

Black Nightshade Farming (Managu)



Local Names:

Swahili- Mnavu, **Kikuyu-** Managu, **Luhya-** Namaska, **Luo-**Osuga, **Kipsigis-** Isoiyot, **Kamba-**Kitulu, **Maa-** Ormomoj, **Taita-**Ndunda, **Luganda-**Nsugga

Black Nightshade is becoming popular for being nutritious and selling well in cities. It has lots of protein, calcium, iron, and other good stuff. Leaves have Beta-Carotene and Vitamin E. It's healthy and loved by most people in rural and urban areas.

Common varieties include - *Solanum Eldoretii*, *Solanum Scabrum*, *Solanum Americanum*.

Ecological conditions

- **Altitude** - 0 - 2,400 meters above sea level depending on the variety.
- **Rainfall** - 500 - 1,200 mm well distributed rainfall.
- **Growing Temperature** - Does well in warm temperatures.
- **Soils** - Use well-drained soil with lots of organic matter. They like this because they need a lot of Nitrogen for good leaf growth.

Raising Seedlings

Use of clean, certified seeds from a well known store or agro-vet. Certified seeds are less likely to be attacked by pests and diseases, meaning your plants will be healthier.

You will need 50 grams of seeds per acre.

Nursery Establishment:

- The nursery should be located in a plot that has not been planted with crops like tomatoes, brinjals, potato, capsicum, Managu etc. for at least three (3) years.
- Dig the land well using a jembe to get a fine and even bed. Managu has small seeds hence the soil needs to be very fine. This helps them grow easily.

- Spread well rot manure on the field. Mix manure with soil at a rate of 1kg per square meter.
- Remove weeds and level the seedbed., raise the beds 20cm high, 1 meter wide then level well.
- To plant the seeds, mix seeds with sand, use a ratio of 1:10 (25g pack in 250g clean dry sand) This is enough for a plot of 10 meters by 10 meters. Put seeds gently in the lines, not too close, about 10-20 cm apart
- Mulch the nursery and water after planting.This will help in maintaining the soil moist.



Raise beds,make drills and thinly sow the seeds.

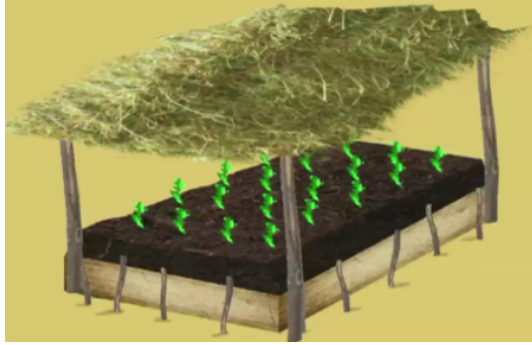
Note: Trays can also be used for raising seedlings.

Management of Nursery:

- Adequate watering is essential for proper growth. Give enough water for good growth
- Water the nursery daily or weekly or twice a week or water when there is no rains
- The nursery should be mulched to conserve moisture.



- After a week (7 days), the seeds start to germinate. Remove the mulch carefully and erect a light shade for another 1 week to help the seedlings adapt fast.



- Finally, use ACTARA or MIDA to control or stop early pests attacking your seedling when they are young

Hardening off (Getting Plants Stronger for the field)

- Hardening off is done starting on the 3rd week after planting . This is by slightly reducing the shade and rate of water application. Make shade a bit less and water a little less often. It helps plants get tougher.
- When plants are 3 cm tall, they can be allowed to face the external environment where the weather is tough and not nice. watch the weather, too. It helps them adapt well. Later, in the 4th week, remove all the shade.

Transplanting

- Transplant Seedlings 30 days after planting or when having the first 5-6 leaves and have attained a height of 10-15 cm.
- Plant at a spacing of 30 cm between the row and 10-15 cm between plants.
- Use the recommended fertilizer from your soil test results and manure. Managus do well where is well rotted animal manure such as from cows goats or chicken

Field management

1. Weeding

- Timely weeding gives your crop better conditions to grow by reducing competition for food and light between weeds and Managu. It also reduces pests and diseases at the early stages which helps increase yields.
- Weeding should be done as soon as weeds emerge and before the flowering of weeds. This will reduce the risk of weeds spreading.
- 14 days after transplanting, cut off the tips of the plant so that they can develop more branches. This leads to the plant developing more leaves. You will harvest more healthy leaves for the market.

2. Top-dressing

- Nitrogen is required in fairly large quantities in crops. Managu needs a lot of Nitrogen to grow well
- Apply CAN fertilizer at the rate of 10 g per plant, 10-15 cm away from the stem in a circular manner. Application of foliar fertilizer like EASYGRO Vegetative is beneficial to this crop.

Diseases affecting African Nightshade

Managu shares the same disease that affects crops like Tomato,capsicum,potato. These are crops of the same family. Just like any diseased living organism, diseases on your Managu plants will lead to poor quality of produce. The major ones are:

- Early Blight
- Bacterial blight



Early blight

1. Early Blight in African Nightshade

This is a plant disease that is common in areas where the climate is hot and humid. Once early blight affects your Nightshade plants, it becomes very hard to control it.

Early blight in Managu is shown by big round brown circular spots that start on the oldest leaves and then progresses to the other part of the plant. Eventually, the whole plant will drop all leaves and die.

To control early blight in Managu:-

- Use tested and approved(certified) seeds, and if you produce your own seeds, treat them with hot water
- Pick and throw away all sick leaves and old plant parts. It keeps the plants healthy.
- If your farm is in a hot and humid area, increase the spacing between your plants

- Rotate your crops from season to season, especially with crops like Amaranth. Avoid rotating with crops from the same family, for example, tomatoes, capsicum, and potatoes.
- Spray with a fungicide like Revus or Ridomil.

2. Bacterial Blight in African Nightshade

If your nightshade is infected with bacterial blight, you will notice small round wet spots on the leaves that will later turn black and hard.

Bacterial blight in Managu is hard to control, so when you notice your plants are affected, do not grow Managu for the next 4 years.

To avoid bacterial blight on your managu:-

- Use tested and approved(certified) seeds. If using your own seeds, treat them with hot water
- Practice crop rotation. Do not grow Managu on the same piece of land, if you notice the disease, for 4 years.

Pests affecting Nightshade

Just like the diseases affecting Managu share the same pests with other plants from the solanaceous family(Tomato,capsicum,potato etc). These are:-

- Aphids
- Cutworms
- Root-Knot Nematodes
- Flea Beetles

1. Aphids on Nightshade



If you notice that some of your Managu leaves are curling from the edges and losing their smooth shape, look underneath. You will most likely see tiny light green insects, sometimes covered in whitish powder. Meet the Aphids, tiny pests that cause huge damage on African nightshade. They suck sap from the plant, deriving the plants the much-needed nutrients.

To control aphids in Managu, use ash or pesticides such as Karate. When using pesticides, make sure you observe the recommended preharvest interval before harvesting the Managu leaves.

2. Cutworms

Cutworms as the name suggests cut the plants entirely or partially by feeding on the base of the stem. They are brown or black in color and usually hide near the base of the Managu, coming out at night to eat.

To control cutworms:

- Remove weed early enough, so as to destroy their egg-laying areas.
- You can also remove the cutworms by hand, as they are easily found near the soil where they cut the plant.
- Use an insecticide like AMPLIGO or KARATE

3. Root-Knot Nematode

Root-knot nematodes affect the roots of the nightshade plants. They are shown by swollen parts of the roots. They lead to poor uptake of water and nutrients from the soil, leading to poor growth.



To control root-knot nematodes;

- Practice crop rotation with crops from a different family.
- A lot of manure applied to the soil is also known to control nematodes.
- Leaving the land bare for one or two seasons will also get rid of nematodes.
- Drench the soil with Bionematone at planting.

4. Flea Beetle

Flea beetles feed on plant material. They will leave big holes on the leaves of Managu especially when the plants are young.

To control the flea beetle

Make sure you remove all the weeds and destroy any plant material that might be the host for flea beetles.

Harvesting and Post Harvest of Managu

Your Managu plants are ready for harvest 30 days after transplanting.

1. Harvesting Managu

There are two methods for harvesting Managu:-

1. **Complete uprooting** – the whole plant is uprooted and sold as a whole. This method is not common as the farmer will only have one harvest
2. **Picking Leaves** – With this method, leaves are picked from the plant on a weekly basis. This starts after 30 days of transplanting. This method is the most preferred as it gives the farmer continuous produce for 3 to 4 months. (ensure to not wound the stems while picking to avoid spread of diseases)

The most common way of harvesting is regular picking of leaves (multiple harvesting), twice per week.

Remove the flowers regularly to ensure the plant continues to produce more leaves, instead of focusing its resources on developing the fruits.

African nightshade fruits can be harvested for its seeds and also for value addition as Jam and dye.

Yields: Ranges from 4.8 tons to 8 tons of foliage per acre depending on the variety and management

2. Post harvest handling for Managu

Harvest managu leaves early in the morning, and take them to the market during the day. Alternatively, you can harvest in the afternoon, stored in plastic bags or banana leaves, to keep them fresh and taken to the market the next day.

Sort to remove dried or yellowed leaves and those damaged by insects. Grading African Nightshade leaves is done according to the size of leaves, with same-sized leaves being bundled together.

Fresh Managu leaves can be washed, blanched and dried. They can be dried and stored in plastic containers for future use.

Value Addition for African Nightshade:

Managu seeds can be used to make jam or dye. Dried leaves can be mixed with other dried vegetables, packaged well and sold as a dried vegetable mix.