RUTGERS UNIVERSITY
Cooperative Extension
New Jersey Agricultural Experiment Station

This is a section from the

2026/2027
Mid-Atlantic Commercial Vegetable Production Recommendations

The recommendations are **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 at: *https://njaes.rutgers.edu/pubs/publication.php?pid=e001*.

This manual will be revised biennially. **In January 2027, a Critical Update** with important updates to the 2026/2027 manual will be communicated through local Extension Agents and Vegetable Specialists.

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.

Cooperating Agencies: Rutgers, The State University of New Jersey, U.S. Department of Agriculture, and County Boards of Commissioners. Rutgers Cooperative Extension, a unit of the Rutgers New Jersey Agricultural Experiment Station, is an equal opportunity program provider and employer.

2026/2027
Mid-Atlantic Commercial Vegetable Production Recommendations

If you are having a medical emergency after using pesticides, always call 911 immediately.

POISON Help®

1-800-222-1222

In Case of an Accident

- Remove the person from exposure
- Get away from the treated or contaminated area immediately
- Remove contaminated clothing
- Wash with soap and clean water
- Call a physician and/or the National Poison Control Center (1-800-222-1222).
  Your call will be routed to your State Poison Control Center.
- Have the pesticide label with you!
- Be prepared to give the EPA registration number to the responding center/agency

Celery

Recommended Varieties Check with your seed supplier or other growers for recommendations on locally adapted varieties. Any new variety should be tested on a small scale before planting in a large area.

Recommended Nutrients Based on Soil Tests

In addition to using the table below, check the suggestions on rate, timing, and placement of nutrients in your soil test report and Chapter B Soil and Nutrient Management. Your state's soil test report recommendations and/or your farm's nutrient management plan supersede the recommendations found below.

		Soil Phosphorus Level				Soil Potassium Level				
		Low	Med	High (Opt)	Very High	Low	Med	High (Opt)	Very High	
Celery[1]	**N (lb/A)**	**P_2O_5 (lb/A)**				**K_2O (lb/A)**				**Nutrient Timing and Method**
	150-175	250	150	100	0	250	150	100	0	Total nutrient recommended
	50-75	250	150	100	0	250	150	100	0	Broadcast and disk-in
	25-50	0	0	0	0	0	0	0	0	Sidedress 2-3 weeks after planting
	25-50	0	0	0	0	0	0	0	0	Sidedress 6-8 weeks after planting

[1]Apply 1.5-3 lb/A of boron (B) with broadcast fertilizer; see also Table B-7. in Chapter B Soil and Nutrient Management.
See also **Brown Check** under Celery Disorders below.

Seed Treatment

Freshly harvested seed may exhibit dormancy leading to poor germination. Seeds should either be stored below 40°F (4°C) for 6 months or longer or treated with phytohormones. For seed treatments, see Disease Control below.

Transplant Production

Transplants grown locally in greenhouses are commonly used. Sow seed 10-12 weeks before field planting. About 35,000 plants can be produced from 2½ oz seed. Maintain the greenhouse at 70-75°F (21-24°C) until emergence, and after that at 65-70°F (18-21°C) for steady growth. Maintain night temperatures above 55°F (13°C) to avoid the production of "seeders". Plants for an early crop should be set in the field when there is no more risk of frost or a cold period. If plants become too tall or spindly before field setting, they can be clipped back to a height of 5-6 inches. Plants can be hardened by withholding water 7-10 days before field planting. Never harden celery plants by lowering temperatures.

Planting and Spacing

Celery is a cool-season crop that grows most rapidly and develops the best yield and quality at moderately cool temperatures (55-75°F, 13-24°C), good soil moisture, and relatively high humidity. Satisfactory crops can be produced on fertile, medium-textured mineral soils with irrigation. The usual planting period is May 1 to June 30 with rows 16-32 inches apart and plants 8 inches apart in row. Set 30,000-45,000 plants/A.

Celery will withstand light freezes but both young and old plants are damaged by moderate freezes. After exposure to temperatures below 55°F (13°C) for a number of days, celery (a biennial) initiates seed stalks (bolts). Under satisfactory growing conditions, celery reaches usable size 85-100 days from transplanting. High plant populations can promote blanching. For non self-blanching cultivars, blanching can be accomplished by trenching or other mechanical means. Special blanching practices can improve color and eating quality.

Since celery is expensive to grow, experience in both production and marketing is desirable before large-scale operations are attempted.

Harvest and Post-Harvest Considerations

Harvest when stalks are of sufficient size but before any pithiness has developed in the petioles. Harvested celery should be cooled quickly to temperatures below 45°F (7°C) by hydrocooling, vacuum-cooling, icing, or other means of refrigeration. Stalks can be held 5-7 weeks if storage is near 32°F (0°C) with 98% relative humidity.

Celery Disorders

Blackheart: Internal leaves develop a brown discoloration which eventually becomes deep black. The cause is similar to tip-burn of lettuce or blossom-end rot of tomato. The development of blackheart is promoted by environmental conditions that favor rapid growth, such as heavy rain or irrigation before drought, or high nitrogen,

potassium, and sodium levels. Water stress may result in a calcium deficiency disorder causing cell death. The risk of blackheart is reduced by avoiding wide fluctuations in moisture and nutrients and ensuring steady plant growth. Drip irrigation, which provides more even moisture levels can help reduce the risk. Drench applications of soluble calcium can lessen or prevent the development of blackheart.

Brown Check: A physiological disorder called "brown check," is characterized by russeting and cracking on the inner side of the petiole. Brown check may be caused by high levels of soil potassium and/or high potassium fertilization rates, although boron nutrition may also be involved.

Weed Control

THE LABEL IS THE LAW-see the Pesticide Use Disclaimer on the first page of Chapter F.

Recommended Herbicides

1. Identify the weeds in each field and select recommended herbicides. More information is available in the "Herbicide Effectiveness on Common Weeds in Vegetables" (Table E-3) in Chapter E Pest Management.
2. Minimize herbicide resistance development. Identify the herbicide mode of action group number and follow recommended good management practices; **bolded group numbers in tables below are herbicides at higher risk for selecting resistant weed populations.** Include non-chemical weed control whenever possible.

1. Soil-Applied (Preplant Incorporated or Preemergence)

Group	Product Name (*=Restricted Use)	Product Rate	Active Ingredient	Active Ingredient Rate	PHI (d)	REI (h)
5	Caparol 4L	2.4 to 3.3 pt/A	**prometryn**	1.2 to 1.6 lb/A	--	12
-Apply after seeding, but before crop emergence. Use lower rate on lighter coarse-textured sandy soils and the higher rate on heavier fine-textured soils; **Do not** use on sand or loamy sand soils, or crop injury may occur. Follow with overhead irrigation if rainfall does not occur. -Primarily controls annual broadleaf weeds; annual grasses may only be suppressed. -Only 1 application per crop per year, **Do not** use both at planting and postemergence applications.						
8	Prefar 4E	5 to 6 qt/A	**bensulide**	5 to 6 lb/A	--	--
-Labeled for preplant incorporated or preemergence applications; **do not** incorporate more than 2 inches deep (1 inch is optimum). -Irrigate within 36 h of application with ½ inch of water; if not incorporated with irrigation or rainfall within 36 h, weed control maybe reduced. Provides control/suppression of some annual grass weeds and pigweeds, purslane, and lambsquarters. -**Do not** apply more than 6 lb ai/A per season.						

2. Postemergence

Group	Product Name (*=Restricted Use)	Product Rate	Active Ingredient	Active Ingredient Rate	PHI (d)	REI (h)
1	Shadow 3EC Select 2EC Select Max 0.97EC	4 to 5.33 fl oz/A 6 to 8 fl oz/A 9 to 16 fl oz/A	**clethodim**	0.07 to 0.125 lb/A	30	24
	Poast 1.5EC	1 to 1.5 pt/A	**sethoxydim**	0.2 to 0.3 lb/A	30	12
-**Select 2EC**: use crop oil concentrate (COC) at 1% v/v (1 gal/100 gal of spray solution). **Select Max 0.97EC**: use nonionic surfactant (NIS) at 0.25% v/v (1 qt/100 gal of spray solution). **Shadow 3EC**: use crop oil concentrate (COC) at 1% v/v (1 gal/100 gal of spray solution) for large or stressed grasses; use nonionic surfactant (NIS) at 0.25% v/v (1 qt/100 gal of spray solution) when grasses are small or when crop safety is a concern. **Poast 1.5EC**: use COC at 1.0% v/v. -**General comments:** -The use of COC may increase the risk of crop injury when hot or humid conditions prevail. To reduce the risk of crop injury, switch to NIS when grasses are small and soil moisture is adequate. -Use lower labeled rates for annual grass control and higher labeled rates for perennial grass control. For best results, treat annual grasses when they are actively growing and before tillers are present. -Yellow nutsedge, wild onion, wild garlic, and broadleaf weeds will **not** be controlled with these herbicides. -These herbicides control many annual and certain perennial grasses. Clethodim is best on annual bluegrass; while Poast is preferred for goosegrass control. -Repeated applications may be necessary to control certain perennial grasses. If repeat applications are necessary, allow 14 days between applications. -Rainfastness is 1 h. -**Do not** tank mix with or apply within 2 to 3 days of any other pesticide, unless labeled, as this may increase the risk of crop injury or reduce the control of grasses. -Rainfastness is 1 h. -**Do not** apply more than 8 fl oz/A of Select 2EC in a single application and **do not** exceed 2 pt/A for the season; **do not** apply more than 16 fl oz/A of Select Max in a single application and **do not** exceed 4 pt/A for the season. -**Do not** apply more than 5.33 fl oz/A of Shadow 3EC in a single application and **do not** exceed 21.33 fl oz/A for the season. -**Do not** apply more than 1.5 pt/A Poast in a single application and **do not** exceed 3 pt/A for the season.						

2. Postemergence - continued next page

***2. Postemergence** - continued*

5	Caparol 4L	1.6 to 2 pt/A	**prometryn**	0.8 to 1 lb/A	40	12
-Postemergence application can be made after the crop has 3 to 5 true leaves. Primarily controls annual broadleaf weed seedlings less than 2 inches tall. Annual grasses may only be suppressed. Use lower rate when the crop and weeds are small, or when cloudy, humid growing conditions prevail and the higher rate when the crop and weeds are larger or hot dry growing conditions prevail. -**Do not** use on sand or loamy sand soils, or crop injury may occur. -**Do not** tank mix Caparol with any other pesticide. -**Do not** use spray additives such as nonionic surfactant or oil concentrate. -**Do not** apply within 2 weeks of any herbicidal oil such as "carrot oil" or Stoddard Solvent. -Only 1 application per crop per year. -**Do not** use both at planting and postemergence applications.						
5	Lorox 50DF	1.5 to 3 lb/A	**linuron**	0.75 to 1.5 lb/A	45	24
-**For use on celery grown on muck soils only.** -Make a single application after celery transplants are established, but before celery is 8 inches tall Lorox will provide broadleaf weed control when applied to small weeds; will not control grass weeds. -**Do not** exceed 40 psi or apply when temperatures exceed 85°F. -**Do not** add surfactants, oil concentrate, or liquid fertilizer. -Use only the Lorox 50DF formulation of linuron. Only 1 application per season is allowed.						

3. Other Labeled Herbicides These products are labeled but limited local data are available; and/or are labeled but not recommended in our region due to potential crop injury concerns.

Group	Product Name (*=Restricted Use)	Active Ingredient
3	Treflan	**trifluralin**
14	Aim (hooded or directed application only)	**carfentrazone**
14	Tuscany SC, numerous	**flumioxazin**
15	Zidua SC	**pyroxasulfone**

Insect Control

THE LABEL IS THE LAW-see the Pesticide Use Disclaimer on the first page of Chapter F.

Recommended Insecticides

Note: For **premixes**, the group number (representing the mode of action) and active ingredient that contributes the most to control is generally listed first. In some cases, only one ingredient in a premix provides control.

Aphids

There are many species of aphids that feed on celery with green peach being the most common. Aphids feed with their needle-like mouths and suck the plant's juices. While feeding they also can inject toxins and viruses that affect the plant's growth. There are no thresholds for aphids. Application of systemic insecticides can be effective but will not stop the transmission of most viruses. Note: 12 species of aphids can be found on celery. Some pyrethroids are labeled for aphids but are not effective on all species. Consult your local Extension Service for assistance.

Apply one of the following formulations:

Group	Product Name (*=Restricted Use)	Product Rate	Active Ingredient(s)	PHI (d)	REI (h)	Bee TR
1B	Malathion 57 EC	1.5 pt/A	malathion	7	24	H
1B	Orthene 97 [1]	0.5 to 1 lb/A	acephate	21	24	H
4A	Actara 25WDG	1.5 to 3.0 oz/A	thiamethoxam	7	12	H
4A	Admire Pro	4.4 to 10.5 fl oz/A	imidacloprid - **soil**	45	12	H
4A	Assail 30SG	2.0 to 4.0 oz/A	acetamiprid	7	12	M
4A	Assail 30SC	1.7 to 3.4 fl oz/A	acetamiprid	7	12	M
4A	Belay 2.13SC	9.0 to 12.0 fl oz/A	clothianidin - **soil**	21	12	H
4A	Belay 2.13SC	3.0 to 4.0 fl oz/A	clothianidin - **foliar**	7	12	H
4D	Sivanto Prime	7 to 14 fl oz/A	flupyradifurone - **foliar**	1	4	M
9B	Fulfill 50WDG	2.75 oz/A	pymetrozine	7	12	L
9B	PQZ	2.4 to 3.2 fl oz/A	pyrifluquinazon	1	12	L
9D	Versys	1.5 fl oz/A	afidopyropen	0	12	L
21A	Torac	17.0 to 21.0 fl oz/A	tolfenpyrad	1	12	H
23	Boxadon 360	2.1 to 3.4 fl oz/A	spirotetramat	3	24	L
23	Movento	4 to 5 fl oz/A	spirotetramat	3	24	L
23 + 7C	Senstar	8.0 to 10.0 fl oz/A	spirotetramat + pyriproxyfen	14	24	L
28	Exirel	13.5 to 20.5 fl oz/A	cyantraniliprole - **foliar**	1	12	H
28	Verimark	6.75 to 13.5 fl oz/A	cyantraniliprole	1	4	H
28 + 6	Minecto Pro*	10 fl oz/A	cyantraniliprole + abamectin	7	12	H
29	Beleaf	2.0 to 2.8 oz/A	flonicamid	0	12	L

[1]Tops must be trimmed and not used for food or feed.

Beet Armyworms (BAW), Fall Armyworms (FAW)

Small beet armyworm larvae feed on celery leaves while larger larvae feed on petioles which can cause significant damage. In addition to the feeding damage larvae drop fecal matter throughout the plant, which makes the celery unmarketable. Moths lay masses of eggs and cover them with scales, giving them a cottony appearance. Check fields weekly for damage, look for egg masses on leaves, and consider using pheromone traps to monitor moths. **Note: pyrethroids are NOT recommended for BAW because of resistance.**

Apply one of the following formulations:						
Group	**Product Name (*=Restricted Use)**	**Product Rate**	**Active Ingredient(s)**	**PHI (d)**	**REI (h)**	**Bee TR**
1A	Lannate LV*	1.5 to 3.0 pt/A	methomyl	7	48	H
1A	Sevin XLR Plus	1.0 to 2.0 qt/A	carbaryl	14	12	H
1B	Orthene 97 [1]	1 lb/A	acephate	21	24	H
3A[2]	Pyrethroid insecticides registered for use on Celery: see table at the end of Insect Control.					
5	Entrust SC (OMRI)	4.0 to 8.0 fl oz/A	spinosad	1	4	H
5	Radiant SC	5.0 to 10.0 fl oz/A	spinetoram	1	4	H
6	Proclaim 5SG*	2.4 to 4.8 oz/A	emamectin benzoate	7	12	H
11A	DiPel DF (OMRI)	1.0 to 2.0 lb/A	*Bacillus thuringiensis kurstaki*	0	4	L
11A	XenTari (OMRI)	0.5 to 2.0 lb/A	*Bacillus thuringiensis aizawai*	0	4	L
22	Avaunt 30WDG, Avaunt eVo	3.5 to 6.0 oz/A	indoxacarb	3	12	H
28[2]	Coragen 1.67SC Coragen eVo	3.5 to 7.5 fl oz/A 1.2 to 2.5 fl oz/A	chlorantraniliprole	1	4	L
28[2]	Exirel	7.0 to 13.5 fl oz/A	cyantraniliprole - **foliar**	1	12	H
28[2]	Verimark	5 to 10 fl oz/A	cyantraniliprole	n/a	4	H
28[2] + 6	Minecto Pro*	5.5 to 10 fl oz/A	cyantraniliprole + abamectin	7	12	H

[1]Tops must be trimmed and not used for food or feed.
[2] Resistance concerns with beet armyworm.

Cabbage Loopers

The larvae cause similar damage as beet armyworms, but it is not as serious. Like the beet armyworm, fields should be scouted weekly for cabbage looper. Natural enemies, such as parasitoid wasps and flies, can help in control.

Apply one of the following formulations:						
Group	**Product Name (*=Restricted Use)**	**Product Rate**	**Active Ingredient(s)**	**PHI (d)**	**REI (h)**	**Bee TR**
1A	Lannate LV*	3 pt/A	methomyl	7	48	H
1B	Orthene 97[1]	1 lb/A	acephate[1]	21	24	H
3A	Pyrethroid insecticides registered for use on Celery: see table at the end of Insect Control.					
5	Entrust SC (OMRI)	3.0 to 6.0 fl oz/A	spinosad	1	4	H
5	Radiant SC	5.0 to 10.0 fl oz/A	spinetoram	1	4	H
6	Proclaim 5SG*	3.2 to 4.8 oz/A	emamectin benzoate	7	12	H
11A	DiPel DF, others (OMRI)	0.5 to 2.0 lb/A	*Bacillus thuringiensis kurstaki*	0	4	N
11A	XenTari (OMRI)	0.5 to 1.5 lb/A	*Bacillus thuringiensis aizawai*	0	4	N
22	Avaunt 30WDG, Avaunt eVo	2.5 to 6.0 oz/A	indoxacarb	3	12	H
28	Coragen 1.67SC Coragen eVo	3.5 to 7.5 fl oz/A 1.2 to 2.5 fl oz/A	chlorantraniliprole	1	4	L
28	Exirel	10 to 17 fl oz/A	cyantraniliprole	1	12	H
28	Verimark	6.75 to 13.5 fl oz/A	cyantraniliprole	n/a	4	H
28 + 6	Minecto Pro*	7.5 to 10 fl oz/A	cyantraniliprole + abamectin	7	12	H

[1]Tops must be trimmed and not used for food or feed.

Cutworms

See also section E 3.1. Soil Pests - Detection and Control.

Apply one of the following formulations:						
Group	**Product Name (*=Restricted Use)**	**Product Rate**	**Active Ingredient(s)**	**PHI (d)**	**REI (h)**	**Bee TR**
1A	Lannate LV*	1.5 pt/A	methomyl	7	48	H
3A	Pyrethroid insecticides registered for use on Celery: see table at the end of Insect Control.					
11A	DiPel DF (OMRI)	1.0 to 2.0 lb/A	*Bacillus thuringiensis kurstaki*	0	4	L
11A	XenTari (OMRI)	0.5 to 1.5 lb/A	*Bacillus thuringiensis aizawai*	0	4	L

Flea Beetles

Apply one of the following formulations:						
Group	**Product Name (*=Restricted Use)**	**Product Rate**	**Active Ingredient(s)**	**PHI (d)**	**REI (h)**	**Bee TR**
1A	Sevin XLR Plus	0.5 to 1 qt/A	carbaryl	14	12	H
3A	Pyrethroid insecticides registered for use on Celery: see table at the end of Insect Control.					
4A	Actara 25WDG	1.5 to 3.0 oz/A	thiamethoxam	7	12	H
4A	Belay 2.13SC	9.0 to 12.0 fl oz/A	clothianidin - **soil**	21	12	H
4A	Belay 2.13SC	3.0 to 4.0 fl oz/A	clothianidin - **foliar**	7	12	H
4A	Scorpion 35 SL	9 to 13 fl oz/A	dinetofuran - **soil**	21	12	H
4A	Scorpion 35 SL	2 to 5.25 fl oz/A	dinotefuran - **foliar**	7	12	H
4A	Venom 70SG	1.0 to 3.0 oz/A	dinotefuran - **foliar**	7	12	H
28	Exirel	13.5 to 20.5 fl oz/A	cyantraniliprole	1	12	H
28 + 6	Minecto Pro*	10 fl oz/A	cyantraniliprole + abamectin	7	12	H

[Insecticides with Suppression Only on the label: Torac]

Leafhoppers

Leafhoppers feed by sucking sap from leaf material, which causes a stippling mark on the leaf. If there is very heavy feeding this can cause leaves to turn brown and wither at the edges. Aster leafhoppers can vector Aster Yellows, a phytoplasmid disease that causes a general yellowing and stunting but seldom occurs in Mid-Atlantic celery crops.

Apply one of the following formulations:						
Group	**Product Name (*=Restricted Use)**	**Product Rate**	**Active Ingredient(s)**	**PHI (d)**	**REI (h)**	**Bee TR**
1A	Lannate LV*	1.5 to 3.0 pt/A	methomyl	7	48	H
1A	Sevin XLR Plus	0.5 to 1 qt/A	carbaryl	14	12	H
3A	Pyrethroid insecticides registered for use on Celery: see table at the end of Insect Control.					
4A	Actara 25WDG	1.5 to 3.0 oz/A	thiamethoxam	7	12	H
4A	Admire Pro	4.4 to 10.5 fl oz/A	imidacloprid - **soil**	45	12	H
4A	Belay 2.13SC	9.0 to 12.0 fl oz/A	clothianidin - **soil**	21	12	H
4A	Belay 2.13SC	3.0 to 4.0 fl oz/A	clothianidin - **foliar**	7	12	H
4A	Scorpion 35 SL	9 to 13 fl oz/A	dinetofuran - **soil**	21	12	H
4A	Scorpion 35 SL	2 to 5.25 fl oz/A	dinotefuran - **foliar**	7	12	H
4A	Venom 70SG	5 to 7.5 oz/A	dinotefuran - **soil**	21	12	H
4A	Venom 70SG	1.0 to 3.0 oz/A	dinotefuran - **foliar**	7	12	H
4D	Sivanto Prime	7 to 14 fl oz/A	flupyradifurone - **foliar**	1	4	M
16	Courier SC	9.0 to 13.6 fl oz/A	buprofezin	7	12	L

Leafminers

Adults are small black/gray flies with yellow markings. Females puncture leaves with their ovipositor and feed on plant sap and lay eggs within the leaf tissues. When eggs hatch larvae begin feeding between the upper and lower surface of the leaves, making meandering mines. These pests usually only cause minor damage in our area as long as broad-spectrum insecticides are not commonly used.

Apply one of the following formulations:						
Group	**Product Name (*=Restricted Use)**	**Product Rate**	**Active Ingredient(s)**	**PHI (d)**	**REI (h)**	**Bee TR**
4A	Scorpion 35 SL	9 to 13 fl oz/A	dinotefuran - **soil**	21	12	H
4A	Scorpion 35 SL	2 to 5.25 fl oz/A	dinotefuran - **foliar**	7	12	H
4A	Venom 70SG	5 to 7.5 oz/A	dinotefuran - **soil**	21	12	H
4A	Venom 70SG	1.0 to 3.0 oz/A	dinotefuran - **foliar**	7	12	H
5	Entrust SC (OMRI)	6.0 to 10.0 fl oz/A	spinosad	1	4	H
5	Radiant SC	6.0 to 10.0 fl oz/A	spinetoram	1	4	H
6	Agri-Mek SC*[1]	1.75 to 3.5 fl oz/A	abamectin	7	12	H
17	Trigard 75WSP	2.66 oz/A	cyromazine	7	12	H
28	Coragen 1.67SC Coragen eVo	5.0 to 7.5 fl oz/A 1.7 to 2.5 fl oz/A	chlorantraniliprole	1	4	L
28	Exirel	13.5 to 20.5 fl oz/A	cyantraniliprole	1	12	H
28	Verimark	6.75 to 13.5 fl oz/A	cyantraniliprole	1	4	H
28 + 6	Minecto Pro*[1]	5.5 to 10 fl oz/A	cyantraniliprole + abamectin	7	12	H

[1]Use of a non-sticker adjuvant is required. [Insecticides with Suppression Only on the label: Movento, Boxadon 360, Senstar]

Mites

Feeding damage is recognized by stippling (small scratches) marks on the foliage. Watch for mite activity in mid-late summer during hot dry periods.

Apply one of the following formulations:						
Group	**Product Name (*=Restricted Use)**	**Product Rate**	**Active Ingredient(s)**	**PHI (d)**	**REI (h)**	**Bee TR**
6	Agri-Mek SC*[1]	1.75 to 3.5 fl oz/A	abamectin	7	12	H
6 + 28	Minecto Pro*[1]	5.5 to 10 fl oz/A	abamectin + cyantraniliprole	7	12	H

[1]Use of a non-sticker adjuvant is required.

Tarnished Plant Bugs

This pest feeds using its needle-like mouth parts to suck fluids from the plant. Early season feeding can cause heart injury, while late-season feeding can produce large dark spots at the celery joint, resulting in 'black joint'. Look for bugs on leaves shortly after transplanting and when nearby alfalfa or grain is cut.

Apply one of the following formulations:						
Group	**Product Name (*=Restricted Use)**	**Product Rate**	**Active Ingredient(s)**	**PHI (d)**	**REI (h)**	**Bee TR**
1A	Sevin XLR Plus	1 to 2 qt/A	carbaryl	14	12	H
3A	Pyrethroid insecticides registered for use on Celery: see table at the end of Insect Control.					
21A	Torac	17.0 to 21.0 fl oz/A	tolfenpyrad	1	12	H
29	Beleaf 50SG	2.0 to 2.8 fl oz/A	flonicamid	0	12	L

Group 3A Pyrethroid Insecticides Registered for Use on Celery					
Apply one of the following formulations (check if the product label lists the insect you intend to spray)					
Product Name (*=Restricted Use)	**Product Rate**	**Active Ingredient(s) and Crop Restrictions**	**PHI (d)**	**REI (h)**	**Bee TR**
Baythroid XL*	0.8 to 3.2 fl oz/A	beta-cyfluthrin	0	12	H
Brigade 2EC*, Brigade eVo	2.1 to 6.4 fl oz/A	bifenthrin	7	12	H
Fastac CS*	2.2 to 3.8 fl oz/A	alpha-cypermethrin	1	12	H
Tombstone*	0.8 to 3.2 fl oz/A	cyfluthrin	0	12	H
Permethrin 3.2EC*	2.0 to 8.0 fl oz/A	permethrin	1	12	H

Disease Control

THE LABEL IS THE LAW-see the Pesticide Use Disclaimer on the first page of Chapter F. Recommended Fungicides

Seed Treatment

Use seed that is at least 2 years old. Soak the new seed in hot water at 118°F (48°C) for 30 minutes. Use seed treated with Maxim 4F (0.08 to 0.16 fl oz/100 lb) for *Rhizoctonia* and *Fusarium* management and Apron XL (0.085 to 0.64 fl oz/100 lb seed) for *Pythium* damping-off protection.

Damping-off caused by *Phytophthora*, *Pythium* and *Rhizoctonia*

Damping-off is favored by excessive soil moisture. Avoid over-saturation of seedbeds and do not transplant unhealthy plants in the field.

Code	**Product Name (*=Restricted Use)**	**Product Rate**	**Active Ingredient(s)**	**PHI (d)**	**REI (h)**	**Bee TR**
Apply one of the following in a 7-inch band:						
Phytophthora and Pythium root rot						
4	Ridomil Gold 4SL	1.0 to 2.0 pt/A	mefenoxam	0	48	N
4	Ultra Flourish 2E	2.0 to 4.0 pt/A	mefenoxam	7	48	N
Pythium and Rhizoctonia root rot						
4 + 11	Uniform 3.72SC	0.34 fl oz/1000 ft row in-furrow, see label	mefenoxam + azoxystrobin	AP	0	N

Bacterial and Fungal Diseases

Celery Leaf Curl/Anthracnose (*Colletotrichum* spp.)

This disease is characterized by curled, cupped, and twisted leaves, and dark, brownish necrotic lesions near the base of the petioles. It is suspected to be seedborne; planting high quality seed is recommended. Consider hot water seed treatment.

Code	Product Name (*=Restricted Use)	Product Rate	Active Ingredient(s)	PHI (d)	REI (h)	Bee TR
For resistance management, alternate one of the following protectant fungicides:						
M01	copper (OMRI)[1]	at labeled rates	copper	0	see label	N
M05	chlorothalonil 6F	2.0 pt/A	chlorothalonil	7	12	M
With *one* of the following FRAC code 3 or 11 fungicides also tank mixed with a protectant fungicide:						
3	Rhyme 2.08SC	5.0 to 7.0 fl oz/A	flutriafol	7	12	--
3 + 11	Topguard EQ	6.0 to 8.0 fl oz/A	flutriafol + azoxystrobin	7	12	--
7 + 11	Pristine 38WG	10.0 to15.0 oz/A	boscalid + pyraclostrobin	0	12	--
11	azoxystrobin 2.08F	9.0 to 15.5 fl oz/A	azoxystrobin	0	4	N
11	Cabrio 20EG	12.0 to 16.0 oz/A	pyraclostrobin	0	12	N

[1]There are several OMRI listed copper-based products; see labels for specifics. Copper applications may help suppress some fungal pathogens in organic production systems.

Crater and Petiole Rot or Basal Stalk Rot (*Rhizoctonia*)

Rotate out of celery for at least 3 years to ensure crop residue is thoroughly decomposed. Avoid planting transplants too deep and in poorly drained soils. In soils where problems occur, apply fungicides regularly.

Code	Product Name (*=Restricted Use)	Product Rate	Active Ingredient(s)	PHI (d)	REI (h)	Bee TR
Apply in a 7-in band in-furrow or shortly after emergence directed at the stem:						
11	azoxystrobin 2.08F	0.40 to 0.80 fl oz/1000 ft row	azoxystrobin	0	4	N
11+M05	Quadris Opti 5.5SC	2.4 to 3.7 pt/A	azoxystrobin + chlorothalonil	7	12	M
M05	chlorothalonil 6F	2.0 pt/A	chlorothalonil	7	12	M

Fusarium Yellows

Do not obtain plants from areas of known infestation. There are no means of chemical management. Avoid seeding or transplanting into infested soil or use resistant cultivars.

Leaf Blights (*Cercospora* and *Septoria*)

Use certified, pathogen-free seed or hot water treated seed or fungicide seed treatments. Practice careful sanitation in transplant production. Use 3 or 4-year crop rotation.

Code	Product Name (*=Restricted Use)	Product Rate	Active Ingredient(s)	PHI (d)	REI (h)	Bee TR
Alternate one of the following FRAC code 11 fungicides:						
7 + 11	Merivon Xemium	4.0 to 11.0 fl oz/A	fluxapyroxad + pyraclostrobin	1	12	N
11+M05	Quadris Opti 5.5SC	2.4 to 3.7 pt/A	azoxystrobin + chlorothalonil	7	12	M
11	azoxystrobin 2.08F	9.0 to 15.5 fl oz/A	azoxystrobin	0	4	N
11	Cabrio 20EG	12.0 to 16.0 oz/A	pyraclostrobin	0	12	N
With one of the following fungicides:						
M01	copper (OMRI)[1]	at labeled rates	copper	0	see label	N
M05	chlorothalonil 6F	2.0 pt/A	chlorothalonil	7	12	M
3	Tilt 3.6EC	4.0 fl oz/A	propiconazole	14	12	N
3	Rhyme 2.08SC	5.0 to 7.0 fl oz/A	flutriafol	7	12	--
7	Fontelis 1.67SC	14.0 to 24.0 fl oz/A	penthiopyrad	3	12	L
7 + 12	Miravis Prime	9.2 to 13.4 fl oz/A	pydiflumetofen + fludioxonil	0	12	--
9 + 12	Switch 62.5WG	11.0 to 14.0 fl oz/A	cyprodinil + fludionil	0	12	L

[1]There are several OMRI listed copper-based products; see labels for specifics. Copper applications may help suppress some fungal pathogens in organic production systems.

Pink Rot (*Sclerotinia sclerotiorum*)

Under moist conditions, white to pinkish cottony growth develops on the petioles and around the base of the plant. This is followed by a pink, watery, soft rot that causes a rapid collapse and death of the plant. Few products are

available for managing Pink Rot. Avoid planting in shaded or poorly drained areas and areas with a history of Pink Rot. Rotate fields for at least 2 or 3 years. Maximize air movement through the plant canopy.

Apply Contans 3 to 4 months prior to the onset of disease to allow the mycoparasite to reduce soil inoculum (sclerotia) levels. Following application, incorporate 1-2 inches deep; however, to avoid the chance of infesting the upper soil layer with untreated sclerotia from the lower soil layer, **do not plow** between treatment and planting.

Code	Product Name (*=Restricted Use)	Product Rate	Active Ingredient(s)	PHI (d)	REI (h)	Bee TR
Apply 3 to 4 months prior to the onset of disease (see instructions above and on the label):						
44	Contans 5.3WG (OMRI)	1.0 to 4.0 lb/A	*Coniothyrium minitans*	0	4	N
Rotate between the following fungicides as long as weather conditions are favorable for disease development:						
M05	chlorothalonil 6F[1]	3.0 pt/A[1]	chlorothalonil	7	12	M
7 + 12	Miravis Prime	13.4 fl oz/A	pydiflumetofen + fludioxonil	0	12	--
9 + 12	Switch 62.5WG	11.0 to 14.0 oz/A	cyprodinil + fludioxonil	0	12	L
12	Cannonball WG	7.0 oz/A	fludioxonil	0	12	L

[1]Shortly after plants emerge and repeat on a 7-day schedule (suppression only).