



Eggplant Production

IDEA-NEW



Eggplant Introduction

- Eggplant belongs to the same family (solanaceae) as potatoes, tomatoes, and pepper
- It has been under cultivation in the Indo-Pakistani subcontinent since ancient times and is available in the market year round.



Climate

- Eggplant is a warm season crop that requires a long growing season for successful production.
- Eggplant grows best at temperatures 21-29 °C but does not grow well when the temperature is greater than 30°C
- High temperatures and high humidity also reduce yields.



Soils

- Eggplant requires fertile, well drained soil
- Best pH for Egg plant from 5.5 to 6.8
- A sandy loam soil is ideal for early production,
- Clay-loam and silt-loam are well suited for high yields.

Cultivars

- Eggplants fruits come in different shape and color
 - Fruits can be round, long, oval, or pear shaped
 - The preferred color for fresh consumption are pinkish-purple, violet and black
 - Other desirable characteristics are:
 - high productivity; pest resistance; early maturity; vigorous plant habit; and heat tolerance





Cultivars

- Some common varieties cultivated in the ER are:
 - Summer crop:
 - Black Beauty, Long Purple, Round Black, and Pusa Purple;
 - Fall crop:
 - Black Beauty Long, Super Long Beauty.
 - Calliope F1, new hybrid tested for the summer and fall planting

Calliope F1





Seedling Production

- Eggplant seedlings can be produced on the Field or on trays
- Field nursery
 - 60 – 100 g/Jerib
 - Make a raise bed
 - Incorporate DAP and Animal manure into the bed
 - Plant the seed in rows – distance is not important
 - Cover the bed
 - to protect the seed from heat and keep moisture on the ground
 - to protect the seed from low temperatures (cool days)
 - Apply fungicide

Eggplant Field Nursery



Seedling Production

- On trays
- Plug-seedlings
 - Establish an uniform stand in the field
 - Eggplants seedlings are ready for transplanting in 5 – 7 weeks, with 3 – 4 leaves, stocky, and healthy





Eggplant Planting

- The Spring-Summer crop
 - Sowing in early January – Check soil temperature for planting, seed needs 16 °C min for germination
 - Transplanting on February
- Summer crop
 - Sowing in March and April
 - Transplant seedlings during May and June.
- Fall/winter crop
 - Seed sowing in June
 - Transplant in July.

Planting Techniques

- Raised beds are recommended for Eggplant production
 - 1.1 m bed-center to bed-center
 - two rows per bed, separated 40 cm
 - Plants are alternate planted with 60 cm in between
 - Population density, 6,000 plants/Jerib





Fertilization

- The current recommendation for eggplant production in Eastern Region is to apply and incorporate 4-5 T/jerib farm yard manure during land preparation.
- A total of 20 Kg/jerib N and 10 Kg/jerib each of P₂O₅ and K₂O should be applied during the season.
- Half the N and all of the P₂O₅ and K₂O should be applied just before transplanting.
 - The rest of the N should be top-dressed in two splits 40 and 80 days after transplanting.



Irrigation

- Although eggplants are *fairly drought resistant*, they require regular irrigation to obtain maximum yield
- Irrigation is most critical during the time of flowering and fruit set.
 - A lack of water during this period could lead to the development of blossom end rot and malformed fruit.
 - During the early stages of plant growth, irrigation should be done once a week.
 - At flowering, the irrigation frequency should be increased to twice a week. Irrigation may need to be more frequent during fruit set and filling.
 - Wilting during the late morning is a good indication that the crop needs additional water.



Weed Control

- Eggplant is slow to become established and cannot compete with aggressive weeds.
- Weeds also harbor for insects and diseases.
- Weeding can control weeds if done immediately when they are observed
 - Frequent shallow cultivation

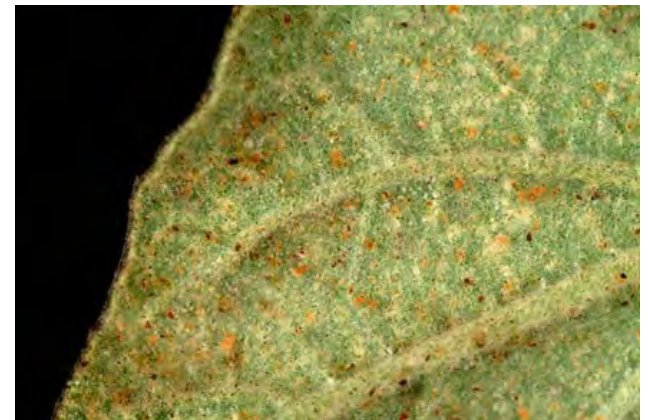
Fruit and Shoot Borer, *Leucinodes orbonalis* and *Euzophera perticella*

- Fruit and shoot borer can be very destructive and they are wide spread in S & SE Asia.
- Larva bore in terminal shoots and young fruits (feeds inside)
- Larva also bore plant stem, killing the plant
- Control
 - Remove affected fruits and shoots from field
 - Destroy plant residues after harvest
 - Plough the field deeply
 - Appropriate crop rotation



Mites, *Tetranychus urticae*

- They are very tiny, red in color, and barely seen by the naked eye.
- Red spider mites are found mainly on lower surface of leaves.
 - They lay their eggs on the lower leaf surface.
 - Tiny orange nymphs hatching from the eggs feed on the leaves.
 - Within a week, nymphs turn into dark orange to red color adults
- Horticultural oils, horticultural soaps and Kelthane



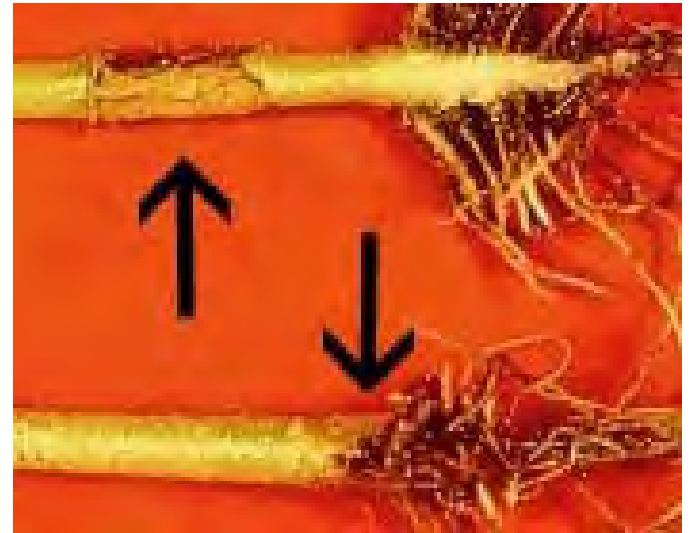
Thrips, *Thrips palmi*

- The symptoms of a Thrips attack are
 - browning of the undersides of the lower leaves. In severe cases, the entire leaf dries.
 - Similar damage is seen along the mid-vein on the upper leaf surface.
 - Thrips also scar the fruits.
- Resistant varieties, pesticide applications



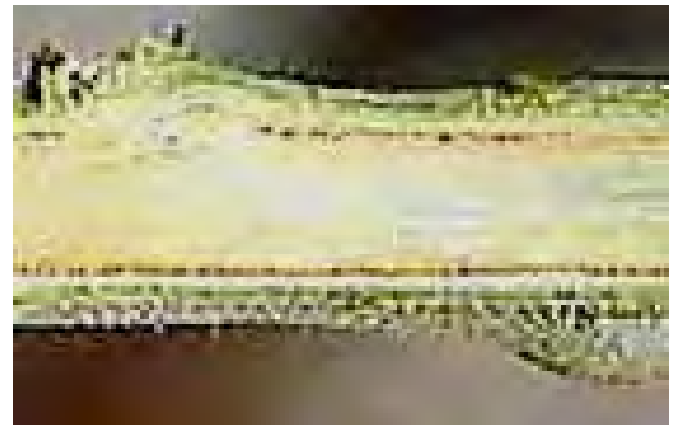
Damping Off, Pythium, Phytophthora sp and Rhizotocnia sp

- Several born fungi
- The fungi attack germinating seeds, creating lesions on the stems which later cause the seedlings to collapse.
- Control:
 - Seed treatment fungicide
 - Planting depth, shallow
 - Control Soil moisture



Verticillium Wilt, *Verticillium albo-atrum*

- This disease causes stunting and wilting of plants.
- Leaves turn yellow along the margins, later turning brown and wilting.
- A lengthwise cut of the infected stem shows dark-brown discoloration in the vascular tissue
- Crop rotation with non-solanaceous crops, using resistant varieties, and soil sterilization are the recommended practices for controlling verticillium wilt.





Harvesting and Handling

- Harvesting
 - Fruits are harvested immature before seeds begin to enlarge and harden
 - Fruits should be picked when the fruits are *firm* and the *color is bright and shiny*
 - Eggplant fruit become pithy and bitter as they reach an over-mature condition



Harvesting and Handling

- Harvesting

- A knife or pruning shears should be used instead of breaking or twisting the stems. The large (usually green) calyx and a piece of stem should be left attached to the fruit.

- Grading

- eggplant fruits are sorted by size (small, medium, and large) and culls are removed.

Harvesting and Handling

- Marketing
 - Eggplant is often packed in the field for marketing



Eggplant Harvesting

