



# How Different Natural Fertilizers

36. Nassa

## Affect The Growth Of Maize

Petro Samson Ndegeleki and Juma Joshua Wiliam

### Introduction:

Natural fertilizer is organic substances derived from animal's wastes. These are added to the soil to provide one or more plant nutrients required for proper growth. So we thought how we can distinguish good and suitable natural fertilizers to the soil for proper growth of maize. These will help the farmers to improve soil structures due to the humus from decomposed organic matter. Humus from organic matter is mostly dark in colour and gives the soil a characteristic of dark colourization.

The important functions of organic fertilizers are not readily leached out rather they take a longtime to become soluble in water. Also they do not change the PH of the soil greatly like artificial fertilizers and they improve soil fertility by realizing a wide range of nutrients into the soil over a long period of time.

Aim: To discover which natural fertilizer is suitable and profitable for maize growth.



### Method:

Maize seeds, natural fertilizers ( bat, pig, hen, sheep and duck manure.), plots or nasturtiums, water, hoe, rake, rulers, paper, pencil, labels and pen.

**Step 1:** In our project we prepared 5 plots in terms of nasturtiums (which we labeled as PLOT A, PLOT B, PLOT C, PLOT D and PLOT E) , our plots each have the length of 270 cm and 126 widths.

**Step 2** Mix the natural fertilizers with the soil in the plot or farm you prepared. For example in our plots we mixed 2kg Of bat manure in plot A, 2kg pig manure in plot B, 2kg of hen manure in plot C, 2kg of sheep manure in plot D and 2kg of duck manure in plot E.

**Step 3** we irrigate 5 bucket of soft water for each plot.

**Step 4** Plant the maize seeds, consider spacing. For two seeds space should be 60-65cm and for 1 seed space should be 50-55cm. (according to the agricultural specialist) In our plot we planted 2 seeds so we use 60 cm

**Step 5** we measured the height of maize in each plot after 3 to 4 days.

Observe clearly to each plot and see if there is diseases to the seedling and how affect the seedling.



### Results:

#### PLOT "A" BAT MANURE

In this plot the seeds took 4days within the ground to become seedling after being planted. The seedling progress was very large in size and tall than the other. This plot which contains BAT manure improved the growth of the seedling hence they grow up faster compared to other plots. But when days goes on they tend to retard the growth rate due to high efficiency of attacking with diseases and bacteria composed to others. We do not expect to harvest in this plot due to diseases attacking seedling in plot A

Seeds no	April 6	April 10	April 14	April 18	April 22	April 26	April 30
1	4.2cm	9.5cm	23cm	32cm	44cm	55cm	65cm
2	3.9cm	10cm	15cm	20cm	26cm	32cm	40cm
3	5.1cm	14cm	25cm	34cm	43cm	52cm	60cm
4	4.9cm	17cm	26cm	35cm	42cm	53cm	60cm
5	4.1cm	12cm	17cm	29cm	31cm	42cm	50cm
6	4.5cm	23cm	22cm	34cm	43cm	50cm	61cm
7	4.7cm	15cm	26cm	33cm	45cm	54cm	65cm
8	5.4cm	17cm	23cm	36cm	44cm	56cm	70cm
9	3.9cm	12cm	19cm	26cm	32cm	44cm	50cm
10	4.6cm	11cm	20cm	31cm	43cm	50cm	58cm
11	4.4cm	10.6cm	21.5cm	33cm	43cm	51cm	60cm
12	5.2cm	14cm	25cm	34cm	46cm	55.5cm	70cm

MEASUREMENTS OF MAIZE GROWTH IN PLOT ' A' BAT MANURE IN FIRST MONTH (APRIL 2015)

Seeds no	May 4	May 08	May 12	May 16	May 20	May 24	May 28
1	78cm	94cm	123cm	146cm	160cm	171cm	190cm
2	51cm	83cm	111cm	130cm	142cm	155cm	165cm
3	71cm	92cm	128cm	140cm	163cm	189cm	200cm
4	72cm	90cm	110cm	121cm	134cm	139.5cm	145cm
5	61.5cm	97cm	126cm	147cm	168cm	189cm	200cm
6	73cm	100cm	130cm	146cm	171cm	188cm	200cm
7	78cm	101.5cm	134cm	156cm	160cm	164cm	170cm
8	81cm	115cm	137cm	160cm	181cm	193cm	204cm
9	63cm	88cm	107cm	131cm	148cm	160cm	172cm
10	69cm	87cm	112cm	134cm	150cm	163cm	178cm
11	71cm	81cm	105cm	130cm	155cm	160cm	178cm
12	82cm	100cm	123cm	153cm	178cm	191cm	209cm

MEASUREMENTS OF MAIZE GROWTH IN PLOT A BAT MANURE IN SECOND MONTH (MAY 2015)

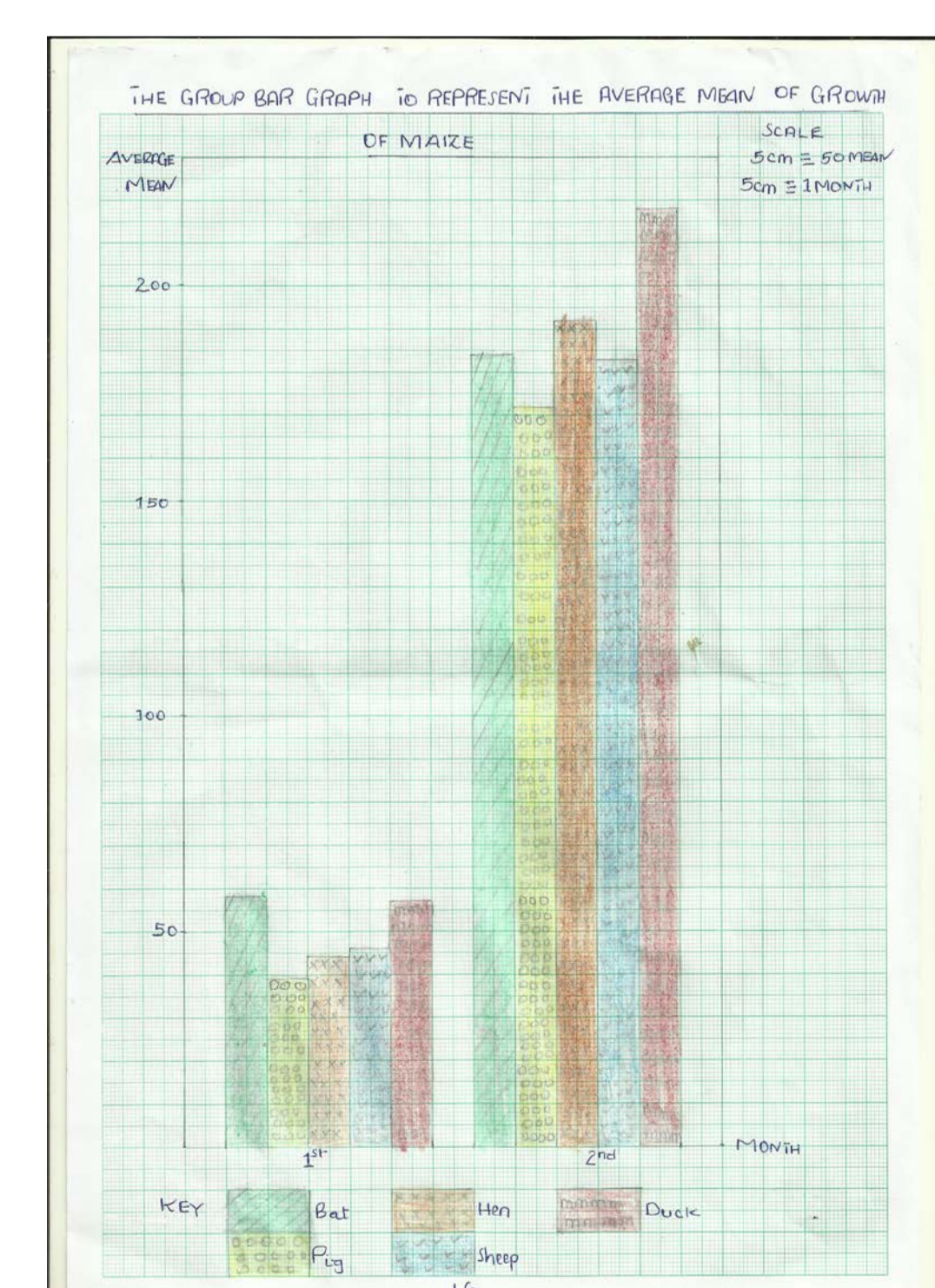
### Conclusions

The natural fertilizers according to our project based on observation made and a number of data collected has the effects in maize growth both positive and negative effects. The duck manure in plot E seems to be the best natural fertilizers since it has produced better maize. Also duck manure it helps to retain some amount of water in the ground which makes the seedling grow stronger and greenish throughout the season. Also duck manure acted as a pesticide to the seedling because due to the observation made in this project some other plot for example plot A which contain bat manure the seedling has got a lot of challenges like diseases which made the maize not to grow stronger and did not produce good corns of maize compared to plot E which contain duck manure.

Bat manure it can be more profitable for planting because as we can see from the data collected after planting maize seeds in plot A the seedling were the first to come out to the ground compared to other plots also the seedling grow stronger and was the best seedling compared to other plot too. But as time goes

the maize retarded, this implies that in the growth stage bat manure is not conducive for the maize growth may be for other crops.

This project is very important because big number of Tanzanian population live in villages, and about 80% of all Tanzanian population their economic activities is agriculture whether food crops or cash crops. Because large numbers of people depends on agriculture to full fill their daily needs, it necessitate us to distinguish which natural fertilizers is useful for maize growth for farmers since its locally available compared to artificial fertilizers which is some times expensive to farmers, and not all farmers can afford to buy artificial fertilizers.



### References

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