

The Director,
Farm Input Support Services Department,
Federal Ministry of Agriculture and Rural Development,
Garki, Area 11,
Abuja.

Attention: Alh. Isah Adamu,
(Assistant Director, Organic Fertilizer),
Organic Fertilizer Division,
Farm Input Support Services Department,
FMA and RD.

**REPORT ON FIELD EVALUATION ON EFFECTS MULTIFIX LIQUID FERTILIZER
ON MAIZE IN NIGER STATE.**

Please find attached the report of the on-farm evaluation trial on effect of MULTIFIX Liquid Fertilizer on maize conducted using three (3) farmers in Gidan Kwanu village during the 2017 dry season cropping period in Niger State.

2. MULTIFIX Liquid Fertilizer was tested on maize using three (3) different farmers to evaluate its impact compared to inorganic NPK fertilizer which the farmers were used to.
3. Results obtained revealed that plots treated with MULTIFIX and NPK fertilizers had significantly higher yield than plots not treated with any fertilizer.
4. MULTIFIX Liquid Fertilizer alone has to desire qualities to cause crop growth and higher yield in maize.
5. MULTIFIX Liquid Fertilizer is recommended for adoption over NPK fertilizer because it is environmentally friendly.
6. Report trial is however recommended to cover more replicates and many locations.

Thanks.

SULAIMAN A. RIJAU
DIRECTOR RESEARCH SERVICES
FOR: MANAGING DIRECTOR

**FIELD EVALUATION ON EFFECTS OF
MULTIFIX LIQUID FERTILIZER ON YIELD OF MAIZE
IN NIGER STATE**

**ON-FARM RESEARCH REPORT ON THE TRIAL
CONDUCTED DURING THE 2017 DRY SEASON MAIZE
PRODUCTION IN GIDAN KWANU VILLAGE USING
THREE (3) FARMERS IN NIGER STATE**

*In Collaboration with the Farm input Support Services
Department of Federal Ministry of Agriculture and Rural
Development, Abuja*

1.0 INTRODUCTION

- MULTIFIX has been proven to be a complete liquid fertilizer containing well balanced Nitrogen Phosphorus and Potassium (N,P,K) and most of the micronutrients which the plants require for optimal growth.
- It is claimed to provide natural and sustainable plant nutrition, better access to nutrient, improves resistance to pests and diseases.
- It had also been proven to reverse soil degradation and puts soil back on to the path to balance (balances the soil).
- Results of the trial conducted have proven beyond reasonable doubt all these claim made by the manufacturer.

2.0 EXECUTIVE SUMMARY

- Sample of MULTIFIX liquid fertilizer was brought and evaluated in Gidan Kwanu village 25km away from Minna during the 2017 dry season crop production.
- Three (3) different farmers were used and two (2) MULTIFIX liquid fertilizer rates (1Ltr and 2Ltrs in 20Ltrs of water), compared with treatments with NPK @ 300kg/ha (farmers/practice) and zero fertilizer as control.
- The grain yield without the addition of any form of fertilizer was 710kg/ha (i.e. 0.71ton/ha). The addition of MULTIFIX at 1Ltr in 20Ltrs of water was 3150kg/ha (i.e 3.15ton/ha – a 200% increase). The highest mean grain yield of all the treatments was 3490kg/ha (i.e. 3.49 tons/ha) where 2Ltrs of MULTIFIX was used in 2Ltrs of water. The plant height increased with increasing MULTIFIX application rate. Low level of pest and disease was noticed where MULTIFIX was applied.
- High yield results recorded from treatments with MULTIFIX was due to the available N, P and K with other essential micronutrient contained in it. Low pests/diseases incidence recorded was due to the products ability to improve the crops resistance to pests/diseases.
- MULTIFIX liquid fertilizer alone therefore has the required N,P and K that could cause increase in Maize Production and growth that could cause higher yield.
- MULTIFIX is highly recommended to maize farmers if affordable and easily available because its efficacy can favorably compete with NPK fertilizer 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 crops to validate this year's result.

3.0 EXPERIMENTAL PROTOCOL AND FIELD LAYOUT

- The trial was conducted using 3 different farmers at Gidan Kwanu village.
- The field was slashed, ploughed and ridges were made using local hoe and thereafter, the experimental was marked into 10m x 10m plots and planted with the farmer's local maize variety at spacing of 75cm x 50cm (2 stands per hole).

3.1 Treatments

T₁ = Multifix @ 1Ltr/20Ltrs Water
T₂ = Multifix @ 2Ltrs/20Ltrs Water
T₃ = NPK 20-10-10 @ 300kg (Farmers Practice)
T₄ = Zero Fertilizer (Control)

3.2 Methods Application

- ✓ MULTIFIX liquid fertilizer was applied to plots 1 and 2 starting from 2 two weeks after planting the maize as per treatment quantity. Application was on leaves (foliar) during early mornings (before 9am) and late afternoons or evenings (from 4pm). Four spraying regimes were made at two weeks interval.
- ✓ NPK 20-10-10 was applied only to plots 3 two weeks after planting using band placement method.
- ✓ Treatment 4 have zero fertilizer
- ✓ All other agronomic practices were strictly followed.

3.3 Parameters Taken

- Dates of planting and harvest
- Plant height at 10 WAP
- Disease/pest score at 7 WAP
- Grain yield at harvest

4.0 RESULTS AND DISCUSSION

4.1 Plant Height

- The plant height at 10 WAP increase with increasing MULTIFIX rate in most of the locations. The shortest height (as expected) was in Zero Fertilizer Treatment (i.e. control) with 90.3cm as compared to 187.3cm (which is the highest) in treatment 2 where 2Lrs of MULTIFIX in 20Ltrs/Water/hectare was used.

4.2 Pests/Diseases Score

- Low level of pests/diseases infestation was seen where maize was treated with MULTIFIX. This was because MULTIFIX has the ability to make the testing crop tolerant and resistance to pests and diseases.

4.3 Grain Yield

- Mean grain yield without the addition of fertilizers (T₄) was 710kg/ha (0.71ton/ha) and the addition of MULTIFIX at 2Ltrs in 20Ltrs water/ha concentration gave the highest mean grain yield of 3490kg/ha (i.e. 3.49tons/ha) – a more than 200% increase in grain production (see figures on table).
- With treatments using NPK 20-10-10 at 300kg/ha (T₃). The mean grain yield was 3265kg/ha only few kilograms higher than the yield from T₁ (3150kg/ha).
- The grain yield results from the trial indicated that MULTIFIX being a complete liquid organic fertilizer can complete favorably with NPK Fertilizer.

Table of effects of MULTIFIX liquid fertilizer on performance of maize in Gurusu Village of Niger State.

Treatment	Mean Pest/Disease Score (no) at 7 WAP	Mean Plant Height (cm) at 7 WAP	Mean Grain Yield (kg/ha) at Harvest
T ₁ = Multifix @ 1Ltr/20Ltrs Water	2.0	175.0	3150
T ₂ Multifix @ 2Ltrs/20Ltrs Water	1.0	180.5	3490
T ₃ = NPK 20-10-10 @ 300kg/hectare	2.6	181.6	3265
T ₄ = Zero Fertilizer	4.0	75.2	710

5.0 FARMERS RESPONSE

Farmers were very happy with the wonderful performance of MULTIFIX liquid fertilizer. They concluded that it easily available and affordable, MULTIFIX can automatically replace the NPK Fertilizer they are already used to.

6.0 OBSERVATIONS/RECOMMENDATIONS

The trial need to be repeated next year to cover as many replicates as possible for confirmation. However, the following could be recommended based on the first trial conducted.

- Plots treated with MULTIFIX and those treated with NPK had significantly higher fields than those plots not treated with any fertilizer. Fertilizer application (using MULTIFIX and NPK) therefore had significant impact on yield of maize.

- MULTIFIX alone especially at higher concentration have the desired quality to cause crop growth and higher yield in maize because the available N, P and K with other micronutrients contained in it (even though higher does encourage growth of weeds).
- MULTIFIX liquid fertilizer is recommended for adoption over NPK Fertilizer because it is environmentally friendly.
- Repeat trials are required for confirmation.