

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.

LEEKS

Varieties

Arkansas (Overwinter)	Lancelot (Overwinter)
Megaton* (Summer/Fall)	Lexton* (Overwinter)
Bandit (Overwinter)	Pandora (Summer/Fall)
Belton* (Summer/Fall)	Tadorna (Overwinter)
King Richard (Summer)	

* Indicates F1 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.

Leeks	Pounds N per Acre	Soil Phosphorus Level				Soil Potassium Level				Nutrient Timing and Method
		Low	Med	High Very		Low	Med	High Very		
				(Opt.)	High			(Opt.)	High	
		Pounds P ₂ O ₅ per Acre				Pounds K ₂ O per Acre				
100-125	200	150	100	0	200	150	100	0	Total nutrient recommended.	
50-75	200	150	100	0	200	150	100	0	Broadcast and disk-in.	
25-50	0	0	0	0	0	0	0	0	Sidedress 3-4 weeks after planting if needed.	

Apply 3.0 to 4.0 pounds of boron (B) per acre with broadcast fertilizer. See Table B-9 for more specific boron recommendations.

Transplants

Southern transplants are used for early spring plantings. For summer planting, sow in seedbeds from early March to mid-May. About 2.0 pounds of seed are required to provide enough plants to set an acre. Seed should be planted 1/3 to 1/2 inch deep 12 to 16 weeks before field setting. Plants will be ready to set in early August. Transplants can be produced in 200-288 deep cell trays. Spring leeks should be seeded approximately the third week of December and the fall crop approximately the first week of June.

Field Spacing

Rows: 20 to 30 inches apart; plants: 4 to 6 inches apart in the row. Set plants in trenches 3 to 4 inches deep using celery-type planter.

Culture

Leeks grow slowly for the first 2 or 3 months. To develop a long white stem, start to gradually fill in trenches and then hill soil around stems to 3 or 4 inches.

Harvest and Post Harvest Considerations

Spring-transplanted leeks are ready for harvest in July. August-planted leeks are ready for harvest by November or can be overwintered. Half-mature leeks of the hardy varieties will stand winter freezing with some protection such as salt hay or straw if planted in very cold areas. In mild winter areas no protection is required. They will be ready early in the spring. Undercut the leeks with a bar on a tractor or for smaller plantings dig with a spading fork.

After digging, leeks can be left in the field to dry for a short period. Leeks are bunched with three to four leeks per bunch. If soil sticks to the leeks, power wash the bunches

before packing. If necessary, leeks can be cooled by icing in the box, hydrocooling or vacuum cooling with a water spray. Store leeks at 32°-36°F with 95-100% relative humidity for up to two months, but more typical storage is 7 to 21 days.

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 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.

Postemergence

S-metolachlor--0.64 to 1.27 lb/A. A **Special Local-Needs 24(c) label has been approved for the use of Dual Magnum in leeks in New Jersey. The use of this product is legal ONLY if a waiver of liability has been completed. The waiver of liability can be completed on the Syngenta website, "farmassist.com". Go to the website "farmassist.com" and register (or sign in if previously registered), then under "products" on the toolbar, click on indemnified labels and follow the instructions.** Apply 0.67 to 1.33 pints per acre after the leeks have reached the two true leaf stage of growth. Use lower rate on lighter coarse-textured sandy soils and the higher rate on heavier

fine-textured soils. Follow with overhead irrigation if rainfall does not occur. Primarily controls annual grass and certain broadleaf weeds, including galinsoga preemergence. Use other methods to control emerged weeds prior to application. Observe a 21-day preharvest interval. Make only one application per crop per season. Do NOT use on coarse textured soils with less than 1% organic matter. **Other generic versions of metolachlor and s-metolachlor may be available, and may or may not be labeled for use in the crop.**

Sethoxydim--0.2 to 0.3 lb/A. Apply 1.0 to 1.5 pints per acre Poast 1.5EC with oil concentrate to be 1 percent of the spray solution (1 gallon per 100 gallons of spray solution) postemergence to control annual grasses and certain perennial grasses. **The use of oil concentrate may increase the risk of crop injury when hot or humid conditions prevail.** To reduce the risk of crop injury, omit additives or switch to nonionic surfactant when grasses are small and soil moisture is adequate. 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 and apply no more than 3 pints per acre in one season.

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. 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:
 acetamprid--5.0 to 8.0 oz./A Assail 30SG (or OLF)
 malathion--1.5 to 2.0 pts/A Malathion 57EC (or OLF)
 zeta-cypermethrin--2.24 to 4.00 oz/A Mustang Maxx (or OLF)

Armyworms (AW), Cutworms (CW), Cabbage Loopers (CL)

Apply one of the following formulations:
Bacillus thuringiensis--0.5 to 2.0 lb/A (CW and CL); 1.0 to 2.0 lbs/A (AW only) Dipel DF (or OLF) (OMRI-listed)
 methoxyfenozide--(AW) 4.0-8.0 fl oz/A Intrepid 2F
 spinosad (AW and CL only)--3.0 to 6.0 fl oz/A Entrust SC (OMRI-listed)

spinetoram (AW and CL only)--5.0 to 10.0 fl oz/A Radiant SC
 zeta-cypermethrin--2.24 to 4.00 fl oz/A Mustang Maxx (or OLF)

Onion Maggot

Apply the following formulation:
 malathion (adults only)--1.5 to 2.0 pts/A Malathion 57EC (or OLF)
 zeta-cypermethrin (adults only)--2.24 to 4.00 fl oz/A Mustang Maxx (or OLF)

Thrips

Apply one of the following formulations:
 acetamprid--5.0 to 8.0 oz./A Assail 30SG (or OLF) (thrips only)
 malathion--1.5 to 2.0 pts/A Malathion 57EC (or OLF)
 spinetoram--6.0 to 10.0 fl oz/A Radiant SC
 spinosad--3.0 to 6.0 fl oz/A Entrust SC **OMRI-listed**
 zeta-cypermethrin--2.88 to 4.00 fl oz/A Mustang Maxx (or OLF)

Pesticide	Use Category ¹	Hours to Reentry ²	Days to Harvest
INSECTICIDE			
acetamprid	G	12	7
<i>Bacillus thuringiensis</i>	G	4	0
malathion	G	24	3
methoxyfenozide	G	4	1
spinetoram	G	4	1
spinosad	G	4	1
zeta-cypermethrin	R	12	7
FUNGICIDE (FRAC code)			
azoxystrobin (Group 11)	G	4	0
Cabrio (Group 11)	G	12	7
chlorothalonil (Group M5)	G	12	14
Endura (Group 7)	G	12	7
Folicur (Group 3)	G	12	7
Fontelis (Group 7)	G	12	0
Forum (Group 40)	G	12	0
Inspire Super (Groups 3 + 9)	G	12	7
mefenoxam (Group 4)	G	AP	AP
Merivon (Groups 7 + 11)	G	12	7
metalaxyl (Group 4)	G	AP	AP
Pristine (Groups 11 + 7)	G	12	7
Uniform (Groups 4 + 11)	G	0	AP

See Table D-6. ¹G = general, R = restricted, AP = At seeding or transplanting
²Chemicals with multiple designations are based on product and/or formulation differences. CONSULT LABEL.

Disease Control

Damping-Off and Other Seedling Diseases

For seeded beds:

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.

For transplanted beds:

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 to 0.80 fl oz 2.08F/A (see label) or OLF

For Pythium and Rhizoctonia root rot control apply as banded spray application:

mefenoxam + azoxystrobin (Uniform--0.34 fl oz 3.66SC/1000 ft. row). See label for restrictions

Purple Blotch

Begin preventative applications in fall as soon as transplants are set out especially in fields where purple blotch had been a problem in the past. Rotate the following at 10-day intervals as long as night temperatures remain warm and there are extended periods of leaf wetness.

Alternate:

chlorothalonil--1.5 to 3.0 pt 6F/A or OLF; (do not apply chlorothalonil more than three times per season)

With one of the following FRAC code 11 fungicides:

azoxystrobin--6.0 to 12.0 fl oz 2.08F/A for purple blotch, or OLF.

Cabrio--8.0 to 12.0 oz 20EG/A

Pristine--10.5 to 18.5 oz 38WP/A

With:

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

Fontelis--16.0 to 24.0 fl oz 1.67SC/A

Folicur--4.0 to 6.0 fl oz 480SC/A

Inspire Super--16.0 to 20.0 fl oz 2.82 SC/A

Endura--6.8 oz 70WG/A

Downy Mildew

Begin preventative fungicide program when conditions favor disease develop. Apply one of the following:

Forum--6.0 fl oz 4.18SC/A (must be tank mixed with another fungicide effective for downy mildew), or

chlorothalonil--1.5 to 3.0 pt 6F/A or OLF; (do not apply chlorothalonil more than three times per season)

With a FRAC code 11 fungicide:

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

Cabrio--12.0 oz 20EG/A

Pristine--18.5 oz 38WP/A (for downy mildew suppression)

In rotation with one of the following:

Merivon--8.0 to 11.0 fl oz 2.09SC/A (for downy mildew suppression)

Fontelis--16.0 to 24.0 fl oz 1.67SC/A

Folicur--4.0 to 6.0 fl oz 480SC/A

Fungicides with different modes of action (FRAC code) should always be rotated to help reduce the chances for fungicide resistance development.

White Rot (*Sclerotium*)

This disease is severe only on overwintered leeks. Disease development is favored by cool, moist soil conditions. The soil temperature range for infection to occur ranges from 50° to 75°F, with optimum being 60° to 65°F. At soil temperatures above 78°F, the disease is greatly inhibited. Sclerotia can survive for over 20 years, even in the absence of a host plant. Soil moisture conditions that are favorable for leek, garlic and onion growth are also ideal for white rot development.

Apply Folicur--4.0 to 6.0 fl oz 480SC/A (10–14 day interval) (suppression only)

In treated fields, do not grow crops other than leek and leafy vegetables during the harvest year, and do not grow leeks, garlic, leafy vegetables, tomatoes, root crops, cereal grains, or soybeans during the following year.

Fusarium basil rot

Leaf tips of infected plants will turn yellow and curl. Eventually, entire leaves will become chlorotic, turn brown and decay. Infected roots will turn dark brown. Infected bulbs, when cut in half, will have a watery, brown discoloration of the outermost layers. White mycelium of the fungus may be present. Pathogen can survive in the soil for many years. Rotate away from leeks, garlic, or onions for a minimum of 4 to 5 years. Avoid excess fertility. Insect feeding damage can increase basil rot, control onion maggot and other insects that may feed on bulbs.