

This is a section from the

2016

Mid-Atlantic

Commercial Vegetable Production Recommendations

The manual, which is published annually, is NOT for home gardener use.

The full manual, containing recommendations specific to New Jersey, can be found on the Rutgers NJAES website in the Publications section
njaes.rutgers.edu

The label is a legally-binding contract between the user and the manufacturer.

The user must follow all rates and restrictions as per label directions.

The use of any pesticide inconsistent with the label directions is a violation of Federal law.

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.

Varieties¹

Annie Oakley II*
 Clemson Spineless 80
 Cajun Delight*
 Jambolaya*
 North and South*
 Zarah*

¹Varieties listed alphabetically; *Indicates hybrid varieties.

Recommended Nutrients Based on Soil Tests

Before using the table below, refer to important notes in the Soil and Nutrient Management chapter in Section B and your soil test report. These notes and soil test reports provide additional suggestions to adjust rate, timing, and placement of nutrients. Your state's soil test report recommendations and/or your farm's nutrient management plan supercede recommendations found below.

Okra	Pounds N per Acre	Soil Phosphorus Level				Soil Potassium Level				Nutrient Timing and Method
		Low	Med	High		Low	Med	High		
				(Opt.)	High			(Opt.)	High	
		Pounds P ₂ O ₅ per Acre				Pounds K ₂ O per Acre				
125-150 ¹	250	150	100	0	250	150	100	0	Total nutrient recommended.	
50-100	250	150	100	0	250	150	100	0	Broadcast and disk-in.	
25-50	0	0	0	0	0	0	0	0	Sidedress 3-4 weeks after planting.	
25-50	0	0	0	0	0	0	0	0	Sidedress 6-8 weeks after planting.	

Apply 1.0 to 2.0 pounds of boron (B) per acre with broadcast fertilizer. See Table B-9 for more specific boron recommendations.

¹If crop is to be mulched with plastic but not drip/trickle fertilized, broadcast 225 pounds of nitrogen (N) per acre with recommended phosphorus and potassium and disk-in prior to laying mulch. For drip/trickle fertilization, see Chapter C under drip/trickle fertigation section.

Seed Treatment

See the Disease section for seed treatment to prevent disease.

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 row covers or high tunnels.

For dwarf varieties, space the rows about 3-3½ 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.

Harvest and Post Harvest Considerations

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 excessive fiber. Pick pods at 2-day intervals. Pods can be snapped off or cut with clippers at the pedicel. Gloves should be worn during harvest to avoid skin reactions due to the fine spines on the fruit. Large and undesirable pods should be removed to permit the plant to continue to bear over a longer period. Harvested okra should be kept at temperatures between 50° to 55°F (10° to

12.8°C) and relative humidity of 85 to 90%. 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-3 and E-4.

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: Determine the preharvest interval (PHI) for the crop. See Table E-4 and consult the herbicide label.

Find the herbicides you plan to use in the Herbicide Resistance Action Committee's (HRAC) **Herbicide Site of Action Table E-8** and follow the recommended good management practices to minimize the risk of herbicide resistance development by weeds in your fields.

Preplant Incorporated

Trifluralin--0.5 to 1 lb/A. Apply 1.0 to 2.0 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.

Shielded & Directed Between Rows of Plastic Mulch

Mesotrione--0.094 to 0.188 lb/A. Apply 3.0 to 6.0 fluid

ounces of Callisto 4SC per acre. Primarily controls common lambsquarters and many other annual broadleaf weeds, including triazine resistant biotypes, but Callisto is weak on ragweed and morninglory species. Apply Treflan 4E between the rows of mulch to control annual grasses. Crop injury may occur if an organophosphate or carbamate insecticide is applied within 7 days of Callisto. **See the Callisto label for additional use precautions.**

Postemergence - Directed

Mesotrione--0.094 lb/A. Apply 3.0 fluid ounces of Callisto 4SC per acre. Primarily controls common lambsquarters and many other annual broadleaf weeds, including triazine resistant biotypes, but Callisto is weak on ragweed and morninglory species. Preplant incorporate Treflan 4E to control annual grasses. Temporary injury, appearing as whitening of the foliage after application, may occur. Varieties may differ in sensitivity to mesotrione. Crop injury may occur if an organophosphate or carbamate insecticide is applied within 7 days of Callisto. **See the Callisto label for additional use precautions.**

Postharvest

Paraquat--0.6 lb/A. **A Special Local-Needs 24(c) label has been approved for the use of Gramoxone SL 2.0 or OLF for postharvest desiccation of the crop in Delaware, New Jersey and Virginia.** Apply 2.4 pints per acre Gramoxone SL 2.0 or OLF 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

THE LABEL IS THE LAW. PLEASE REFER TO THE LABEL FOR UP TO DATE RATES AND RESTRICTIONS

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

Aphids

Apply one of the following formulations:

flonicamid--2.8 to 4.28 fl oz/A Beleaf 50SG
flupyradifuzone--7.0 to 12.0 fl. oz/A Sivanto 200SL
imidacloprid--**soil** 7.0 to 14.0 fl oz/A Admire Pro (or OLF),
foliar--1.3 to 2.2 fl oz/A Admire PRO (or OLF)
malathion--1.5 pts/A Malathion 57EC (or OLF)
spirotetramat--4.0 to 5.0 fl oz/A Movento

Corn Earworm

Apply one of the following formulations:

Bacillus thuringiensis--0.5 to 2.0 lb/A Dipel DF (or OLF)
OMRI-listed
bifenthrin--2.1 to 6.4 fl oz/A Bifenture 2EC (Sniper, or OLF)
chlorantraniliprole--(**soil/drip/foliar**) 3.5 to 5.0 fl oz/A Coragen 1.67SC
cyantraniliprole--**soil** 5.0 to 10.0 fl. oz/A Verimark; **foliar** 7.0 to 13.5 fl. oz/A Exirel
flubendiamide--1.5 fl oz/A Belt SC (or other labeled mixtures containing flubendiamide like Vetica)
indoxacarb--3.5 oz/A Avaunt 30WDG
novaluron--9.0 to 12.0 fl oz/A Rimon 0.83Ec
spinetoram--5.0 to 10.0 fl oz/A Radiant SC

spinosad--3.0 to 6.0 fl oz/A Entrust SC **OMRI-listed**
zeta-cypermethrin--3.2 to 4.00 fl oz/A Mustang Maxx (or OLF)
zeta-cypermethrin+bifenthrin--4.0 to 10.3 fl oz/A Hero EC

Japanese Beetle

Apply one of the following formulations:

bifenthrin--2.1 to 6.4 fl oz/A Bifenture 2EC (Sniper, or OLF)
malathion--1.5 pts/A Malathion 57EC (or OLF)

Stink bugs

Apply one of the following formulations:

bifenthrin--6.4 fl oz/A Bifenture EC (Sniper, or OLF)
carbaryl--1.5 qts/A Sevin XLR Plus (or OLF)
zeta-cypermethrin--4.0 fl oz/A Mustang Maxx (or OLF)
zeta-cypermethrin+bifenthrin--10.3 fl oz/A Hero EC

Whiteflies

Apply one of the following formulations:

buprofezin--9.0 to 13.6 fl oz/A Courier 2SC
fenpyroximate--2.0 pt/A Portal; 2.0 pts/A Portal XLO
flupyradifuzone--10.5 to 14.0 fl. oz/A Sivanto 200SL
imidacloprid--**soil** 7.0 to 14.0 fl oz/A Admire Pro (or OLF),
foliar 1.3 to 2.2 fl oz/A Admire PRO (or OLF)
pyriproxyfen--8.0 to 10.0 fl oz/A Knack
spirotetramat--4.0 to 5.0 fl oz/A Movento

Pesticide	Use Category ¹	Hours to Reentry	Days to Harvest
INSECTICIDE			
<i>Bacillus thuringiensis</i>	G	4	0
bifenthrin	R	12	7
buprofezin	G	12	1
carbaryl	G	12	3
chlorantraniliprole	G	4	1
cyantraniliprole (soil/foliar)	G	4/12	1
fenpyroximate	G	12	1
flubendiamide	G	12	1
flubendiamide + buprofezin	G	12	1
flupyradifuzone	G	4	1
imidacloprid (soil/foliar)	G	12	21/0
indoxacarb	G	12	3
malathion	G	12	1
novaluron	G	12	1
pyriproxyfen	G	12	1
spinetoram	G	4	1
spinosad	G	4	1
spirotetramat	G	24	1
zeta-cypermethrin	R	12	1
zeta-cypermethrin+bifenthrin	R	12	7
FUNGICIDE (FRAC code)			
azoxystrobin (Group 11)	G	4	0
chlorothalonil (Group M5)	G	12	3
copper, fixed (Group M1)	G	see label	0
Folicur (Group 3)	G	12	7

See Table D-6.

¹ G = general

Nematode Control

Okra roots are very susceptible to the damage caused by root knot and sting nematodes. See Chapter E, "Nematodes" section of "Soil Pests--Their Detection and Control". Use fumigants listed in the "Soil Fumigation" section.

Nimitz 4EC--3.5 to 5.0 pints/A. Incorporate or drip-apply 7 days before planting.

Disease Control

Seed Treatment

Use thiram 480DP at 3.0 to 4.0 oz/100 lb. of seed (2/3 tsp/lb) *plus* Apron XL LS (0.32 to 0.64 fl oz /100 lb of seed) for improved germination and stand.

Damping-Off

Use seed treated with thiram 480DP at 3.0 to 4.0 oz/100 lb of seed (2/3 tsp/lb) *plus* Apron XL LS (0.32 to 0.64 fl oz/ 100 lb of seed).

Seedling Root Rot and Basal Stem Rot (*Rhizoctonia*)

Apply azoxystrobin--0.40 to 0.80 fl oz 2.08F/1000 row ft or OLF

Leaf Spots

Apply and rotate one of the following:

azoxystrobin--6.0 to 15.5 fl oz 2.08F/A or OLF

chlorothalonil--1.5 pt 6F/A or OLF

Folicur--4.0 to 6.0 fl oz 3.6F/A or OLF

fixed coppers--0.75 to 1.75 lb/A (check label for specific rate ranges)

Fusarium and Verticillium Wilts

Avoid planting in fields where either disease is present. Rotate with non-solanaceous crops.

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.

ONIONS

Recommended Bulbing Onion Varieties

Variety	Hybrid	Type ¹	Days to Maturity ²	Description ³	Color	Storage	Method ⁴	Size
Ebenezer	No	Long Day	120	Storage LD	Yellow	Long	Sets	Med-Large
Vision	Yes	Long Day	125	Storage LDSP	Yellow	Long	DS, TP	Large
Sedona	Yes	Long Day	120	Storage LDSP	Yellow	Long	DS, TP	Large
Southport Red Globe	No	Long Day	120	Storage LD	Red	Long	DS, TP	Large
Bradley	Yes	Long Day	118	Storage LDSP	Yellow	Long	DS, TP	Large
Delgado	Yes	Long Day	118	Storage LDSP	Yellow	Long	DS, TP	Med-Large
Red Wing	Yes	Long Day	118	Storage LD	Red	Long	DS, TP	Large
Talon	Yes	Long Day	110	Storage LDSP	Yellow	Long	DS, TP	Large
Fortress	Yes	Long Day	110	Storage LDN	Yellow	Long	DS, TP	Medium
Red Sky	Yes	Long Day	110	Storage LDSP	Red	Long	DS, TP	Med-Large
Montero	Yes	Long Day	110	Sweet Spanish	Yellow	Medium	DS, TP	Large
Braddock	Yes	Long Day	107	Storage LDN	Yellow	Long	DS, TP	Large
Safrane	Yes	Long Day	106	Storage LDN	Yellow	Long	DS, TP	Medium
Prince	Yes	Long Day	105	Storage LDN	Yellow	Long	DS, TP	Large
Tequila	Yes	Long Day	120	Spanish	Yellow	Medium	DS, TP	Very Large
Mesquite	Yes	Long Day	120	Spanish	Yellow	Medium	DS, TP	Very Large
Dulce Reina	Yes	Long Day	120	Sweet Spanish	Yellow	Medium	TP	Large
Scout	Yes	Long Day	118	Sweet Spanish	Yellow	Medium	TP	Very Large
SV4058NV	Yes	Long Day	115	Spanish	White	Medium	TP	Large
Great Western	Yes	Interm. Day	110	Sweet Spanish	Yellow	Medium	TP	Large
Spanish Medallion	Yes	Interm. Day	110	Sweet Spanish	Yellow	Medium	TP	Very Large

(table continued next page)