

Disease Control

Seed treatment Disease Control

Seed treatment prior to seeding

For Pythium and Phytophthora control use a seed treatment such as Apron XL LS (mefenoxam)--0.085 to 0.64 fl oz/100 lb seed

For control of other root rots apply Maxim 4FS (fludioxonil)--0.08 to 0.16 fl oz/100 lb seed

Apron XL LS and Maxim 4FS can be combined.

Damping-off control after seeding

For Pythium root rot control apply as banded spray; mefenoxam--0.5 to 1.0 pt Ridomil Gold 4SL/A metalaxyl--2.0 to 4.0 pt MetaStar 2E AG/A

For Rhizoctonia root rot control apply as in-furrow application: azoxystrobin--0.40-0.80 fl oz 2.08F/A (see label)

For Pythium and Rhizoctonia root rot control apply as banded spray: mefenoxam + azoxystrobin (Uniform--0.34 fl. oz 3.66SC/1000 ft. row). See label for restrictions

Bacterial leaf blight and Septoria leaf spot

To help reduce disease pressure from bacterial and fungal diseases, do not plant parsley continually in the same field. Rotate with non-related crops for at least 2 years. Space successive plantings in the same year as far apart as possible. Heavy winds and rain may damage leaves and predispose leaves to bacterial infections.

Bacterial leaf blight: Prevention is key to reducing spread of the pathogen. Avoid working in the fields while the foliage is wet to help reduce spread. Scout fields on a regular basis for early symptoms, apply the following and repeat every 7 days:

Apply fixed copper at labeled rates.

Septoria leaf spot: The disease causes serious problems in fields where parsley has been grown extensively. Severe losses will occur if not controlled properly, especially if field or farm has a history of the disease. Grow parsley in areas of farm without history of disease. Plant blocks as far part as possible. **Early detection and prevention are keys to controlling septoria leaf spot.** Scout daily, and apply fungicides preventatively before first leaf spots appear. Tank-mix or rotate the following every 7 days. Early season infections (i.e., prior to first cutting) will severely reduce subsequent harvests.

Rotate the following every 7 days prior to the onset of the disease

Fontelis--14.0 to 24.0 fl oz 1.67SC/A

with one of the following fungicides:

Merivon--4.0 to 11.0 fl oz 2.09SC/A

or with a FRAC code 11 fungicide where resistance is not present*:

azoxystrobin--6.0 to 15.5 fl oz 2.08F/A or OLF *plus* fixed copper at labeled rates

Cabrio--12.0 to 16.0 oz 20WG/A fixed copper at labeled rates

*Resistance to FRAC code 11 fungicides are present in areas of southern New Jersey where FRAC code 11 fungicides have been used extensively to control Septoria leaf spot.

Tank-mixing Fontelis or Merivon with a fixed copper may also help suppress bacterial infections.

PARSNIPS

Varieties¹

Andover

Harris Model

Javelin*

Varieties listed alphabetically.

* Denotes hybrid variety

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.

Parsnips	Pounds N per Acre	Soil Phosphorus Level				Soil Potassium Level				Nutrient Timing and Method
		Low	Med	High (Opt.)	Very High	Low	Med	High (Opt.)	Very High	
Pounds P ₂ O ₅ per Acre										
Pounds K ₂ O per Acre										
	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.

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

Seeding and Spacing

Seed in March and April. The seeds germinate slowly. Never use seed that is more than 1 year old.

Seed 3 to 5 pounds per acre at a depth of 1/4 to 3/8 inch in rows 18 to 30 inches apart. Adjust seeder to give 8 to 10 plants per foot of row. Thin seedlings to 2 to 4 inches in the row.

Harvest and Postharvest Considerations

Parsnips may be dug, topped, and stored at 32°F and 90 to 95 percent relative humidity. They can be stored for up to 6 months. Storage conditions for parsnips are similar to those for carrots. Good market quality is the result of starch changing to sugar which occurs after 2 to 3 weeks in storage below 35°F. It is not necessary to leave parsnips out over winter or to freeze them to achieve acceptable quality. Because parsnips are susceptible to wilting, storage humidity must be kept high. Ventilated plastic crate liners help to prevent moisture loss. Parsnips left in the ground over winter should be removed before growth starts in the spring and flower stalk formation begins.

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.

Apply postemergence herbicides when crop and weeds are within the recommended size and/or leaf stage.

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.

Preemergence

Linuron--0.75 to 1.5 lb/A. Apply 1.5 to 3.0 pounds per acre Lorox 50DF or 1.5 to 3.0 pints per acre of Lorox 4L right after seeding. Plant seed at least 1/2 inch deep.

Postemergence

Clethodim--0.094 to 0.125 lb/A. Apply 12.0 to 16.0 fluid ounces of Select Max 0.97EC with nonionic surfactant to be 0.25% of the spray solution (1 quart per 100 gallons of spray solution) postemergence to control many annual and certain perennial grasses, including annual bluegrass. Select will not consistently control goosegrass. Control may be reduced if grasses are large or if hot, dry weather or drought conditions

occur. For best results, treat annual grasses when they are actively growing and before tillers are present. Repeated applications may be needed to control certain perennial grasses. Yellow nutsedge, wild onion, or broadleaf weeds will not be controlled. Do not tank-mix with or apply within 2 to 3 days of any other pesticide unless labeled, as the risk of crop injury may be increased, or reduced control of grasses may result. Observe a minimum preharvest interval of 30 days.

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 as a broadcast spray after the last harvest. Add nonionic surfactant according to the labeled instructions. 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 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:

azadirachtin--15.0 to 30.0 oz/A Ecozin Plus (or OLF)
 flonicamid--2.0-2.8 fl oz/A Beleaf 50SG
 imidacloprid--**soil** 4.4 to 10.5 fl oz/A Admire Pro (or OLF),
foliar 1.2 fl oz/A Admire PRO (or OLF)
 malathion--1.0 to 2.0 pts/A Malathion 57EC (or OLF)
 sulfoxaflor--0.75 to 1.50 oz/A Transform WG
 thiamethoxam--**soil** 1.7 to 4.0 oz/A Platinum 75SG; **foliar** 1.5 to 3.0 oz/A Actara 25WDG

Leafhoppers

Apply one of the following formulations:

carbaryl--0.5 to 1.0 qt/A Sevin Plus XLR (or OLF)
 imidacloprid--**soil** 4.4 to 10.5 fl oz/A Admire Pro (or OLF),
foliar 1.2 fl oz/A Admire PRO (or OLF)
 sulfoxaflor--1.50 to 2.75 oz/A Transform WG
 thiamethoxam--**soil** 1.7 to 4.0 oz/A Platinum 75SG; **foliar** 1.5 to 3.0 oz/A Actara 25WDG

Whiteflies

Apply one of the following formulations:

flonicamid--2.8 fl oz/A Beleaf 50SG (GH whiteflies)

imidacloprid--**soil** 4.4 to 10.5 fl oz/A Admire Pro (or OLF),

foliar 1.2 fl oz/A Admire PRO (or OLF)

thiamethoxam--**soil** 1.7 to 4.0 oz/A Platinum 75SG; **foliar** 1.5 to 3.0 oz/A Actara 25WDG

Pesticide	Use Category ¹	Hours to Reentry ²	Days to Harvest
INSECTICIDE			
azadirachtin	G	4	0
carbaryl	G	12	7
flonicamid	G	12	3
imidacloprid (soil/foliar)	G	12	21/7
malathion	G	24	7
sulfoxaflor	R	24	7
thiamethoxam (soil/foliar)	G	12	7
FUNGICIDE (FRAC code)			
azoxystrobin (Group 11)	G	12	0
Cabrio (Group 11)	G	12	0
chlorothalonil (Group M5)	G	12	10
Gem (Group 11)	G	12	7
Merivon (Groups 7 +11)	G	12	7
Ridomil Gold (Group 4)	G	48	0
Ultra Flourish (Group 4)	G	48	AP

See Table D-6.

¹ G = general, R = restricted

² Chemicals with multiple designations are based on product and/or formulation differences. CONSULT LABEL.

Disease Control

Damping-Off (*Pythium* and *Phytophthora*)

Apply the following preplant incorporated or as a soil-surface spray after planting:

mefenoxam--(Ridomil Gold--1.0 to 2.0 pt 4SL/A or Ultra Flourish 2.0 to 4.0 pt 2E/A)

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

Rotate fields to allow at least 2 years 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 three times at 10-day intervals.

Rotate or tank-mix:

chlorothalonil--1.5 to 2.0 pt 6F/A or OLF

With one of the following FRAC code 11 fungicides:

azoxystrobin--9.0 to 15.5 fl oz 2.08F/A or OLF

Cabrio--8.0 to 12.0 oz 20EG/A

Gem--1.9 to 2.9 oz 500SC/A

Merivon--4.4 to 5.5 fl oz 2.09SC/A (use highest rate for *Cercospora* leaf spot)

Do not make more than one consecutive application of the FRAC code 11 fungicides.

PEAS

Recommended Processing Pea Varieties¹

Variety	Season	Heat Units	Leaf Type	Reported Disease Reaction ²
Jumpstart	First Early	1110	normal	F1
Strike	First Early	1140	normal	F1
Icebreaker	First Early	1155	afila	F1
Salinero	First Early	1155	normal	F1, DM(I)
June	Early	1160	normal	F1
Cabree	Early	1170	normal	F1
Icepack	Early	1170	afila	F1
Dakota	Midseason	1190	normal	F1, PM
Marias	Midseason	1290	normal	F1
Ashton	Late	1480	normal	F1, DM(I)
Bolero	Late	1480	normal	F1
Grundy	Late	1595	normal	F1

¹Use varieties recommended by processors. Local adaptation and quality needs of processors must be considered. Consult the University of Delaware Extension Program website for results from recent processing pea variety trials: ag.udel.edu/extension/vegprogram/index.htm.

²Reported disease reactions from source companies. Resistant to Fusarium wilt race 1 (F1), Resistant to Powdery mildew (PM), or has intermediate resistance to Downy mildew (DM(I))