

Aphids can be controlled using Dimethoate 40% EC. Apply as cover spray. Use 34 g Dimethoate powder in a litre of water for up to 3 week old seedlings and 68 g Dimethoate powder per litre of water for old plants. For the liquid formulation of Dimethoate, use 0.5 ml in a litre of water up to 3 weeks old and 1.0 ml per litre of water for the older plants.

d. Harvesting and storage:

The crop should be harvested as soon as the pods are ready. Delayed harvest may result in losses due to rotting, termite and mouse attack and increased bruchid infestation. Pods should be moved in the morning hours to avoid shattering. Dry the beans and thresh by using hands or sticks. Store well dried beans, in clean containers and treat with Actellic (1 sachet to 90 kg of seed) or adequate ash (0.25 – 0.5: 1 beans by volume) to prevent weevil damage. The inclusion of crushed tobacco leaves with the ash increases the degree of control. Regular sunning (once a week for 6 hours or more) will further reduce weevil damage.

7. Seed

Bean seed of improved varieties can be obtained from reliable sources, check with agricultural extension agents in EPAs, and NGOs nearest to your area. Once farmers have planted the improved bean varieties, seeds can be recycled for a few years without degeneration. Farmers are therefore, encouraged to keep part of their produce as seed for the next season. Seed should only come from a disease free crop and should not be damaged by insect pests.

8. Food value of beans

Dried beans are the best source of proteins among the food from plants. When they are eaten with cereals, they provide a cheap source of protein which comes from meat or fish. They also provide energy, fibre, minerals and vitamins.

Beans are important for nutrition so grow your own beans and cook and eat more of this nourishing food.

Basic preparation of beans

Dried beans should be clean, sound and free from weevils, dirt, mould and mustiness.

Soak dried beans overnight or for 4 to 6 hours to shorten cooking time.

After soaking bring to the boil, reduce heat, cover and simmer until soft.

After boiling, beans may be seasoned and eaten or they can also be combined with other ingredients.

NOTE: Do not use baking soda to tenderize beans because soda destroys B vitamins

(Contact your FA or FHA for some recipes)

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IMPROVED BEAN VARIETIES



Kholophethe (SUG 131)



Kabalabala (UBR (92)25)



IMPROVED BEAN VARIETIES

(*Phaseolus vulgaris*)

Kholophethe (SUG131) &

Kabalabala (UBR(92)25)

Production Package

Introduction

Beans are important for food as well as cash in Malawi. Most farmers use their own bean varieties which are low yielding. Chitedze Research in collaboration with CIAT/ SABRN developed additional two new improved bean varieties (Kholophethe and Kabalabala) which are high yielding and are recommended for production (released) in Malawi in addition to the six earlier released varieties (Maluwa, Napilira, Sapatsika, Kambidzi, Nagaga, and Mkhalaria).

Agro-ecologies

These varieties are recommended for production in all bean growing areas (can be produced with rain-fed in highland areas, medium altitude areas and/or low altitude areas with residual moisture or irrigation).

Kholophethe is large seeded (45g /100 seeds), with cream background and red speckles (sugar bean). Kabalabala is small seeded (25g/ 100 seeds) with white background (navy beans).

Agronomic practices

Under good management beans grown in pure stand can yield up to 2500 kg per ha. To improve bean yields the following cultural practices are recommended:

1. Varieties

Farmers should be encouraged to use good seed of improved and recommended varieties for the production areas.

2. Field preparation and planting

Fields should be prepared early, by November in the South and December in the centre and north of Malawi for the rainy season crop. The Dimba crop is planted when climate is favourable, ranging from May to July along the lakeshore.

3. Plant population

To achieve high yields the correct plant population should be observed as follows:

a. Pure stand

Plant dwarf beans in rows spaced at 30 cm apart on the ridge. Plant 1 seed per hole, 10 cm apart, in the ridge. Ridges should be 75-90 cm apart. This requires 70 to 80 kg of seed per hectare for large seeded varieties (eg Kholophethe), and 50 to 60 kg of seed for small seeded varieties (eg Kabalabala).

b. Intercropped with maize

When maize is planted at 90 cm apart (3 seeds per station), place four planting stations in between the two maize planting stations. Plant 1 bean seed in each of the four planting stations. You will require 40-50 kg per hectare

c. Intercropped with maize

Under dimba cultivation, plant dwarf varieties in rows 45 cm apart, two seeds per planting station spaced at 20 cm. This requires 40-50 kg of seed per hectare.

4. Isolation

Beans are self pollinated so there is little risk of varietal contamination through foreign pollen from nearby bean crops. However, there is need to separate different varieties by a few metres to avoid physical mixing.

5. Fertilizer application

Most farmers do not apply fertilizer to their bean crop if it is grown in pure stand. However, farmers who intercrop beans with maize, often apply fertilizer to their maize, and the beans benefit from this. The recommended fertilizer application for the pure stand of beans is 20 kg/ha of N and P2O5 which requires 100 kg of 23:21:0 + 4S fertilizer. Manure can be applied if fertilizer is not used.

6. Pest control

a. Weeds: The crop should be kept weed free during the first six to eight weeks after planting. Weeding should stop after flowering to avoid flower shading.

b. Diseases: Use disease tolerant varieties. The new varieties have tolerance to the major diseases.

Insect pests: The major pre-harvest bean pests are the bean stem maggot (BSM), bean beetles and aphids.

BSM causes wilting and is often termed a 'blight' by farmers. The attack may be avoided by planting early. Mortality due to BSM may be reduced by growing improved varieties; by applying a mulch (to remain in place for the lifetime of the crop); by applying manure at planting; and by earthing up around the base of the plants at first weeding (2 to 3 weeks after emergence). When available, Amigo (applied at the rate of 1 litre Amigo to 50 kg of seed) can be used as seed treatments.

Bean beetle can be controlled with Carbaryl 85 WP applied as full cover spray at the rate of 85 g in 14 litres of water. Spraying should be done only when the infestation is likely to cause damage. In areas where this pest is severe early planting should be avoided.