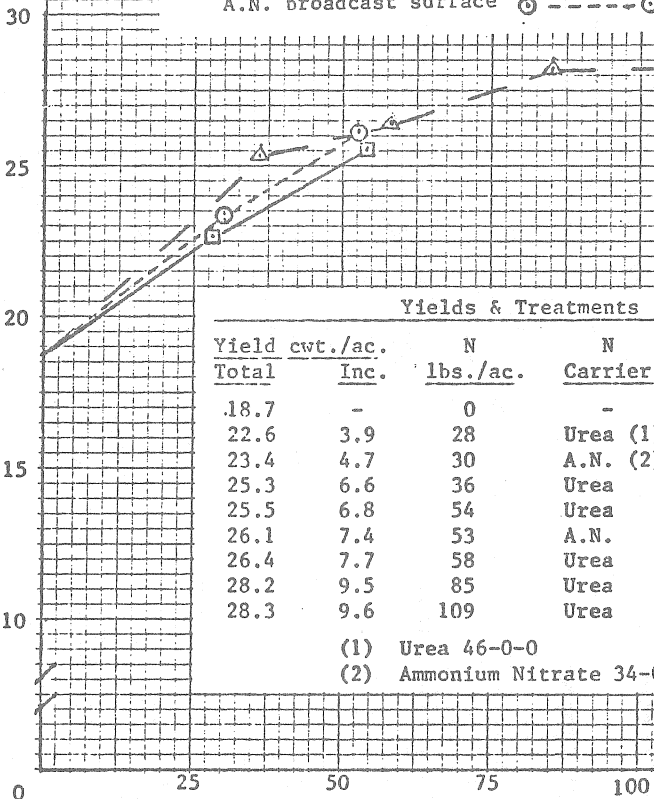
Graph Code:

Urea broadcast surface \square — \square

Urea placed 1-2" deep \triangle — \triangle

A.N. broadcast surface \circ - - - \circ

YIELD, BARLEY, CWT./ACRE



Yields & Treatments

Yield cwt./ac.	N Inc.	N lbs./ac.	N Carrier	N Placement
18.7	-	0	-	-
22.6	3.9	28	Urea (1)	Surface
23.4	4.7	30	A.N. (2)	Surface
25.3	6.6	36	Urea	1-2"
25.5	6.8	54	Urea	Surface
26.1	7.4	53	A.N.	Surface
26.4	7.7	58	Urea	1-2"
28.2	9.5	85	Urea	1-2"
28.3	9.6	109	Urea	1-2"

(1) Urea 46-0-0
 (2) Ammonium Nitrate 34-0-0

NITROGEN (N) LBS./ACRE

EFFECT OF NITROGEN ON YIELD OF BARLEY

Cominco Fertilizer Trial - 1972

Co-operator: Ed Chabot, Elie, Manitoba.
 Location: NE 13/11/3
 Crop: Barley (Fergus) seeded May 20; barley 1971.
 Fertilizers: Urea 46-0-0 and Ammonium Nitrate 34-0-0, applied May 16.
 11-55-0 @ 50 lbs./ac. broadcast all plots.
 Soil Type: Red River Clay/Osborne Clay
 Soil Test: N 0-6" 11.2 lbs. ac., 6-24" 29.7 lbs. ac.:
 P 7.8 ppm.; K 664 ppm.

