Manganese Toxicity

This disorder occurs in acid soils (pH less than 5.8). Maintain soil pH at 6.5 to avoid toxicity.

Harvesting and Storage

Muskmelon hybrids should be harvested no sooner than half-slip and preferably at full-slip for optimum fruit quality. High-quality melons depend on maintaining the vines and leaves until melons are mature. Harvest daily or twice daily in hot weather. Hydrocool fruit immediately following harvest, and store at 34° F.

OKRA

Okra is a tropical annual with a wide range of adaptation. It is, however, very sensitive to frost and cold temperatures and should not be planted until soil has warmed in the spring.

Varieties

Varieties[1]	
Annie Oakley II*	These varieties are recommended
Clemson Spineless	in areas of DE, MD, NJ, PA, VA, WV
Cajun Delight*	where climatic conditions are
North and South*	favorable for okra production.

[1]Varieties listed by maturity, earliest first.

* Indicates hybrid varieties.

Recommended Nutrients Based on Soil Tests

Before using the table below, refer to important notes in Plant Nutrient Recommendations in Section B, Soil And Nutrient Information. These notes provide additional suggestions to adjust rate, timing and placement of nutrients depending on soil type cation exchange capacity and existing fertility levels.

	Nitrogen (N) Pounds per Acre	Soil Phosphorus Level			Soil Potassium Level		
Okra		Low	Med	Opt.	Low	Med	Opt.
		Pounds $P_2 0_5$ per Acre			Pounds $K_2 0$ per Acre		
	125-150[1]	250[1]	150[1]	100[1]	250[1]	150[1]	100[1]
	50-100[2]	250[2]	150[2]	100[2]	250[2]	150[2]	100[2]
	25-50[3]	0	0	0	0	0	0
	25-50[4]	0	0	0	0	0	0

[1] Total amount nutrient recommended

[2] Broadcast and disk-in

[3] Sidedress 3-4 weeks after planting

[4] Sidedress 6-8 weeks after planting

Apply 1 - 2 pounds of boron (B) per acre with broadcast fertilizer. See Table B-10 for more specific boron recommendations.

Note: If crop is to be mulched with plastic but not drip/trickle fertilized, broadcast 225 pounds of nitrogen (N) per acre with recommended $P_2 0_5$ and $K_2 0$ and disk-in or incorporate prior to laying mulch.

Drip/Trickle Fertilization: see Chapter C under drip/trickle fertigation section.

Seed Treatment

Use thiram 75WP at 3 to 4 ounces per 100 pounds (2/3 teaspoon per pound) *plus* Apron XL LS (0.32 to 0.64 fluid ounce) per 100 pounds of seed for improved germination and stand.

Seeding and Spacing

Usual field seeding date is May 20 to June 1. Generally only one planting is made. For Pennsylvania, seed in the greenhouse in cells on May 5 and transplant to the field on June 5 to 10 through black plastic mulch on raised beds with drip irrigation. Okra also responds to the application of trellises and row covers or high tunnels.

For dwarf varieties, space the rows about 3½ feet apart; for medium and tall varieties, 4 to 4½ feet apart. Drill seeds ¼ to ½ inch deep, 3 or 4 per foot of row (5 to 7 pounds per acre). Thin the plants when they are 5 inches high. Dwarf varieties should be about 12 to 15 inches apart in the row; plants of tall varieties should be 18 to 24 inches apart.

Harvesting

An okra pod usually reaches harvesting maturity 4 to 6 days after the flower opens. The pods are 3 to 3½ inches long at this stage and are tender and free of fiber. Pick pods at least every second day. Large and undesirable pods should be removed to permit the plant to continue to bear over a long period. Okra should be kept at temperatures between 50° to 55°F (10° to 12.8°C) and relative humidity of 85 to 90 percent. Okra pods are subject to chilling injury below 50°F (10°C).

Weed Control

Identify the weeds in each field and select recommended herbicides that control those weeds. See Tables E-2 and E-3.

Match preplant incorporated and preemergence herbicide rates to soil type and percent organic matter in each field.

There has been no research on this crop in this area. The following are suggestions taken from company labels:

Preplant Incorporated

Trifluralin--0.5-1 lb/A. Apply 1 to 2 pints per acre Treflan 4E. Incorporate 2 to 3 inches deep within 8 hours of application by disking twice with blades set 4 to 6 inches deep.

Postharvest

Paraquat--0.6 lb/A. **A Special Local-Needs 24(c) label has been approved for the use of Gramoxone Inteon 2SC for postharvest desiccation of the crop in Delaware, New Jersey and Virginia.** Apply 2.4 pints per acre Gramoxone Inteon 2SC as a broadcast spray after the last harvest. Add nonionic surfactant according to the labeled instructions. Use to prepare plastic mulch for replanting, or to aid in the removal of the mulch. See the label for additional information and warnings.

Insect Control

NOTE: Copies of specific insecticide product labels can be downloaded by visiting the websites www.CDMS.org or www.Greenbook.org. Also, specific labels can be obtained via web search engines.

Aphids

imidacloprid (soil-Admire 2F, Admire PRO; foliar-Nuprid 1.6F, Provado 1.6F or OLF)

malathion (Malathion 57EC or OLF)

Corn Earworm
Bacillus thuringiensis (Biobit, Dipel, Dipel 2X, Javelin, XenTari or OLF)
flubendiamide (Synapse WG)
indoxacarb (Avaunt 30WDG)
spinetoram (Radiant 2SC)
spinosad (Entrust 80W, SpinTor 2SC or OLF)

Japanese Beetle
malathion (Malathion 57EC or OLF)

Stink bugs
carbaryl (Sevin 80S or OLF)

Whiteflies
imidacloprid (soil-Admire 2F, Admire PRO; foliar-Nuprid 1.6F, Provado 1.6F or OLF)
pyriproxyfen (Knack)

Pesticide	Use Category[1]	Hours to Reentry	Days to Harvest
INSECTICIDE			
Bacillus thuringiensis	G	4	0
carbaryl	G	12	3
flubendiamide	G	12	1
imidacloprid (soil/foliar)	G	12	21/5
indoxacarb	G	12	3
malathion	G	12	1
pyriproxyfen	G	12	14
spinetoram	G	4	1
spinosad	G	4	1
FUNGICIDE (FRAC code)			
Quadris (Group 11)	G	4	0

See Table D-6.

[1] G = general

Nematode Control
Nematode control is very important in the production of this commodity. See Chapter E, "Nematodes" section of "Soil Pests--Their Detection and Control". Use fumigants listed in the "Soil Fumigation" section.

Disease Control
Damping-Off
Use seed treated with thiram *plus* Apron XL LS (0.32 to 0.64 fl oz) per 100 pounds of seed.

Seedling Root Rot and Basal Stem Rot (Rhizoctonia)
Quadris--0.40-0.80 fl oz 2.08SC/1000 row ft

Fusarium and Verticillium Wilts
Avoid planting in fields where either disease is present. Rotate with non-solanaceous crops. Disease control rates of soil fumigants will aid in control of Verticillium wilt.

Fruit Rot
Choanephora is a soil-borne fungal disease which attacks senescent blossoms and fruit. There are no fungicides labeled for Choanephora control. Improving air circulation is the only effective means of reducing the chances for Choanephora development. In extreme cases, some growers remove the lower juvenile leaves to improve air circulation.