CIMMYT MAIZE TRAINING

OFF STATION EXPERIMENTS

1978 A
CIMMYT MAIZE TRAINING

OFF STATION EXPERIMENTS

1978 A
EXPERIMENTAL VARIETY TRIAL

Objectives:

1. To compare a commercially available hybrid with open pollinated varieties.

2. To compare commercially available materials with experimental varieties developed from CIMMYT's populations for adaptation to the Veracruz environment.

Varieties:

<table>
<thead>
<tr>
<th>ENTRY</th>
<th>TYPE</th>
<th>SEED ORIGIN</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.- Pantnagar 7421</td>
<td>White Dent</td>
<td>PR 76 B-Lote 17</td>
</tr>
<tr>
<td>2.- La Máquina 7422</td>
<td>White Dent</td>
<td>PR 76 B-Lote 24</td>
</tr>
<tr>
<td>3.- Pichilingue 7429</td>
<td>White Dent</td>
<td>PR 76 B-Lote 78</td>
</tr>
<tr>
<td>4.- Tlaltizapan 7322</td>
<td>White Dent</td>
<td>TL 75 B-Lote 151</td>
</tr>
<tr>
<td>5.- Cuyuta (2) 7531</td>
<td>White Dent</td>
<td>PR 76 B-Lote 59</td>
</tr>
<tr>
<td>6.- Across 7432</td>
<td>White Dent</td>
<td>TL 75 B-Lote 135</td>
</tr>
<tr>
<td>7.- Across 7443</td>
<td>White Dent</td>
<td>TL 75 B-Lote 138</td>
</tr>
<tr>
<td>8.- Suwan 7430</td>
<td>White Flint</td>
<td>PR 76 B-Lote 74</td>
</tr>
<tr>
<td>9.- Gemiza 7544</td>
<td>White Dent</td>
<td>TL 77 A-Lote 153A</td>
</tr>
<tr>
<td>10.- Drought Tolerant</td>
<td>White Dent</td>
<td>PR 76 B-719-7</td>
</tr>
<tr>
<td>11.- Very Early Selection</td>
<td>White Mixed</td>
<td>PR 77 B-Lote 88</td>
</tr>
<tr>
<td>12.- Borer Resistant</td>
<td>White Mixed</td>
<td>PR 77 A-PPT 301-307</td>
</tr>
<tr>
<td>13.- Tlaltizapan (DN) 7621</td>
<td>White Dent</td>
<td>TL B-Lote 1529</td>
</tr>
<tr>
<td>14.- Criollo</td>
<td>White Dent</td>
<td>Farmer's seed</td>
</tr>
<tr>
<td>15.- H-509</td>
<td>White Dent</td>
<td>PRONASE</td>
</tr>
<tr>
<td>16.- Tuxpeñito</td>
<td>White Dent</td>
<td>PRONASE</td>
</tr>
</tbody>
</table>

Experimental Design:

A 4 x 4 Balanced Lattice Square having 5 replications.

Cultural Practices:

All varieties are thinned to 50,000 plants/ha except varieties 11 (100,000 plants/ha) and 14 (35,000 plants/ha) in 5 m rows 0.30 m apart. Fertilizers rates at San Carlos are 100 kg N/ha and 40 kg P₂O₅/ha. Fertilizers rates at Poza Rica Exp. Sta. are 200 kg N/ha and 80 kg P₂O₅/ha. Weed control was with Atrazine and 2,4-D. Insecticides are applied as needed.

Locations Planted:

Poza Rica Experiment Station Conventional Tillage
Rancho San Carlos Conventional Tillage
OPAQUE VARIETIES TRIAL

Objectives:

1. To compare a soft endosperm opaque variety with one selected for modified hard endosperm.
2. To compare the performance of each opaque variety with a commercially available normal (non-opaque) variety for adaptation to the Poza Rica environment.

Varieties:

<table>
<thead>
<tr>
<th>ENTRY</th>
<th>TYPE</th>
<th>SEED ORIGIN</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Tuxpeño</td>
<td>White Dent</td>
<td>PRONASE</td>
</tr>
<tr>
<td>2. Tuxpeño Caribe O₂</td>
<td>White Dent</td>
<td>PR 77 A-Lote 94</td>
</tr>
<tr>
<td>3. La Posta O₂</td>
<td>White Dent</td>
<td>PR 77 A-Lote 96</td>
</tr>
</tbody>
</table>

Experimental Design:

A Randomized Complete Block design is used with 3 replications.

Cultural Practices:

All varieties are thinned to 50,000 plants/ha in 5 m rows 0.80 m apart. Fertilizer rates are 100 kg N/ha and 80 kg P₂O₅/ha. Insecticides are applied as needed. Weed control is by a preemergence application of atrazine and paraquat. To prevent yield bias due to pollination of opaque varieties by non-opaque pollen, all plots are detasseled. Pollen is supplied by borders of a mixture of the two opaque varieties.

Locations Planted:

Huizotate Zero Tillage
Ramon Caracas Conventional Tillage
**VARiETY x PRODUCTION INPUTS TRIAL**

**Objectives:**

1. To compare the yield responses for various production inputs and test for interactions between these inputs.

2. To identify critical practices or combinations of practices under conventional and zero tillage conditions.

3. To find an economic system for the production of maize in tropical areas with and without the use of machinery.

**Treatments:**

- **A - Varieties (V):**
  - $V_0$: Criollo variety
  - $V_1$: Tuxpenito variety

- **B - Nitrogen (N):**
  - $N_0$: No N applied
  - $N_1$: 100 kg N/ha

- **C - Insecticide (I):**
  - $I_0$: No insecticide applied
  - $I_1$: Seed and whorl applications of Furadan

- **D - Density (D):**
  - $D_0$: 25,000 plants/ha
  - $D_1$: 50,000 plants/ha

- **D - Weed Control (W):**
  - $W_0$: One cultivation only
  - $W_1$: Atrazine applied preemergence

  **Experimental Design:**

  This experiment is a Randomized Complete Block design with 2 replications. The plots are arranged as a $2^4$ factorial in blocks of 8 treatments with the four way interaction confounded with block effects.

**Cultural Practices:**

All plots are thinned to 50,000 plants/ha (in the case of conventional tillage trials) or to 25,000 or 50,000 plants/ha (in the case of zero tillage trials). Phosphorus is applied at a uniform rate of 40 kg P$_2$O$_5$/ha over the entire experiment. In the trials done under zero tillage, weed control is by a preemergence application of atrazine + paraquat.

**Locations Planted:**

- Cruz de los Esteros: 1 conventional and 1 Zero Tillage
- Teayo: Zero Tillage
- Zapotalillo: Zero Tillage
BASIC FERTILIZER TRIAL

Objectives:

1. To compare the yield responses due to four different fertilizer nutrients under on-farm conditions.
2. To identify significant interactions between fertilizer nutrients.
3. To identify yield limiting nutrient elements for further study under on-farm conditions.

Treatments:

<p>| | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>N</td>
<td>N₀ 50</td>
<td>N₀ 100</td>
</tr>
<tr>
<td></td>
<td></td>
<td>N₁ 150</td>
<td>N₁ 150</td>
</tr>
<tr>
<td>B</td>
<td>P</td>
<td>P₀</td>
<td>P₀</td>
</tr>
<tr>
<td></td>
<td></td>
<td>P₁ 80</td>
<td>P₁ 80</td>
</tr>
<tr>
<td>C</td>
<td>S</td>
<td>S₀</td>
<td>S₀</td>
</tr>
<tr>
<td></td>
<td></td>
<td>S₁ 2,000</td>
<td>S₁ 2,000</td>
</tr>
<tr>
<td>D</td>
<td>Z</td>
<td>Z₀</td>
<td>Z₀</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Z₁ 2</td>
<td>Z₁ 2</td>
</tr>
</tbody>
</table>

Experimental Design:
This experiment is a Randomized Complete Block design with 2 replications. The plots are arranged as a $2^4$ factorial in blocks of 8 treatments with the four way interaction confounded with block effects.

Cultural Practices:
All plots are thinned to 50,000 plants/ha in 5 m rows 0.80 m apart. Tuxpeñito variety is used. All fertilizers are applied at the time of planting. Nitrogen and phosphorus are applied in a hole to the side of the planting hole. Sulfur is broadcast and incorporated into the surface. Zinc sulfate is applied with the seed. Weed Control is by preemergence applications of Atrazine and Paraquat. Insecticides are applied as needed.

Locations Planted:
San Carlos  Conventional Tillage
Ramon Caracas  Conventional Tillage
OBJECTIVES:

1. To compare the yield responses of two different varieties under various combinations of fertilizer inputs.

TREATMENTS:

A - Varieties (V)

- V₀: Criollo variety
- V₁: Tuxpeñito variety

B - Nitrogen (N)

- N₀: No N applied
- N₁: 100 kg N/ha

C - Phosphorus (P)

- P₀: No P applied
- P₁: 80 kg P₂O₅/ha

D - Zinc (Z)

- Z₀: No Zn applied
- Z₁: 2 kg Zn/ha

EXPERIMENTAL DESIGN:

This experiment is a Randomized Complete Block design with 2 replications. The plots are arranged as a 2⁴ factorial in blocks of 3 treatments with the four way interaction confounded with block effects.

CULTURAL PRACTICES:

All plots are thinned to 50,000 plants/ha. Nitrogen and phosphorus are applied in a hole at one side of the planting hole. Zinc is applied as Zinc Sulfate with the seeds. Weed control is by a preemergence application of atrazine and paraquat. Insecticides are applied as needed.

LOCATIONS PLANTED:

El Jardin Conventional Tillage
RELEVANCE OF PRODUCTION FACTORS TRIAL

Objectives:

1. To identify the most critical production factors under farmer's conditions.
2. To determine the effect of deleting one practice from the complete set of recommended practices.

Treatments:

In each plot the complete technological package (CTP) is applied or the CTP minus one factor. The CTP consists of 100 kg N/ha + 80 kg P$_2$O$_5$/ha + Tuxpeñito variety + 50,000 plants/ha + use of Atrazine + granular insecticide in the whorl + Furadan with the seed.

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Inputs</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>CTP - N, No N applied</td>
</tr>
<tr>
<td>2</td>
<td>CTP - P, No P applied</td>
</tr>
<tr>
<td>3</td>
<td>CTP - NP, No N or P applied</td>
</tr>
<tr>
<td>4</td>
<td>CTP - F, No insecticide used</td>
</tr>
<tr>
<td>5</td>
<td>CTP - V, Criollo variety used</td>
</tr>
<tr>
<td>6</td>
<td>CTP - D, 25,000 plants/ha density used</td>
</tr>
<tr>
<td>7</td>
<td>CTP - W, No atrazine used, only 1 cultivation</td>
</tr>
<tr>
<td>8</td>
<td>CTP - F, No furadan used</td>
</tr>
<tr>
<td>9</td>
<td>CTP, All factors applied</td>
</tr>
</tbody>
</table>

Experimental Design:

A randomized Complete Block design is used with 4 replications.

Cultural Practices:

In all treatments except 4 and 8, insecticides are applied as needed. The plots are thinned to give the desired plant densities.

Locations Planted:

- San Carlos: Conventional Tillage
- Teayo: Zero Tillage
WEED CONTROL UNDER CONVENTIONAL TILLAGE CONDITIONS

Objectives:
1. To compare the effectiveness of several herbicides for control of broad and narrow leaved weeds.
2. To demonstrate the effect of weeds on the yield of maize.
3. To investigate the use of herbicide formulations which can be applied at low volumes of liquid per hectare.

Treatments:
1. Gesaprim 50 WP (50% Atrazine) applied preemergence as 2 kg a.i./ha in 400 l. water.
2. Gesaprim Combi 80 WP (40% Atrazine + 40% Igran) applied preemergence as 1 kg a.i. Atrazine/ha in 400 l. water.
3. Gesaprim 500 FW (50% Atrazine) applied preemergence as 2 kg a.i./ha in 10 l. solution/ha.
4. Primextra 500 FW (17% Atrazine + 33% Methylalachlor) applied preemergence as 1 kg a.i. Atrazine/ha in 15 l. solution/ha.
5. 2,4-D + Lasso applied preemergence as 1 l. a.i. 2,4-D/ha + 0.86 l. a.i. Lasso/ha in 400 l. water.
6. Manual Control of weeds starting 10 days after emergence and repeated whenever necessary.
7. Check. No weed control.

Experimental Design:
A Randomized Complete Block design is used with 4 replications.

Cultural Practices:
All plots are thinned to give a plant density of 50,000 plants/ha in 5 m rows 0.8 m apart. Insecticides are applied as needed. Nitrogen is applied at 100 kg N/ha and Tuxpeñito variety is used. All herbicides are applied preemergence.

Locations Planted:
Ramon Caracas  Conventional Tillage
San Carlos     Conventional Tillage
El Jardin     Conventional Tillage
OBJECTIVES:
1. To determine the best combination of herbicides for maize under zero tillage conditions.
2. To study the costs of the herbicide treatments relative to the traditional tillage method.

TREATMENTS:

active ingredients/ha.

1. 1.2 l. Paraquat + 1.5 kg Atrazine
2. 0.8 l. Paraquat + 1.5 kg Atrazine
3. 0.4 l. Paraquat + 1.5 kg Atrazine
4. 1.2 l. Paraquat + 1.0 kg Atrazine
5. 0.8 l. Paraquat + 1.0 kg Atrazine
6. 0.4 l. Paraquat + 1.0 kg Atrazine
7. 1.2 l. Paraquat + 0.5 kg Atrazine
8. 0.8 l. Paraquat + 0.5 kg Atrazine
9. 0.4 l. Paraquat + 0.5 kg Atrazine
10. 0.4 l. Paraquat + 0.5 kg Atrazine + 0.5 l. Lasso
11. Traditional cultivation practice
12. Check (no weed control)

EXPERIMENTAL DESIGN:
The entire set of treatments forms a Randomized Complete Block design with 2 replications. Treatments 1-9 form a 3 x 3 factorial with 2 replications.

CULTURAL PRACTICES:
All plots are thinned to give a plant density of 50,000 plants/hectare in 5 m rows 0.8 m apart. Insecticides are applied as needed. Nitrogen is applied at 100 kg N/ha. All herbicides are applied preemergence. Tuxpeño variety is used.

LOCATIONS PLANTED:
Zapotalillo Zero Tillage
INSECTICIDE TRIAL

Objectives:
1. To assess the economic benefits of crop protection with insecticides.
2. To determine the effectiveness of insecticides in Farmer's fields.

Treatments:
1. No insecticide applied
2. One application of Birlane granules when necessary.
3. Two or more applications of Birlane granules when necessary.
4. Application of Furadan with the seed at planting and Furadan granules in the whorl 5 weeks after planting.

Experimental Design:
For instructional purposes either a Randomized Complete Block design or a Completely Randomized design are used, each having 4 replications. The Randomized Complete Block design may also be analyzed as a 4 x 4 Latin Square.

Cultural Practices:
All plots are thinned to give a density of 50,000 plants/ha in 5 m rows 0.80 m apart. Fertilizer rates are 100 kg N/ha and no phosphorus. Weed control is by a mixture of atrazine and paraquat applied preemergence in both conventional and zero tillage locations. Tuxpeñito variety is used.

Locations Planted:
- Ramon Caracas: Conventional Tillage
- San Carlos: Conventional Tillage
- Zapotalillo: Zero Tillage
- Teayo: Zero Tillage
- Huiizotate: Zero Tillage
- El Jardin: Conventional Tillage
STAGE 3

VARIETY X PLANT DENSITY TRIAL

Objectives:
1. To compare promising experimental varieties with local varieties.
2. To compare the responses of these varieties to three plant densities.

Treatments:

Objectives:
1. To compare promising experimental varieties with local varieties.
2. To compare the responses of these varieties to three plant densities.

Treatments:

Varieties

<table>
<thead>
<tr>
<th>Variety</th>
<th>Description</th>
<th>Type</th>
<th>Variety</th>
<th>Description</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>V1</td>
<td>Across 7529</td>
<td>White Dent</td>
<td>V2</td>
<td>Tuxpeñito</td>
<td>White Dent</td>
</tr>
<tr>
<td>V3</td>
<td>Across 7532</td>
<td>White Dent</td>
<td>V4</td>
<td>Tlaltizapan (DN) 7621</td>
<td>White Dent</td>
</tr>
<tr>
<td>V5</td>
<td>Criollo</td>
<td>White Dent</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Densities

<table>
<thead>
<tr>
<th>Density</th>
<th>Plants/ha</th>
</tr>
</thead>
<tbody>
<tr>
<td>D1</td>
<td>25,000</td>
</tr>
<tr>
<td>D2</td>
<td>50,000</td>
</tr>
<tr>
<td>D3</td>
<td>75,000</td>
</tr>
</tbody>
</table>

Experimental Design:
This experiment is planted as a Split Plot design with 3 replications. Main plots are densities and subplots are varieties.

Cultural Practices:
All plots are thinned to give plant densities of 25,000; 50,000 or 75,000 plants/ha in 5 m rows 0.80 apart. Only Nitrogen is applied at 100 kg N/ha. Weed control is by a mixture of Atrazine and Paraquat applied preemergence in either conventional or zero tillage conditions. Insecticides are applied as needed.

Locations Planted:
El Jardin Conventional Tillage
Objectives:

1. To study the effect of Nitrogen and Phosphorus fertilizers on maize grown under farmers' conditions.
2. To determine an optimum, economic fertilizer rate under farmers' conditions.
3. To demonstrate the use and responses to fertilizers to local farmers.
4. To study the effect of sulfur or zinc on maize growth and to demonstrate the use of satellite treatments.

Treatments:

A - Nitrogen (N) applied as Urea
   \[N_0\] No N applied
   \[N_1\] 50 kg N/ha
   \[N_2\] 100 kg N/ha
   \[N_3\] 150 kg N/ha

B - Phosphorus (P) applied as triple superphosphate
   \[P_0\] No P applied
   \[P_1\] 40 kg $P_2O_5$/ha
   \[P_2\] 80 kg $P_2O_5$/ha

Sulfur (S) applied as powdered Sulfur OR Zinc (Z) applied as Zinc Sulfate

Sulfur or Zinc are applied only in Satellite treatments.

Rates and treatments combinations vary.

Experimental Design:

A Randomized Complete Block design is used combining 4 nitrogen levels with 3 phosphate levels (4 x 3 factorial) in two replications. In the first block the treatments are arranged for demonstration purposes with N increasing along one side and P along the other side of the experiment. The sulfur or zinc plots are placed at one side of each block.

Cultural Practices:

All plots are thinned to give a density of 50,000 plants/ha in 5 m rows 0.80 m apart. Weed control is with a mixture of atrazine and paraquat applied preemergence in both conventional and zero tillage conditions. Insecticides are applied as needed. Tuxpeñito variety is used.

Locations Planted:

- Ramon Caracas - Conventional Tillage
- San Carlos - Conventional Tillage
- El Jardin - Conventional Tillage
- Zepotallillo - Zero Tillage
- Teayo - Zero Tillage
- Huizotate - Zero Tillage
NITROGEN X PLANT DENSITY TRIAL

Objectives:

1. To determine the optimum combination of nitrogen and plant density for a single variety under farmers' conditions.

2. To demonstrate the importance of the interaction between increased plant density and the use of fertilizer nitrogen.

Treatments:

A - Nitrogen (N) applied as Urea
- N₀: No N applied
- N₁: 50 kg N/ha
- N₂: 100 kg N/ha

B - Density (D)
- D₀: 25,000 plants/ha
- D₁: 50,000 plants/ha
- D₂: 75,000 plants/ha

Experimental Design:
This is a Randomized Complete Block design with 3 replications having 3 Nitrogen treatments and 3 densities arranged as a 3 x 3 factorial. In the first block the treatments are arranged for demonstration purposes with nitrogen levels increasing in one direction and density treatments increasing within each nitrogen level.

Cultural Practices:
All plots are thinned to give a plant densities of 25,000, 50,000 or 75,000 plants/ha in 5 m rows 0.80 m apart. Weed control is by a mixture of atrazine and paraquat applied preemergence in both conventional and zero tillage conditions. Insecticides are applied as needed. Tuxpeño variety is used.

Locations Planted:
- Ramon Caracas: Conventional Tillage
- San Carlos: Conventional Tillage
- Huitzotla: Zero Tillage
- Teayo: Zero Tillage
- Zapotalillo: Zero Tillage
- El Jardin: Conventional Tillage
Objectives:

1. To compare the traditional variety and cultural practices used by local farmers with an improved variety and improved practices including fertilizers, insecticides, weed control and higher plant densities.

2. To demonstrate to the farmer in his own field that improved practices can greatly increase his yields and net income.

3. To demonstrate to the farmer a range of improved practices (with increasing costs of inputs) to overcome his reluctance to adopt an entire package of improved practices at one time.

Treatments:

1. The local variety (criollo) planted and cultivated by the farmer in the traditional way.

2. The improved variety (Tuxpeñito) planted and cultivated by the farmer in the traditional way.

3. The local variety planted with minimum capital inputs.
   - Density: 35,000 plants/ha
   - Fertilizer: 50 kg N/ha
   - Weed Control: Gesaprim Combi 3 kg commercial/ha
   - Insect Control: as needed with Birlane

4. The improved variety (Tuxpeñito) planted with minimum capital inputs.
   - Density: 35,000 plants/ha
   - Fertilizer: 50 kg N/ha
   - Weed Control: Gesaprim Combi 3 kg commercial/ha
   - Insect Control: as needed with Birlane

5. The local variety (criollo) planted with the recommended technology.
   - Density: 50,000 plants/ha
   - Fertilizer: 100 kg N/ha
   - Weed Control: Gesaprim Combi 3 kg commercial/ha
   - Insect Control: as needed with Birlane

6. The improved variety (Tuxpeñito) planted with the recommended technology.
   - Density: 50,000 plants/ha
   - Fertilizer: 100 kg N/ha
   - Weed Control: Gesaprim Combi 3 kg commercial/ha
   - Insect Control: as needed with Birlane
Experimental Design:

There are a total of 6 plots having only 1 replication. The plots are arranged in order of the treatments 1-6.

Cultural Practices:

Plots 1 and 2 are planted and maintained by the local farmer. Plots 3, 4, 5 and 6 are planted and maintained by CIMMYT trainees. In plots 3-6 the rows are 20 m long and 0.80 m apart. No thinning is done in this trial. In trials done under zero tillage conditions, weed control is by a mixture of atrazine and paraquat applied preemergence.

Locations Planted:

<table>
<thead>
<tr>
<th>Location</th>
<th>Tillage Conditions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ramon Caracas</td>
<td>Conventional Tillage</td>
</tr>
<tr>
<td>San Carlos</td>
<td>Conventional Tillage</td>
</tr>
<tr>
<td>El Jardin</td>
<td>Conventional Tillage</td>
</tr>
<tr>
<td>Zapotalillo</td>
<td>Zero Tillage</td>
</tr>
<tr>
<td>Teayo</td>
<td>Zero Tillage</td>
</tr>
<tr>
<td>Huizotate</td>
<td>Zero Tillage</td>
</tr>
<tr>
<td>Cruz de los Esteros</td>
<td>Zero &amp; Conventional Tillage</td>
</tr>
</tbody>
</table>
POZA RICA STATION

EVT PLANTED - SEMBRADO 28 DEC., 1977
EARLY SEL. + INCREASE 12 JAN., 1978
SEL. PRECOZ + AUMENTOS 12 JAN., 1978

10 Rows - Surcos

FILLER

AO SEED INCREASE

55 SEED INCREASE

TD. SEED INCREASE

EARLY

INTER.

LATE

FILLER

FULL SIGS

EARLY

COMP.

55

56

57

58

59

60

Balanced Composite

Early Selection

Compuesto Balanceado

Selección Precóz

EVT REP. I

EVT REP. II

FILLER
Cruz de los Esteros
14-15 Dec., 1977

20m

Verification
Verificación

Zero Tillage
No Labranza

Conventional Tillage
Labranza Convencional

Var. x Prod. Inputs
Var. x Prac. Agron.
### RAMON CARACAS

**PLANTED - SEMBRADO**

27 Dec. 1977

**CONVENTIONAL TILLAGE**

**LA GRANIZA CONVENCIONAL**

<table>
<thead>
<tr>
<th>Rep.</th>
<th>28</th>
<th>27</th>
<th>26</th>
<th>25</th>
<th>24</th>
<th>23</th>
<th>22</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rep. 1</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
</tbody>
</table>

**WEED CONTROL**

| Rep. 2 | 14 | 13 | 12 | 11 | 10 |
| Rep. 1 | 1  | 2  | 3  | 4  |    |

**CONTROL DE MALAS**

**VAR. O PACAS**

| Rep. 3 | 7  | 8  | 9  |
| Rep. 2 | 6  | 5  | 4  |
| Rep. 1 | 1  | 2  | 3  |

**FILLER RELLENO**

| Rep. 4 | 16 | 15 | 14 | 13 |
| Rep. 3 | 7  | 6  | 5  |    |
| Rep. 2 | 8  | 7  | 6  | 5  |
| Rep. 1 | 1  | 2  | 3  | 4  |

**INSECTICIDE**

| Rep. 4 | 16 | 15 | 14 | 13 |
| Rep. 3 | 7  | 6  | 5  |    |
| Rep. 2 | 8  | 7  | 6  | 5  |
| Rep. 1 | 1  | 2  | 3  | 4  |

**N X DENS.**

| Rep. 3 | 19 | 20 | 21 | 22 | 23 | 24 | 25 |
| Rep. 2 | 18 | 17 | 16 | 15 | 14 | 13 | 12 |
| Rep. 1 | 1  | 2  | 3  | 4  | 5  | 6  | 7  |

**VAR X PROD.**

| Block | 32.3 | 30.82 | 27.27 | 26.25 | 22.17 | 20.29 | 29.27 | 27.21 | 25.25 |
| Block | 19 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 |
| Block | 16 | 15 | 14 | 13 | 12 | 11 | 10 | 9  | 8  |
| Block | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |

**N X P + Zn**

| Rep. 1 | 16 | 7 | 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 | 6 | 5 |
| Rep. 2 | 1 | 2 | 3 | 4 | 5 | 16 | 17 | 18 | 19 | 20 |

**FERTILIZER TRIAL**

| Block | 4 | 3 | 2 | 1 |

**ENSAYO BÁSICO**

| Block | 4 | 3 | 2 | 1 |

**VERIFICATION**

| 20 m | 4 | 3 | 2 | 1 | 6 | 5 |

**VERIFICACIÓN**
<table>
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<th>Block 1</th>
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<th>Block 3</th>
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<td>10 11 12 13 14 15 16 17</td>
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**N X Plan**

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**N X Dens**

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**Intersection**

| 1 2 3 4 5 | 6 7 8 |

**Intersection 1**

| 1 2 3 4 5 | 6 7 8 |

**Intersection 2**

| 1 2 3 4 5 | 6 7 8 |

- **Date:** 21 Dec. 1977
- **Location:** Ternyo, Sembando
- **Plot No:** 20 M