



## **SMALL FIELD FERTILISATION EXPERIMENT**

### *Demonstration for farmers*

#### **Location**

Farmer's Training Centre Lesho (FTC), Kacha Birra, The Federal Democratic Republic of Ethiopia.

#### **Aim**

To involve farmers into maintaining of different crop treatments under irrigation water regime and to show them the plant's reaction.



## Explanation

There will be **4 variants of treatment** for 3 common vegetables.

The first treatment involves the use of **artificial fertilizer** (DAP 18-46-0).

The second is with **organic fertilizer** (compost).

The third is with a **combination of the organic and artificial fertilizers** (one half of common amount of DAP, and one half of common amount of the compost).

The fourth variant is the **control** – without any of the added fertilizers.



## Crop sowing

The seeds will be sown in regular spacing. For this experiment plot (12 beds with 4 variants on small field experiment with 64 m<sup>2</sup>) we recommend:

for **carrot** 3 rows of 4 m length, seeds 30 mm from each other, 10–15 mm deep in soil;

for **onion** we need 320 seeds into 3 rows, 20–30 mm deep in soil;

**cabbage** should have in spacing 50x60 mm.



### **Artificial fertiliser DAP**

For this purpose we use the common **fertilizer DAP 18-46-0** with density  $1.620 \text{ g/cm}^3$ . The DAP is diammonium phosphate or diammonium hydrogen phosphate  $(\text{NH}_4)_2\text{HPO}_4$ . We can use common plastic cup for soft drinks with a volume of  $0.2 \text{ litre}$  ( $200 \text{ cm}^3$ ). The fertilizer should be spread on the surface of soil.

For **carrot** we usually use  $12 \text{ g}$  of nitrogen per square meter before sowing, what means  $60 \text{ g}$  of DAP (approximately  $37 \text{ cm}^3/\text{m}^2$ ). In 30 days after sowing we use the rest of fertilizing dose,  $15 \text{ g/m}^2$  ( $9 \text{ cm}^3/\text{m}^2$ ).

Recommended amount DAP for **onion** is  $20 \text{ g/m}^2$  ( $12 \text{ cm}^3/\text{m}^2$ ).

For **cabbage** we need  $45 \text{ g/m}^2$  before sowing and  $45 \text{ g/m}^2$  when the plant has 8 leaves. Weight  $45 \text{ g}$  is  $28 \text{ cm}^3/\text{m}^2$ .

## **Irrigation and other crop treatment**

All the variants would be under usual irrigation – just like the coffee seedlings nearby the demonstrations plot (irrigation in the morning by the use of a watering can, but no irrigation after the rain). The insect and weed control and all other agronomic practices will be similar in all treatments to all crops and they will be done as farmers usually do. All the variants will be marked with signposts with description in amhaari language.

## **Records of crop growth and harvest**

Every two weeks the status of every crop in every bed will be described in few sentences into the experiment note book: the health status (diseases, bugs etc.) and the overall performance. During this time the farmers should be allowed to compare and discuss in the field, which variant is performing better than others during their farmers´ training exercises.

The harvest should be done with farmers (at the proper time for each vegetable) and they will measure the most important parameters. It will be all written into the tables and compared:

**carrot:** weight and length of each root;

**onion:** weight, diameter of each bulb;

**cabbage:** the weight and diameter of each piece.

All the notices and results will be sent to project manager for the use of the future purposes within this project.