

PRODUCTION GUIDELINES FOR AFRICAN BIRD'S EYE CHILI

1. ORIGIN

African Bird's Eye chili is mainly produced in Malawi, South Africa, Ghana, Nigeria, Zimbabwe and more recently, Uganda.

2. MARKETS AND USES

a. Markets

Local buyers:

- Mace Foods Ltd.
- Equator Products

b. Uses

- Curry ingredient
- Pharmacology
- As organic pest control spray
- In Tear Gas

3. ECOLOGICAL CONSIDERATIONS

a. Altitude

Ranges from coastal lowlands to lower-midlands, from sea level to 1,500 meters

b. Temperature

Optimum range: 20 degrees to 30 degrees Celsius

- Minimum: 16 degrees Celsius
- Maximum: 32 degrees Celsius

c. Rainfall

Can survive a wide range of rainfall, generally very draught resistant

- Optimum range: 600 ml to 1,200 ml per year
- Excess rain can defoliate crop and cause rotting
- Extreme water deficits can stunt growth and cause flower abortion and fruit drops

d. Soil

- Ranges from light-sand to heavy clay
- Ideally suited for well drained, aerated and light- to medium-textured sandy loams
- Ideal pH: 5.8-6.5, but can tolerate slightly higher pH levels

4. SITE SELECTION

- Site should not be intercropped with any Solanum related crops
- Site close to water source is an advantage but not a requirement

- On slopes follow the contour rule

5. CROP PLANNING

- In rain-dependent areas, time planting to coincide with rainy seasons
- Plan fields to enable crop rotation, fertility maintenance and disease control

6. NURSERY ESTABLISHMENT

a. Area selection

- Choose a site with rich, friable soil. Till well to loosen the soil
- Choose an area near a water source
- Choose an area protected from animals
- If possible, use an unfarmed area

b. Preparation and sowing

- Soil bed: 1 meter by 3 meters by 15 centimeters high
- Till until soil is fine
- Sterilize soil with an airtight cover of polythene for 1 to 3 months
- Remove and mix soil with 10 to 15 kilograms of potent manure per square meter
- Sow the seeds 1.5 centimeters deep in holes that are 6 to 7 inches apart
- Seed rate: 75 to 100 grams per acre
- Cover the bed with mulch and water
- Use of seedling trays is more accurate and recommended especially for expensive hybrid seeds, and because they offer more uniform germination and growth

c. Nursery management

- Water every morning and evening with a fine rose shower. When possible, check soil moisture before watering
- As soon as seeds start germinating, remove mulch and create a temporary shade of about 50 percent, using shade net or grass mulch.
- Monitor for disease and pests regularly and react accordingly
- The most common nursery disease is damping off
- Typical pests include aphids, thrips, mites and whiteflies
- Germination is complete after 1 to 3 weeks
- Crop is ready for field 5 to 6 weeks after emergence in nursery

7. MAIN SITE PREPARATION

- Plough deeply and harrow well in dry weather to eliminate most perennial weeds and grasses
- Plough 2 to 3 weeks in advance
- Prepare raised contour beds, 1 meter wide with centers spaced 1.5 meter apart – leaving a 50 centimeter pathway
- Incorporate properly cured manure into field at 10 tons per acre.

8. TRANSPLANTING

- After 5 to 6 weeks, when the seedlings are 6 to 10 centimeters long they are ready to transplant
- At 4 weeks, start to harden seedlings through reduced watering
- Transplant during rainy season or irrigate well during transplanting
- Spacing within bed can vary from 60 centimeters by 60 centimeters to 60 cm by 45 cm to 1 meter by 1 meter, depending on cropping period
- Mulch crop immediately after the rains as it reduces time spent at first weeding

9. CROP MANAGEMENT

a. Fertilization

- Use DAP/TSP at planting depending on soil sample test results
- Manure rates: 10 kilograms per square meter is adequate. Will not need any chemical fertilizer supplements if well rotted and repeated every 4 to 6 months

b. Pest control

Cutworms, thrips (*Sciothrips dorsalis*), Aphids (*Aphis gossypii*), and Red spider mites (*Polyphagotarsonemus latus*) are the most common pests

- Use neem-based extracts as repellants and as drenches against flying insects and cutworms, and soap solution



c. Disease control

Mainly rots and diebacks, caused mostly by *Colletotrichum Capsici* and bacterial wilts; others include blights, mildews and rust.

- Careful seed selection and phytosanitary measures will keep most ABE diseases in check
- Practice crop rotation to prevent crops of the Solanaceae family from being planted in the field at the same time e.g. tomato, potato, sweet pepper, black nightshade, etc.
- Apply Copper Sprays like Kocide DF, Cuprocafaro, Funguran and Copper ox chloride, which are easily available
- Seed Treatment: Use root Guard. Gaucho is also used to prevent “damping off” at the nursery stage

d. Weed control

Shallow weeding, roughing and mulching are recommended to reduce root damage, and minimize frequency of weeding.

10. MATURITY AND HARVESTING

a. Harvesting

- Crop is ready for first fly picking between 2½ to 3 months
- Picking continues for 3 to 4 months
- Harvest all the Red Ripe Chilies as soon as they appear
- Chili sizes vary from 1 centimeter to 3 centimeters long
- Continuous, prompt and complete picking optimizes production while poor harvesting can reduce yields by as much as 50 percent
- Do not pick chilies with the stalks
- Picking Rate: Harvest laborers are paid 10 Ksh to 20 Ksh per kilo
- An average laborer can pick as many as 6 kilos per day

b. Yields

- 1,000 kg to 3,000 kg per acre (depending on management)

c. Postharvest handling

Picking **must** be done with clean cups and buckets and the pickers **must** wash their hands with soap and water before and after picking. A bucket of soap and water **must** be in the field at all times.

d. Drying

- Dry in open air, spread on well-aerated polysacks on raised racks. Or use special solar cabinets that enclose or seal shut to ensure efficiency and hygiene.
- Drying **must** reach a moisture content of 13 percent before storage to avoid growth of Aflatoxins
- Storage should be in gunny bags in dry, well-ventilated stores and should not be handled to limit irritation and maintain pungency

11. GROSS MARGIN ANALYSIS

It is important that farmers maintain records for all costs to help monitor profits and losses.