

## Rutgers Cooperative Extension

Compiled by W.L. Kline & S.T. Kline

Prepared with support from Northeast Region SARE Program Project ENE95-7

# GREEN ONION AND LEEK IPM FIELD GUIDE

## Pre-planting Decisions:

1. Lime and fertilize according to soil test recommendations. (1584)\*
2. Use the information obtained from the previous year's scouting to plan a weed control program. Match preplant incorporated and preemergence herbicides to soil type and percent organic matter. (292)
3. Rotate out of onion, leeks or other members of the onion family for a minimum of two years for disease control. (292)
4. Sampling patterns depend on the shape of the field but V, W, X or diamond shaped patterns adequately cover a field. Sampling sites should be random except where pests are more likely to be found along field edges, etc..

PEST	Damaging/ Monitored Stage	SAMPLING		THRESHOLD	NOTES
		Method	Frequency		
<b>Onion Maggot</b>  (56, 61, 18)	Larval	Use 2 cone traps at field edge to monitor peaks in adult flies. Look for wilted or missing plants 10 days after peaks to determine the effectiveness of controls.	Use base 40 degree day accumulations to estimate when peaks are likely to occur.	No thresholds established, but postplanting controls should be instituted when adult maggot fly populations are peaking.	There are at least 4 generations per year in NJ, with the first emerging in late April & peaking in early to mid-May; the second peaking in late June; the third peaking in late July, and the fourth in mid-August, depending on weather conditions. At planting in-furrow treatments may not be effective for succeeding generations following the postplanting generation. Avoid mechanical injury to onions or leeks during field operations as this attracts flies. (292)
<b>Cutworm</b>  (858, 18)	Larval	Scout for missing or cut off plants next to weedy field edges, ditches, roads, woods, or in low lying areas of the field. Sift through soil to a depth of 3 in. for larva within a 1.5 in. radius of damaged plants. (18)	Generally a problem for newly emerged plants or transplants. (292)	No thresholds established.	Cutworms hide during the day under soil clumps, stones or decaying vegetation.
<b>Thrips</b>  (34, 18)	adult nymph	Initial movement into the field can be detected with yellow sticky traps and frequent sampling of the first 50 feet of field margins. Scout 15-50 randomly selected plants examining all leaves. Thereafter scout 5 plants at 10 random locations. Record # of leaves on one plant and the total # of thrips found at each location. (18)	every 3 to 5 days	3/leaf	The most serious infestations occur in mid to late summer following grain and alfalfa harvests. Hot dry weather decreases the generational time from 30 to 14 days. Thrips rasp the leaf tissue and suck out cell sap leaving a characteristic silvery appearance. (18, 292)

<b>Disease</b>	<b>Sampling</b>	<b>Frequency</b>	<b>Threshold</b>	<b>Notes</b>
<b>Downy Mildew</b>  (58, 915, 147, 18)	Sample 5 consecutive plants in 10 random locations looking for pale green yellow to brown elongated areas on older leaves. Under moist conditions, downy masses of gray to violet fungal spores may be found.	weekly when weather conditions are favorable	presence of disease.	Rains or heavy dews and cool temperatures (45-61oF) favor disease.
<b>White Rot</b>  (147, 915)	Sample 5 consecutive plants in 10 random locations looking for yellowing and dieback of leaf tips which progresses down the leaf blades resulting in leaf collapse. White fluffy mycelium and soft rot around the base of the plant is characteristic of the disease.	when weather conditions are favorable	history of disease in the field, favorable environmental conditions & presence of disease	Only severe on overwintered leeks. Temperatures above 68°F. result in marked reduction of the disease. 4-5 yr. rotation out of any member of the onion family required in fields where white rot is a problem.
<b>Purple Blotch</b>  (147, 130, 18)	Sample 5 consecutive plants in 10 random locations looking for small, whitish, sunken and elongate lesions, becoming large, oval with purple blotches and concentric rings. Older leaves are more susceptible than younger leaves.	weekly		Long periods of leaf wetness with warm temperatures favor infection. Optimal temperature is 77°F with no infection below 55°F.  <b>(915, 18)</b>

Contributors: Gerald M. Ghidui, Extension Specialist in Entomology and Stephen A. Johnston, Extension Specialist in Plant Pathology, Rutgers Agricultural Research & Extension Center, Bridgeton, NJ.

**\*Bolded numbers in parenthesis indicate sources of additional information found in the Mid-Atlantic database by this special reference number.**

Scouting procedures, thresholds, and crop management recommendations have been compiled from a number of sources and may not be valid for all areas within the Mid-Atlantic Region. These field guides are meant to be used as guidelines. As such, they should be validated on a small acreage before relying on them. No guarantee of their validity, success, or failure to perform in the field is implied or expressed. Consult your local Cooperative Extension for additional information or assistance.