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EXCERPTS FROM AN EVALUATION OF NITRO/MAX ACROSS HYBRID AND INBRED PEDIGREED CORN VARIETIES FOR YIELD ENHANCEMENT AT CEDAR FALLS, IA 1985

NITRO/MAX as a post emergence treatment, at 1/10 gallon per acre was evaluated for yield enhancement across hybrid and inbred pedigreed entries of corn at Cedar Falls, Iowa, in 1985. NITRO/MAX was applied with 40 lbs/A nitrogen on hybrid varieties and with 0 lbs/A nitrogen on inbred varieties. Two side-by-side tests of hybrid and inbred corn entries were split, split-block designed tests with three replications and the first split was the variety maturity groups and the second split (perpendicular to the row direction) was the treatments. The tests were on a Klinger silt loam soil with 5.8% organic matter, a soil pH of 6.5, and a cation exchange capacity of 25.6 meq/100 g. Prior crops were soybeans in 1984 and an annual alfalfa-oats mixture in 1983 when the land was into set-aside acres. A pre-emergence tank mix of Lasso 4 EC at 2 ai/A + Bladex 4L at 2 lbs ai/A was applied just after planting. The plots were two rows by 16 feet and were hand harvested in October. These plots were similar to plots in breeder evaluation tests.

YIELDS

Yield enhancement at 10-14 bu/A was achieved with 40 lbs of nitrogen and NITRO/MAX on several corn hybrid varieties as compared to plots with 80 lbs/A nitrogen without NITRO/MAX. Yield enhancement with NITRO/MAX of 10 bu/A with Dekalb Pfizer T1100 was on top of control yields at 203 bu/A where the controls received 80 lbs/A of nitrogen. The NITRO/MAX plots in this comparison received only 40 lbs/A of nitrogen. NITRO/MAX was an effective material for yield enhancement on several of the corn varieties with a MO 17 parentage. The MO 17 parent is used in many varieties as is the B 73 parent and the ensuing hybrids are often noted as high yielding hybrids that are common in the corn seed industry. NITRO/MAX appears to be most beneficial where nitrogen is needed over a longer period on a "high fertility type". This test was also on a high organic matter soil with two years prior history of leguminous crops and this helped provide a source of nitrogenous compounds in the soil.

The yield comparisons on the hybrid varieties was 80 lbs of nitrogen

vs 40 lbs of nitrogen plus NITRO/MAX. The yield comparison on the inbreds was 0 nitrogen (control) vs 0 nitrogen plus NITRO/MAX. These inbreds were the parents of the aforementioned hybrids, and perhaps selecting for crosses is critical for increased yield performance with NITRO/MAX.

60 DAY LAB POT TESTS USING NITRO/MAX AS A SEED TREATMENT AND/OR FOLIAR

When NITRO/MAX was used as a seed treatment on Pioneer 3732 corn, the germination was increased by 2%; top dry matter by 15% and plant height by 4%. When NITRO/MAX was used as a foliar in combination with seed treatment, top dry matter increased by 23% and plant height by 9% at harvest.

NITRO/MAX seed treatment on Butte spring wheat increased top dry matter by 15% over the controls.

NITRO/MAX seed treatment on Corsoy 79 soybeans increased the number of pods by 225% over the controls.

Hybrid Harvest Yield Comparison
(in bushels per acre)

Corn Variety	80 lbs Nitrogen	40 lbs nitrogen + Nitro/Max	Nitro/Max difference with ½ nitrogen
B73 × LH38	202.6	212.2	+ 9.6
MO17 × 641	205.2	216.8	+ 11.6

Inbred Corn Varieties For Seed Production Yield Comparisons
(in bushels per acre)

Corn Variety	0 lbs nitrogen	0 lbs nitrogen + Nitro/Max	Nitro/Max difference
B73	48.0	66.7	+ 18.7
LH38	83.5	117.6	+ 34.1
MO17	46.1	60.4	+ 14.3
641	50.5	55.3	+ 4.8

These numbers speak for themselves and certainly disprove the long-time accepted theory that it takes one to one and a half pounds of commercial nitrogen to produce a bushel of corn.

In fact, 160 pounds of nitrogen on LH38 produced only 81 bushel per acre on these tests. In total we have research yield results on 12 hybrid and 20 inbred corn varieties and they are all positive.

PROGRESS REPORT ON NITRO/MAX TESTING

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I. MAIN TESTING (Treated on the soil, seed and foliage)

1. *ON RICE* :
The experiment was established at Củ Chi District (far 35km from Saigon), having two sites and ones at Bình Chánh district (far 20km from Saigon). Paddy were direct seeded in May 10,1993 at Củ Chi and in May 22,1993 at Bình Chánh.
Results : We have observed.

2. *ON MAIZE* :
Location : Thủ Đức District (far 20km from Saigon)
It was sowed and treated on the soil in May 22,1993.
Results : We have observed.

3. *ON PEA-NUT* :
Location : Củ Chi District .
It was sowed and treated on the soil in May 16, 1993.
Results : We have observed.

II. SUBORDINATE TESTING :

1. *COFFEE* : The plants were planted two years.
Location : Lâm Hà District (Lâm Đồng province) far 350km from Saigon. It was sprayed on the foliage with a solution of NITRO/MAX in May 10, 1993.
Results : We have observed.

2. *ROSE* :
Location : Đinh An District (Lâm Đồng Province)
It was planted and treated on the soil in May 19,1993.
Results : We have observed.

3. *MAIZE* : (Height of plant 20-25cm)
Location : Lâm Hà District (Lâm Đồng Province)
It was sprayed on the foliage with NITRO/MAX in May 10, 1993.
Results : We have observed.

4. *SUGAR-CANE* : (Height of plant 10-15cm)
Location : Lâm Hà District (Lâm Đồng Province)
It was sprayed on the foliage with NITRO/MAX in May 11, 1993.
Results : We have observed.

5. *SWEET-POTATO* :
It was planted about a week.
Location : Lâm Hà District (Lâm Đồng Province).
It was sprayed on the foliage with NITRO/MAX in May 11, 1993.
Results : (treated plots as compared to control) recorded are as follow :
- better stem elongation.
- harvest stem earlier two weeks.

NOTE

(REPORT IN MAY/1993)

TO : PHU HIEP COMPANY

After contract agreement, we have fulfilled the following works:

1. Design of the official testings (obligatory)
2. Implementation of 7 compulsory testings as planned.

* *On Rice* :
  - *Acid sulfate soil*: Phước Hiệp, Củ Chi,HCM city (transplanting)
  - *Alluvial soil*: Tân Kiên, Bình Chánh, HCM city (dry seed broadcasting)
  - *Grey podzolic soil*: Tân An Hội, Củ Chi,HCM city (direct seeding)

* *On Peanut* :
  - *Comparison of NITRO/MAX with other foliar fertilizers* : Tân An Hội, Củ Chi, HCM city.
  - *NITRO/MAX application combined with various Nitrogen rates* : Tân An Hội, Củ Chi, HCM city.

* *On Corn* :
  - *Comparison of NITRO/MAX with other foliar fertilizers* : Thủ Đức, HCM city.
  - *NITRO/MAX application combined with various Nitrogen rates* : Thủ Đức, HCM city.

3. Implementation of 5 demonstration sites of NITRO/MAX in May/1993 (as designed).
   - Corn : Đức Trọng, Lâm Đồng.
   - Potato : Đức Trọng, Lâm Đồng.
   - Rose : Đức Trọng, Lâm Đồng.
   - Cucumber : Tân Xuân, Hóc Môn, TP HCM.
   - Cucumber : Tân Phú Trung, Củ Chi, TP HCM.

4. Preparation of 5 demonstration sites for implementation in June/1993 (as designed).
   - Tomato : Đơn Dương, Lâm Đồng.
   - Pepper : Đơn Dương, Lâm Đồng.
   - Rose : Đức Trọng, Lâm Đồng.
   - Gladiolus : Đức Trọng, Lâm Đồng (2 sites)

HoChiMinh city, May 24, 1993

Director,

NGUYỄN THỊ ĐÀO

6. ***MANIOC*** : (Height of plant 0,5 m).
Location : Lâm Hà District (Lâm Đồng Province)
It was sprayed in May 11, 1993.
Results : - The height of the plant increased about 30%.

- Bigger stem about 20%

NOTE

7. ***MULBERRIES*** : (Height of plant between 1m and 1m5)
Location : Lâm Hà District (Lâm Đồng Province)
It was sprayed in May 11, 1993.
Results : - The height of plant increased about 10%
- Bigger the surface of the foliage about 48%

NOTE

8. ***FRENCH BEANS*** :
Location : Lâm Hà District (Lâm Đồng Province)
It was treated on the foliage in May 11, 1993.
Results : - Bigger fruit.
- More fruit (30% increase).

NOTE

9. ***COFEEE*** : (It was planted 3 years).
Location : Đắc Nông District (Ban Mê Thuột) far 300km from Saigon.
It was treated on the foliage in June 1, 1993.
Results : We have observed.

10. ***MAIZE*** : (Height of plant between 15cm and 20cm)
Location : Đắc Nông District (Bản Mê Thuột)
It was treated on the foliage in June 1, 1993.
Results : We have observed.

11. ***GRASS*** :
Location : Đắc Nông District (Ban Mê Thuột)
It was treated on the foliage in June 1, 1993.
Results : We have observed.