

What is this Action Sheet about?

This Action Sheet is a guide to growing bird's eye or Tabasco chilli written by the Elephant Pepper Trust in Livingstone, Zambia. Chilli can be grown anywhere that is not prone to frost. They do well in areas which are warmer with temperatures ranging from 21°C –26°C in soils which are deep, well-aerated and well-drained sandy to clay loams are fine. It is good crop that can be grown on small scale.

This crop falls in the same family as tomatoes, potatoes and tobacco. The scientific name is Solanaceae. So when growing them you should avoid mixing or growing next to each other since diseases and pests that affect them are the same. It is advised to grow them far away from each other.

Site Selection, Soils and Temperatures.

- Chillies do prefer areas that warmer and not prone to frost and access to water. The optimal field capacity moisture content is 60% but does not do well in water logging areas since it has shallow roots.
- The optimum pH scale range is 6.0-7.0(CaC12)
- Optimum temperatures ranges from 21°C - 26°C and temperatures below 10°C it ceases to grow. Temperatures higher than 38°C the crop is susceptible to fruit and flower abortion.
- The chilli is a perennial plant that can survive for three seasons and it is advisable to cut off during the wintertime for it to prepare for the rain season or irrigation.

Seedbed Management.

- Seeds from EPDT are recommended for optimum germination.
- Deep, well-aerated and well-drained soils are recommended.
- Avoid water logging areas.
- Site to be cultivated to a fine tilth.
- Burn the seedbed area to kill all weeds seeds and bacteria & viruses in the ground.
- Seedbed dimensions recommended are 10 x 1,2m.
- Water should be from clean sources to avoid nematodes and weeds in the seedbed. Keep the beds wet until germination is complete.
- The seedbeds can be fertilised with animal dung if available.
- Hardening off is advised when seedlings are approaching planting size of 12-15cm in height approximately 2 weeks.
- Seedbed hygiene should be exercised to avoid contamination.
- Transplanting and pulling should be of as for tobacco, and watering the seedbed 2-3 times as much, two days before transplanting.

Land Preparations and Spacing Management.

- The land needs to be pre-irrigated to form a fine tilth if the soil is too dry.
- Planting out is anytime from August up to end of November.
- Ridging the land is advisable to avoid water logging and spacing is 45cm within rows and 60cm apart from rows. The ridges should be raised about 45-50 cm high.
- Walkways of 50cm should be maintained for plant inspection.
- Fertilizers can be added at rate of 500-900kg per ha if available and manure can substitute for fertilizers.
- Gap filling is important to be maintained to ensure uniform growth.
- Mulching is advised to put to conserve moisture and weed control.
- Early flowering and fruiting is experienced within 10 days after transplanting so they should be removed to encourage vegetative growth of the plant.
- The crop like any other crop needs to be kept free from weed.

A) Fertilizers.

- Local manure is encouraged.
- Also mulching can help add manure in the soil.
- Putting cattle manure in a hessian bag and submerge for two weeks then water can be put along the plants as liquid manure.

B) Chemical Fertilizers.

- Crop nutrient requirements is as follows:
 - Nitrogen – 180kg/ha
 - Phosphorus – 180kg/ha
 - Potassium – 200kg/ha
 - Sulphur – 35kg/ha
- Fertilizer advised to be broadcasted before forming the seed-beds to avoid burning of roots of seedlings.
- Soil analysis is advisable to be taken to see amount and type of fertilizers to be applied in the area.

C) Fertilizer Application.

Fertilizer	Application
<i>50-180kg/ha depending on the soil type.</i>	<i>Land preparation time</i>
Ammonium nitrate	After 4 weeks of transplanting the seedlings into the field.
Ammonium nitrate	After 7 weeks of transplanting the seedling into the field
Potassium Sulphate	This type of fertilizer is applied to boost up the flowering of the plants.

Management of Pests

Pests	Description	Treatment/Chemicals
Aphids	An attack leaves mostly, curling.	Dimethoate, Orthene, Thionex
Cutworms	Eats the stems or starting from the roots	Orthene, Tamaron, Karate
Bollworms	Bores the fruits, causes premature ripening of fruits & drop off.	Dimethoate, Orthene, Thionex
Whitefly	Incidental pests depending on environmental factors	
Termites	Incidental pests depending on environmental factors	
Red spider mite	Affects the leaves & stems	
Thrips	Sucks the leaves & leave some pimple blotches	Malathion, Sulphur
Crickets & Mice	Can damage seedlings if unattended at storage time	Baiting or cupped chlorpyrifos at base.

The rates to use of the chemicals are found on the label of the chemicals. Chemicals are very dangerous they need to be used very wisely. They need to be kept with tight security to avoid children and any other mammals. It is advised that you keep **scouting** your field to avoid a vast outbreak of pests. This reduces the costs in buying of chemicals. Other animals that can be a problem are kudu, impala and some birds.

Disease Management

Diseases	Description	Treatment/Chemicals
Early Bright		Dithane, Bravo, Copper.
Powdery Mildew	Affects fruiting plants caused by prolonged wet conditions. Shedding of leaves is discovered	Sulphur, Bayfidan, Baytan
Bacterial Spot	Fruits appear water soaked & later brown, caused by damp conditions	Dithane, Bravo, Copper
Alternia		Dithane, Bravo, Copper
Antracnose	Appear due to damages caused by insects, develop in high temperatures & rain	Dithane, Bravo

The chemicals are sold in licensed shops only. **Scouting** of your crop regularly in the field is greatly advised. This helps you to see diseases out break before they contaminate the whole field.

Picking and Drying.

- Chillies get ripe at 14-16 weeks after transplanting depending on temperatures and this happen in flashes.
- The fruit does not drop when dry so it is a labour intensive especially at its peak time.
- One labourer should pick at least 1kg per hour and when picked can be dried on the barn floor during summer time or in a shed.
- In wintertime can be dried on plastic sheets under shed, sun-drying bleaches the colour of the fruit but need to turned regularly until they are dried. Hessian cloth is better moisture build up cannot happen.
- Red fruits are picked up when 95% red colour is established on the fruits.
- Picking should be done in open woven poly bags or wicker baskets.
- Avoid plastic bags since fruits rot quickly.

Grading and Storage.

- Grading is very important because failure to do it properly will result in down grading in the price per grade achieved.
- Generally there are two grades i.e. A grade being red/gold colour and B grade being mottled or brown colour.
- When graded they need to be stored in cool dry place and avoid contact with moisture to build moulds.
- Pack in standard polypropylene grain bags of 30-20kgs.
- Beware of rats and weevils.

Slashing/ Re-ridging.

- Slashing down the plants when finished harvesting encourages the plants to shoot out well to re-grow.
- Re-ridging is advised but needs to be done carefully to avoid disturbing roots.
- If irrigation is being practised fertilizers can be added to the crop for vegetative growth.
- The chillies have a tendency of increasing yields as the number of year's increases. The second year you have yields more than the first year.

For more information

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