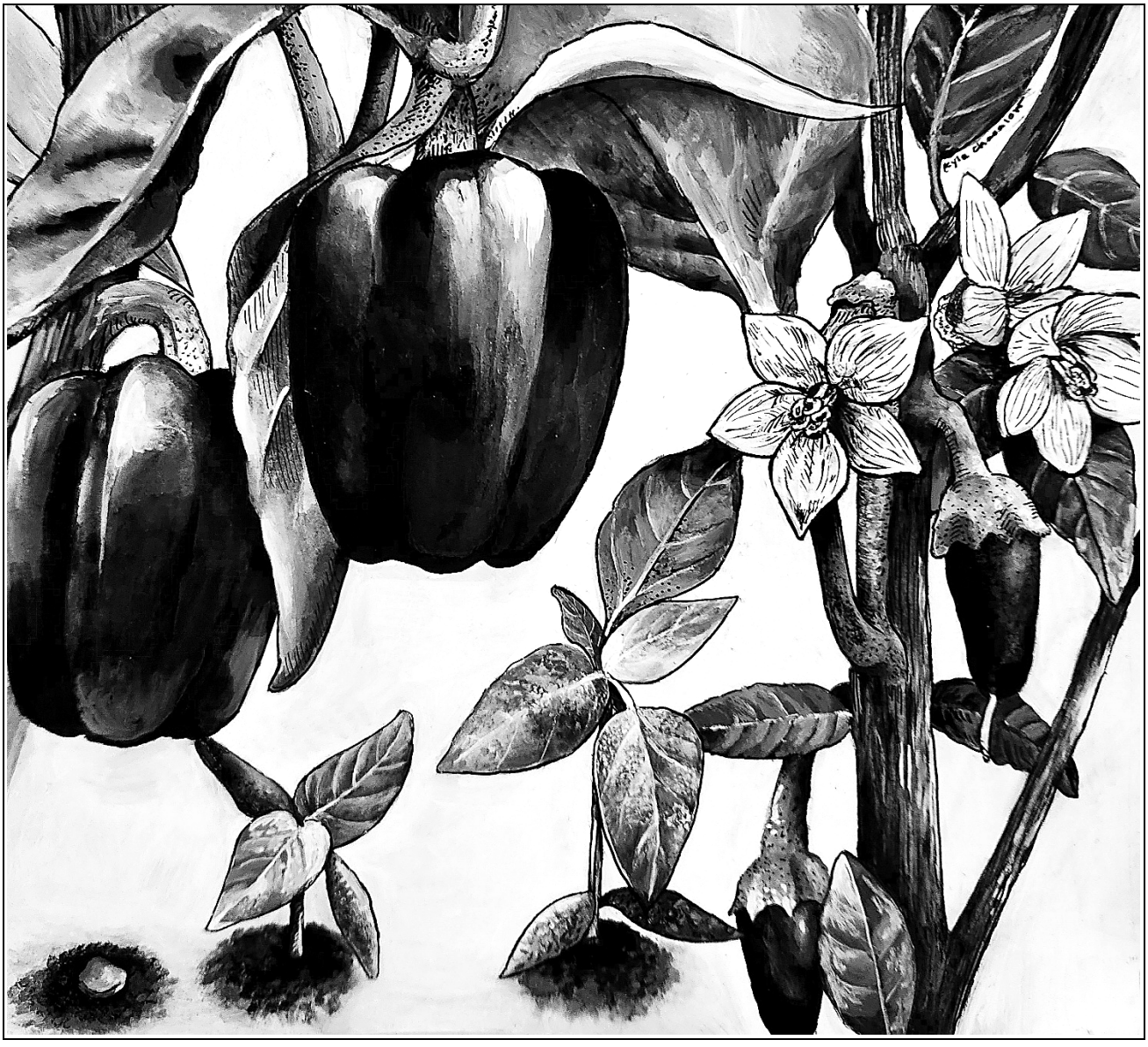
2026/2027
Mid-Atlantic Commercial Vegetable Production Recommendations



F. Commodity Recommendations

Pesticide Use Disclaimer

THE LABEL IS THE LAW

A pesticide applicator is legally bound by the labeling found on and with the pesticide container in their possession. Before using a pesticide, check and always follow the labeling distributed with the product at the point of sale for legally enforceable rates and use restrictions and precautions.
Although labels are available on the Internet from electronic label services such as Proagrica's CDMS (*https://www.cdms.net/*), Greenbook (*https://www.greenbook.net*), or Agworld DBX powered by Agrian (*https://www.agrian.com/labelcenter/results.cfm)* the information contained in these electronic labels may not be identical to the labeling distributed with the product. **Please be advised that these electronic label services provide use disclaimers, and in some cases legally binding *User Agreements* assigning ALL liability to user of service. (**See section D 3.1. Labels and Labeling for more detail.)

Guide to the Recommended Pesticide Tables in the Following Crop Sections:

1. Pesticides are listed by **group number or code based on chemical structure and mechanism of action**, as classified by the Herbicide Resistance Action Committee (**HRAC**, *https://hracglobal.com*) for herbicides, the Insecticide Resistance Action Committee (**IRAC**, *https://irac-online.org*) for insecticides, and the Fungicide Resistance Action Committee (**FRAC,** *https://www.frac.info/*) for fungicides. **In this guide, if the group number or code is in bold font, there are resistance concerns for the product.**
2. **Restricted use pesticides** are marked with a * in the Tables. These products may only be used by certified and/or licensed pesticide applicators, and when stated on the label, those making applications under their direct supervision. Some labels may restrict use solely to certified and/or licensed applicators. (See section D 3.2.1 Restricted Use Classification Statement for more detail).
3. **In addition to the pesticide products listed in the Commodity Recommendations below, other formulations or brands with the same active ingredient(s) may be commercially available. ALWAYS CHECK THE LABELING ON THE PRODUCT CONTAINER ITSELF:**
   a) to ensure a pesticide is labeled for the same intended use,
   b) to ensure the pesticide is labeled for the desired crop,
   c) for differences in application rates and % active ingredient(s), and
   d) additional restrictions.
4. All pesticide recommendations contained in this document are prescribed for spray applications to a **broadcast area of 1 acre** (43,560 square feet). **Adjust the rate accordingly for banded applications** (See section E 1.3. Calibrating Granular Applicators) **or for chemigation** (check labels for amounts per 1,000 feet).
5. Check the physical product label for and do not exceed the maximum amount of pesticide *per application* and the maximum number of applications *per year*.
6. **Bee Toxicity Rating (Bee TR)**: N=nontoxic; L=minimum impact on bees; M=moderately toxic, can be used if dosage, timing, and method of application are correct, but should NOT be applied directly to the crop if bees are present; H=highly toxic, severe losses expected, -- = data not available.
7. In accordance with the USDA National Organic Program, the Organic Materials Research Institute (OMRI) maintains a directory of all products that OMRI has determined are allowed for use in organic production, processing, and handling. These products are catalogued online in the **OMRI Products List** (see *https://www.omri.org/omri-lists*).

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

Parsnips

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	
Parsnips[1,2]	**N (lb/A)**	**P_2O_5 (lb/A)**				**K_2O (lb/A)**				**Nutrient Timing and Method**
	50-75	150	100	50	0	150	100	50	0	Total nutrient recommended
	25-50	150	100	50	0	150	100	50	0	Broadcast and disk-in
	25-50	0	0	0	0	0	0	0	0	Sidedress 4-5 weeks after planting

[1]Apply 1-2 lb/A of boron (B) with broadcast fertilizer; see also Table B-7. in Chapter B Soil and Nutrient Management.
[2]Apply 20-30 lb/A of sulfur (S) for most soils.

Seeding and Spacing

Seeds germinate slowly. Large growers should purchase primed seed for more even germination. Never use seed that is more than 1 yr. old. In March and April, seed 3-5 lb/A at a depth of 1/4 to 3/8 inch in rows 18-30 inches apart. Adjust the seeder to give 8-10 plants/ft of row. Thin seedlings to 2-4 inches in the row.

Harvest and Post-Harvest Considerations

Parsnips may be dug, topped, and stored at 32°F (0°C). Storage relative humidity must be kept high (90-95%) to prevent wilting; ventilated plastic crate liners help to prevent moisture loss. Parsnips can be stored for up to 6 months. Good market quality is the result of starch changing to sugar which occurs after 2-3 weeks in storage below 35°F (2°C); leaving parsnips in the ground over winter or freezing them is not necessary. If parsnips are left in the ground over winter, remove them before growth starts in the spring.

Weed Control

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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 (Preemergence)

Group	Product Name (*=Restricted Use)	Product Rate	Active Ingredient	Active Ingredient Rate	PHI (d)	REI (h)
5	Lorox 50DF Linex 4L	1.5 to 3 lb/A 1.5 to 3 pt/A	**linuron**	0.75 to 1.5 lb/A	--	24

-Apply right after seeding, but before crop emergence. Plant seeds at least 0.5 inch deep.
-Primarily controls broadleaf weeds and is weak on grasses.
-Use lower rates on coarse-textured soil low in organic matter and higher rates on medium- or fine-textured soils with greater organic matter.
-Maximum for Lorox and Linex is one application 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 2.5 pt/A	**sethoxydim**	0.2 to 0.5 lb/A	14	12

-Postemergence as broadcast spray with both plasticulture and bareground
-**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 nonionic surfactant (NIS) at 0.25% v/v (1 qt/100 gal of spray solution) when grasses are small and/or when crop safety is a concern. -Clethodim is good on most of the grasses in the region, but is not very effective on goosegrass.
-**Poast 1.5EC**: use COC at 1.0% v/v.
-**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. Yellow nutsedge, wild onion, wild garlic, and broadleaf weeds will **not** be controlled. -Controls many annual and certain perennial grasses, although weak on annual bluegrass; Poast is preferred for goosegrass control. For best results, treat annual grasses when they are actively growing and before tillers are present. -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.
-**Do not** apply more than 8 fl oz/A of Select 2EC in a single application and **do not** exceed 32 fl oz/A for the season; **do not** apply more than 16 fl oz/A of Select Max in a single application and **do not** exceed 64 fl oz/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 2.5 pt/A Poast in a single application and **do not** exceed 2.5 pt/A for the season.

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
14	Aim (hooded or directed application only)	**carfentrazone**

Insect Control

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Aphids

Aphids are small soft bodied insects, usually green or yellow. They are found on the underside of leaves and/or on stems. If aphid infestation is heavy, it may cause yellowing or distorted leaves, necrotic spots on leaves and stunted shoots. Aphids secrete a sticky, sugary substance called honeydew which encourages the growth of sooty mold. Plants generally tolerate low to medium levels of infestations.

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	1.0 to 2.0 pt/A	malathion	7	24	H
4A	Admire Pro	4.4 to 10.5 fl oz/A	imidacloprid - **soil**	21	12	H
4A	Admire Pro	1.2 fl oz/A	imidacloprid - **foliar**	7	12	H
4A	Actara 25WDG	1.5 to 3.0 oz/A	thiamethoxam	7	12	H
4A	Platinum 75SG	1.7 to 4.0 oz/A	thiamethoxam	AP	12	H
4C	Transform WG	0.75 to 1.5 oz/A	sulfoxaflor	7	24	H
4D	Sivanto Prime	7.0 to 14.0 fl oz/A	flupyradifurone	7	4	M
28	Exirel	13.5 to 20.5 fl oz/A	cyantraniliprole	1	12	H
29	Beleaf 50SG	2.0 to 2.8 oz/A	flonicamid	3	12	L
UN	Azatin O, Aza-Direct, Ecozin, Neemix (OMRI)	Refer to individual labels for rates	azadirachtin	0	4	L

Carrot Weevils

Begin treatment when weevils become active, usually when the soil surface reaches 60°F (16°C). Tillage of previous crop residue and rotating fields at least ¼ mile from previous carrot-family plantings are important cultural practices. Parsnips do not appear on many insecticide labels, rather they should be considered part of the tuberous and corm vegetable group. Pyrethroids and Leverage 360 are labeled for this pest either on carrots or on other tuberous and corm vegetables not explicitly specifying parsnip.

Apply one of the following formulations:						
Group	**Product Name (*=Restricted Use)**	**Product Rate**	**Active Ingredient(s)**	**PHI (d)**	**REI (h)**	**Bee TR**
28	Exirel	13.5 to 20.5 fl oz/A	cyantraniliprole	1	12	H

Leafhoppers

Leafhoppers suck sap and plant juices, causing small white spots (stippling) on the upper leaf surface, usually beginning near the midrib. Stippled areas can coalesce into larger whitish blotches on mature leaves. Prolonged feeding causes a drying and yellowing (or browning) of leaf margins, and possibly the whole leaf. In our area leafhoppers only occasionally require treatment. Some leafhopper species cause curling or stunting of terminal leaves and can transmit Aster Yellows, which cause a yellowing of leaves while the veins remain green. Aster Yellows also slows growth and leaves may be smaller and narrower. The spread of Aster Yellows is worse in a cool, wet summer. Cultural controls include weed control, especially plantain and dandelion, and using row covers.

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 2.0 qt/A	carbaryl	7	12	H
3A	Fastac CS*	1.8 to 3.8 fl oz/A	alpha cypermethrin	1	12	H
3A	Brigade 2EC*, Brigade eVo	5.12 to 6.4 fl oz/A	bifenthrin	21	12	H
3A	Delta Gold*	1.5 to 2.4 fl oz/A	deltamethrin	3	12	H
3A	Hero*	4.0 to 10.3 fl oz/A	bifenthrin + zeta cypermethrin	21	12	H
3A	Mustang Maxx*	1.76 to 4.0 fl oz/A	zeta cypermethrin	1	12	H
4A	Admire Pro	4.4 to 10.5 fl oz/A	imidacloprid - **soil**	21	12	H
4A	Admire Pro	1.2 oz/A	imidacloprid - **foliar**	7	12	H
4A	Actara 25WDG	1.5 to 3.0 oz/A	thiamethoxam	7	12	H
4A	Platinum 75SG	1.7 to 4.01 oz/A	thiamethoxam	AP	12	H
4C	Transform WG	1.5 to 2.75 oz/A	sulfoxaflor	7	12	H
4D	Sivanto Prime	7.0 to 14.0 fl oz/A	flupyradifurone - **foliar**	7	4	M

Whiteflies

While whiteflies are not very common pests on parsnips, they can occasionally build their populations up and need treatment. Whiteflies use their piercing, sucking mouthparts to suck sap from phloem tissues in plant stems and leaves. Large populations can cause leaves to turn yellow and die. Whiteflies excrete honeydew, so leaves may be sticky or covered with black sooty mold that grows on the honeydew.

Apply one of the following formulations:						
Group	**Product Name (*=Restricted Use)**	**Product Rate**	**Active Ingredient(s)**	**PHI (d)**	**REI (h)**	**Bee TR**
4A	Admire Pro	4.4 to 10.5 fl oz/A	imidacloprid - **soil**	21	12	H
4A	Admire Pro	1.2 fl oz/A	imidacloprid - **foliar**	7	12	H
4A	Actara 25WDG	3.0 to 4.0 oz/A	thiamethoxam	7	12	H
4A	Platinum 75SG	1.7 to 4.01 oz/A	thiamethoxam	AP	12	H
4C	Transform WG	2.00 to 2.75 oz/A	sulfoxaflor	7	24	H
4D	Sivanto Prime	10.5 to 14.0 fl oz/A	flupyradifurone	7	4	M
7C	Knack	8.0 to 10.0 fl oz/A	pyriproxyfen	7	12	L
29	Beleaf 50SG	2.8 oz/A	flonicamid	3	12	L

Disease Control

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Recommended Fungicides

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

Code	Product Name (*=Restricted Use)	Product Rate	Active Ingredient(s)	PHI (d)	REI (h)	Bee TR
Apply the following preplant incorporated or as a soil-surface spray after planting:						
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	AP	48	N

Leaf Spots (*Alternaria* and *Cercospora*), Rhizoctonia Stem Canker, and Powdery Mildew

Rotate fields to allow at least 2 yr between parsnip plantings. Always plant in well-drained soils with a pH of 7.0. Ridge soil over shoulders to prevent pathogen infection. Begin sprays at the first sign of disease and repeat no more than 3 times at 10-day intervals. **Do not** make more than one consecutive application of a FRAC code 11 fungicide.

Code	Product Name (*=Restricted Use)	Product Rate	Active Ingredient(s)	PHI (d)	REI (h)	Bee TR
Rotate, or tank-mix the following						
M05	chlorothalonil 6F	1.5 to 2.0 pt/A	chlorothalonil	10	12	M
WITH the following fungicides. Rotate among different FRAC codes.						
3	propiconazole 3.6F	3.0 to 4.0 fl oz/A	propiconazole	14	12	--
7 + 9	Luna Tranquility 4.16SC	8.0 to 11.2 fl oz/A	fluopyram + pyrimethanil	7	12	--
7 + 11	Luna Sensation 4.25SC	5.0 to 5.8 fl oz/A	fluopyram + trifloxystrobin	7	12	--
7 + 11	Merivon Xemium	4.0 to 5.5 fl oz/A[1]	fluxapyroxad + pyraclostrobin	7	12	N
7 + 11	Pristine 38WG	8.0 to 10.5 oz/A	boscalid + pyraclostrobin	0	12	--
7 + 12	Miravis Prime	6.8 fl oz/A	pydiflumetofen + fludioxonil	7	12	--
11	azoxystrobin 2.08F	9.0 to 15.5 fl oz/A	azoxystrobin	0	12	N
11	Cabrio 20EG	8.0 to 12.0 oz/A	pyraclostrobin	0	12	N
11	Flint Extra 500SC	2.0 to 2.9 fl oz/A	trifloxystrobin (**Do not apply near Concord grapes**, see label)	7	12	N

[1]Use highest rate for Cercospora leaf spot.