Okra Production in ER

IDEA-NEW

Okra Production in ER

- Okra or “Lady finger” is one of the most important warm season crops growth in ER
- Okra is:
  - Easy to grow,
  - Has a high nutrition content
  - It’s adaptable to a wide range of environment
- Main production areas:
  - Kunar: Assadabad, Khas Kunar
  - Nangarhar: Batikot, Ghani khill, Kuz Kunar, Kama

Cultivars

- Most of them are OP and were introduced from India and Pakistan
- Okra needs around 60 days for maturity
  - OP:
    - Green cultivars
      - Pusa sawani, Sabz pari, Tarnab green, Clemson spineless
    - Red color
      - Burgundy
  - Hybrid:
    - Annie Oklay (green)

Okra Cultivars

Climate

- Okra requires a long warm season for high yields
  - However can be grow in areas with average temperatures 18 – 35 ºC
  - Optimal temperatures for seed germination: 25 – 30 ºC
  - Flowers are dropped at day-time temperatures above 42 ºC

Soils

- Okra can grow in wide range of soils, but well drained
  - Best soils for Oka production are Sandy loams,
  - Emergence is poor in heavy clay soils
- Soil pH 6 – 7.5

Fertilization

- Use FYM and chemical fertilizers
  - Okra cycle is long – until 120 days
- Okra requires 10 Kg N, 7.5 Kg of P_2O_5, and 5 Kg of K_2O for each ton of production
- Before sowing
  - 5 – 6 MT FYM should be applied and mixed well with soil
  - Final bed preparation, applied one bag of DAP
- After transplanting
  - Six week later applied 1bag Urea

Seeding Rate

- Depend on the season, method of planting and variety
- Summer seed rate
  - 1.6 – 2 kg/jerib
- For a better germination, soak the seed for 24 hours before planting
- Okra seed will not germinate if soil temperature is below 16ºC

Planting

- Okra can be direct seeded or transplanted
  - Either case, plant the crop on raised bed
    - 1.1 m bed-center to bed-center
- Direct seeded
  - 2 – 3 seeds/station
  - 1.5 – 2 cm deep
  - Two rows per bed, station 40 cm apart, alternate
- Transplanted
  - 2 rows per bed, 40 cm apart
  - 40 cm between plants, alternate
  - 9,000 plants/jerib

Okra Seedlings

Okra on Raised Beds

Irrigation

- A light irrigation is recommended soon after sowing for a good germination
  - Heavy early irrigation cool the soil and slow plant growth
- Irrigation frequency varies with season and soil type
  - Regular watering, weekly interval
  - During hot weather irrigate twice a week

Weed Control

- For the spring-summer crop, hand weeded the crop 2 – 3 times
- Okra production at large scale,
  - herbicides can be used,
  - weeding the field 60 days after planting

Crop Protection

- Young Okra plants are more susceptible to pest damage than older established plants
- Pod feeding insects are greater problems than foliage feeders
- Check blossoms and pods for insect damage regularly once they begin to set

Aphids, *Myzus persicae, Macrosiphum euphorbiae, Uroleucon pseudambrosiae*,

- Aphids suck out water and nutrient from plants with their stylets (needle-like mouth part)
  - Heavy aphids attack can kill young plants
  - Aphids deposit large amount of honeydew in plant surface which encourages mold growth
- Control
  - Soopy solution
  - Malathion,
  - Azadiracthin, derived from Neem

Aphids, *Myzus persicae, Macrosiphum euphorbiae, Uroleucon pseudambrosiae*,

Shoot and Fruit borer, *Earias vittela* and *E. insulana*

- Eggs are laid on leaves, buds or tender fruits. Caterpillar bore the top shoots before fruit formation
- Control: Remove and buried infested fruits. Endosulfan, Lorsban, Carbaryl

Leaf Hopper, *Amrasca biguttula biguttula*

- Attack the crop at early stage of growth
- Leaf hopper, nymph and adult are found under side of the leaves sucking sap from leaves
- Control: Soil application of Carbofuradan at the time of sowing

Fusarium Wilt, *Fusarium oxysporum*

- Soil borne disease. Affected plants show wilting symptoms, leaves turn yellow, eventually the plant die
- *The fungus invades the root system and water movement is blocked*
- Control: Long crop rotation, once the pathogen is in the soil, it builds up over time until Okra can not be cultivated in the field

Powdery Mildew, *Erysiphe cichoracearum*

- Disease found in older leaves and plants stem
- Yields are reduced due to premature leaf loss
- Control, irrigate and fertilize plants properly, healthy plants are less susceptible to the attack. Wettable Sulfur (0.2%)

Yellow Vein Mosaic Virus (*YVMV*)

- It's the most important and destructive viral disease in Okra
  - Plants are more susceptible 35 – 50 days after sowing
  - The disease is transmitted by the White fly *Bemisia tabaci*
  - Infected leaves become totally light yellow and there is not trace of green
  - Fruits of infected plants exhibit a pale yellow color, are deformed, small and tough in texture

Yellow Vein Mosaic Virus (*YVMV*)

Control: Remove and destroy virus affected plants, Plant disease resistant varieties, control white fly population

Harvesting and Post Harvest Handling

- The first fruits are ready for harvest 45 days after sowing.
  - The harvest period lasts for about 30-40 days.
  - The best time to harvest the young fruits is 6-7 days after flowering
  - Tender, young pods free from fiber should be harvested regularly every other day.

Harvesting and Post Harvest Handling

- Harvest in the morning.
- The fruits are removed from the plants either by breaking or cutting them from the stalk.
- After harvesting, the fruits should be kept in shade and care should be taken to avoid bruises and injury. Okra is graded according to size, maturity and general appearance.
- Fruits should be sold as soon as possible, small and tender fruits are sold at premium price

Tashakor!!!