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**Attention**

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**REPORT OF ON FARM EVALUATION ON EFFECTS OF BIO-PLANT  
AND PRO-PLANT LIQUID ORGANIC FERTILIZERS ON GROWTH AND  
YIELD OF MAIZE IN NIGER STATE**

Please find attached the report of the on farm evaluation trial on the effects of BIO-PLANT and PRO-PLANT liquid organic fertilizers on maize conducted using three (3) farmers in Chanchaga village during the 2015/2016 dry season period in Niger State.

2. Bio-plant and Pro-plant liquid organic fertilizers were tested on maize using different farmers to evaluate their impact compared to inorganic NPK fertilizer which the farmers were used to.
3. Result obtained revealed that plots treated with Pro-plant combined with Bio-plant had significantly higher yields.
4. In all the treatments where Pro-plant was used either alone or combined with NPK or Bio-plant, appreciable yield increase was obtained
5. Any treatment that involves the use of Pro-plant liquid organic fertilizer is therefore highly recommended to maize farmers.
6. The trial need to be repeated to ascertain the results obtained.

**FIELD EVALUATION ON EFFECTS OF  
BIO-PLANT AND PRO-PLANT LIQUID  
ORGANIC FERTILIZERS ON  
GROWTH AND YIELD  
PERFORMANCE OF MAIZE IN NIGER  
STATE**

**ON FARM TRIAL REPORT CONDUCTED AT  
CHANCHAGA IRRIGATION SITE DURING THE  
2015/2016 DRY SEASON PERIOD IN NIGER  
STATE**

*In collaboration with the farm Input Support  
services Department of Federal Ministry of*

# *Agriculture and Rural Development, Abuja.*

## **1.0 INTRODUCTION**

- Pro- plant liquid organic fertilizer according to (the manufactures) is a complete fertilizer containing the major nutrients (N,P and K) and also some minor nutrient elements which the plants require for optimal growth.
- It is claimed to provide nutrients that are instantly usable by leaves and roots of plants. It also stimulates respiratory and photosynthetic systems so that plants absorb nutrients as needed
- Combination of Bio-plant and Pro-plant liquid organic fertilizers are said to make plants stems much thicker and more effective thereby making plants look healthy and immune to pests and diseases.
- Results of the trial conducted has proven beyond reasonable doubt all these claims made by the manufacturer.

## **2.0 EXECUTIVE SUMMARY**

- Sample of Bio-plant and Pro-plant liquid organic fertilizers were brought and evaluated in Chanchaga village 10km away from NAMDA office during the 2015/2016 dry season crop production
- Three (3) different farmers were used
- Five (5) different types of treatments were employed
- Farmers maize crop variety was used

- The highest average plant height (across the 3 farmer was 202.1cm) obtained from treatment where Bio-plant was combined with Pro-plant
- Highest average fresh cob weight at harvest (across the 3 farmers) was 5115.6 kg/ha also obtained from treatment where Bio-plant was combined with Pro-plant.
- Results obtained also revealed that in all the treatments where pro-plant was used either alone or combined with NPK or Bio-plant, appreciable yield increase was recorded.
- Any treatment therefore that involves Pro-plant is highly recommended to maize farmers if available and easily affordable because its efficiency can favorably compete with NPK fertilizers which the farmers were used to. It is also easy to handle and environmentally friendly.
- More trials are required on other crops or the same crop to validate the results obtained.

### **3.0 OBJECTIVE**

To evaluate under farmers condition the agronomic effectiveness of Bio-plant and Pro-plant liquid organic fertilizers on growth and yield performance of maize in Niger State.

### **4.0 EXPERIMENTAL PROTOCOL AND FIELD LAYOUT**

**4.1 Location:** Chanchaga dry season irrigation area using three (3) different farmers

**4.2 Test crop/variety:** Maize (farmers variety)

**4.3 Size:** 10m x 10m x 5 plots per replicate or farmer

#### 4.4 Treatment Combination

Treatment No	Treatment	Rate
T <sub>1</sub>	NPK 15-15-15 full dose (farmers practice)	NPK 15-15-15 @ 3.0 kg/plot
T <sub>2</sub>	Bio-plant + Pro-plant	Mixture of 10ml Bio-plant + 20ml Pro-plant in 20 ltrs water
T <sub>3</sub>	Pro-plant alone	20mls Pro-plant in 20 ltrs water
T <sub>4</sub>	Bio-plant + ½ NPK 15-15-15	Mixture of 10ml Bio-plant in 20Ltrs water + NPK 15-15-15 @ 1.5kg/plot
T <sub>5</sub>	Pro-plant + ½ NPK 15-15-15	20ml Pro-plant in 20ltrs water + NPK 15-15-15 @ 1.5kg/plot

#### 5.0 METHODS OF APPLICATION

- Full dosage of NPK 15-15-15 (300kg/ha) fertilizer was applied to plot 1 i.e T<sub>1</sub>
- In plot 2, Bio-plant liquid organic fertilizer was combined with Pro-plant liquid organic fertilizer
- Plot 3, have treatments with Pro-plant liquid organic fertilizer alone
- ½ dose of NPK 15-15-15 (150kg/ha) fertilizer was treated together with Bio-plant liquid organic fertilizer in plots 4, while plots 5, had Pro-plant liquid organic fertilizer with ½ dose of NPK

15-15-15

- Spraying was on stems and leaves at 2 weeks interval beginning from the second week after planting using 20 ltrs knapsack sprayer
- NPK application was by band placement method
- Planting of maize seeds was at 25kg/ha (2 maize stands/hill) at spacing of 75cm x 25cm
- All other agronomic practices were strictly followed
- Parameters taken include: date of planting and harvest, plant population after thinning, plant height at 12WAP, plant population at harvest and cob fresh weight/plot

## **6.0 RESULT AND DISCUSSION**

### **6.1 Plant Height at 12WAP**

The height average plant height across the three (3) farmers was 202.1cm recorded from T<sub>2</sub> where Bio-plant was combined with Pro-plant. While the lowest average plant height was 190.1cm from T<sub>1</sub> where NPK 15-15-15 (full dose) was applied.

\* Healthier plants were also noticed in T<sub>2</sub> where Bio-plant was combined with Pro-plant liquid organic fertilizer.

### **6.2 Fresh cob weight at harvest**

\* Results from the table also revealed that the highest average fresh cob weight at harvest across the three farmers was 5115.6 kg/ha from T<sub>2</sub> where Bio-plant was combined with pro-plant liquid organic fertilizer followed by 4611.0 from T<sub>3</sub> where pro-plant liquid organic fertilizers was used alone.

\* The lowest average cob weight (across the 3 farmers) of

4008.3kg/ha T<sub>4</sub> where Bio-plant liquid organic fertilizer was combined with ½ dose of NPK 15-15-15

\* Results from the table also revealed that in all the treatments where Pro-plant was used either alone or combined with either NPK or Bio-plant, appreciable yield increase was recorded. This was because, Pro-plant supplies all the major and minor nutrients which the crop requires to make it healthy, grow well and yield better.

**Table 6.3: Effects of Bio-plant and Pro-plant liquid organic fertilizers on plant height (cm) and fresh cob weight (kg/ha) of maize in Chanchaga, Niger State.**

Treatment	Mean Height(cm) at 12WAP			Average	Mean fresh cob weight (kg/ha) at harvest			Average
	F1	F2	F3		F1	F2	F3	
T <sub>1</sub> = NPK 15-15-15 @ 3.0kg/plot	190.6	192.5	187.9	190.1	5011	4534	4105	4550.0
T <sub>2</sub> = Bio-plant + Pro-plant	206.3	198.5	201.4	202.1	5231	5016	5100	5115.6
T <sub>3</sub> = Pro-plant alone	198.7	201.0	191.4	197.0	4615	5009	4209	4611.0
T <sub>4</sub> = Bio-plant + ½ NPK 15-15-15	191.6	197.2	186.5	191.8	4161	3989	3875	4008.3
T <sub>5</sub> = Pro-plant + ½ NPK 15-15-15	191.6	209.1	189.7	196.8	4578	5001	4235	4604.7

## 7.0 FARMERS RESPONSE

- Farmers were happy to participate in the trial
- They observed that the liquid organic fertilizer (Bio-plant and Pro

-plant) could be beneficial to them because they are environmentally friendly, handy and can increase yield in their crop.

## **8.0 OBSERVATIONS/RECOMMENDATIONS**

The trial needs to be repeated again to cover as many replicates as possible for confirmation. However, the following could be recommended based on the first trial conducted:

- Plots treated with Pro-plant combined with Bio-plant had significantly higher yield.
- In all the treatments, where Pro-plant was used either alone or in combination with NPK or Bio-plant, appreciable yield increase was recorded.
- Any treatment that involves Pro-plant is therefore highly recommended to maize farmers.