Rutgers Cooperative Extension
Compiled by B.A. Majek, W.L. Kline & S.T. Kline
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LETTUCE, ENDIVE AND ESCAROLE
INTEGRATED WEED MANAGEMENT FIELD GUIDE

Year Prior to Planting Lettuce, Endive or Escarole

Procedure	How to Sample	Use of This Information	Additional Notes
Analysis of Soil Texture, Organic Matter and pH	Using a county soil map, identify the different soils in the field. Take a sample from each area where soil types differ. Submit to lab for analysis of texture by mechanical analysis and for analysis of Cation Exchange Capacity (CEC), organic matter (OM), and pH.	With this information an integrated weed control program can be designed using specific rates of herbicides for each soil type; avoiding problems with over/under application, carryover, pH interactions, etc..	Mechanical analysis generally only needs to be done once unless there is significant erosion or changes in cropping patterns. CEC and pH should be analyzed annually. Organic matter analysis should be done every 5 - 10 years.

Scout once prior to harvest of current crop to determine weed potential for next season's lettuce, endive or escarole.

Weeds	Sampling	Threshold	Notes
Horsenettle, Ground Cherry, Yellow Nutsedge, Canada thistle, Common Milkweed, Hemp Dogbane, Bindweed spp., Johnsongrass, Bermuda Grass **(277, 1326)**	Scout field in a zigzag pattern. Sample 10 random locations 1 square yard in size or 10 ft. of row, whichever pattern best suits existing conditions. Map the location of these weeds.	Presence	See "Postharvest Perennial Weed Control" for treatment options. **(292)**
Summer Annuals Galinsoga, Common Cocklebur, Jimsonweed **(277, 1326)**	Scout as outlined above for the presence of existing weeds. Potential weed problems are best identified by a non treated weedy check. Identify the weeds, count # of each species. Note whether specific weeds are scattered throughout the field or predominate in one area of the field.	Number of weeds per 10 ft. of row or 1 sq. yd. < 1 weed = very light 1-4 weed = light 4-10 weeds = medium 10-100 weeds = heavy > 100 weeds = very heavy	Untreated check provides the most reliable information about weed potential for the coming year.

Spring Seeded Lettuce, Endive or Escarole

Pre-planting Decisions:

1. Select recommended control strategies for the weeds found in the previous year's scouting.
2. Match preplant incorporated and preemergence herbicides to soil type and percent organic matter in each field. **(292)**
3. Weeds affect the maturity of lettuce. To have a uniform, once over harvest, an effective weed control strategy must be in place.

Three Weeks after Transplanting

Weeds	How to Sample	When	Threshold
Zero Tolerance Weeds = Nightshades, Horsenettle, Yellow Nutsedge, Morning Glory, Jimsonweed, Common Cocklebur, Canada Thistle, Common Milkweed, Hemp Dogbane, Bindweed spp., Johnsongrass, Bermudagrass, Quackgrass **Summer Annuals** **(277, 1326)**	In a zigzag pattern, scout 1 sq. yd. in 5 random locations and 10 ft. of row in another 5 random locations. Identify species, count # of each weed species. Map location of zero tolerance weeds. Determine whether weeds are predominantly within the row or between rows.	Once approximately 3 weeks after trans-planting.	**# weeds/10 ft. row or 1 sq. yd.** **Action** Zero Tolerance Weeds: Presence Control required. Summer annuals: < 0.25 weed None 0.25 - 1 weed Control may be required. > 1 weed Control required Whether weeds are within the row or between the row determines if cultivation will be an effective control.
All Weeds	Same as above.	1 week after control measures are imple-mented from the 3 week scouting.	This information is used to evaluate how well controls worked.

Six Weeks After Transplanting

Weeds	How to Sample	When	Threshold
Zero Tolerance Weeds **Summer Annuals**	In a zigzag pattern, scout 1 sq. yd. in 5 random locations and 10 ft. of row in 5 random locations. Identify species, count # of each weed species. Map location of zero tolerance weeds.	Once approximately 5 -6 weeks after transplanting.	This information is used to determine if weeds are present that will interfere with harvest.

Fall Seeded Lettuce, Endive, or Escarole

Pre-planting Decisions:

1. Select recommended control strategies for the weeds found in the previous year's scouting.
2. Match preplant incorporated and preemergence herbicides to soil type and percent organic matter in each field. **(292)***
3. Weeds affect the maturity of lettuce. To have a uniform, once over harvest, an effective weed control strategy must be in place.

Three Weeks after Transplanting

Weeds	How to Sample	When	Threshold
Zero Tolerance Weeds = Nightshades, Horsenettle, Yellow Nutsedge, Morning Glory, Jimsonweed, Common Cocklebur, Canada Thistle, Common Milkweed, Hemp Dogbane, Bindweed spp., Johnsongrass, Bermudagrass, Quackgrass (277,1326) Summer or Winter Annuals	In a zigzag pattern, scout 1 sq. yd. in 5 random locations and 10 ft. of row in another 5 random locations. Identify species, count # of each weed species. Map location of zero tolerance weeds. Determine whether weeds are predominantly within the row or between rows.	Once approximately 3 weeks after trans-planting.	**# weeds/10 ft. row or 1 sq. yd.** **Action** Zero Tolerance Weeds: Presence Control required. Summer annuals: < 0.25 weed None 0.25 - 1 weed Control may be required. > 1 weed Control required Whether weeds are within the row or between the row determines if cultivation will be an effective control.
All Weeds	Same as above.	1 week after control measures are imple-mented from the 3 week scouting.	This information is used to evaluate how well controls worked.

Six Weeks After Transplanting

Weeds	How to Sample	When	Threshold
Zero Tolerance Weeds Winter Annuals	In a zigzag pattern, scout 1 sq. yd. in 5 random locations and 10 ft. of row in another 5 random locations. Identify species, count # of each weed species. Map location of zero tolerance weeds.	Once approximately 5 -6 weeks after transplanting.	This information is used to determine if weeds are present that will interfere with harvest. If perennial weeds are present, see "Postharvest Perennial Weed Control" for treatment options in the fall after crop is harvested. Threshold for perennial weeds: presence. **(292)**

***Bolded numbers in parenthesis indicate sources of additional information found in the Mid-Atlantic IPM 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.