

Rutgers Cooperative Extension

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POTATO (WHITE) INTEGRATED WEED MANAGEMENT FIELD GUIDE

Year Prior to Planting Potatoes

If mechanical analysis of soil texture has never been done or if cropping patterns significantly change or significant erosion occurs, obtain a soil sample as instructed below and submit to a lab for analysis of soil texture.

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 mechanical analysis of texture and analysis of Cation Exchange Capacity (CEC), organic matter (OM), and pH.	With this information an integrated weed management program can be designed using cultural and/or chemical controls for each soil type in a field. Soil type and pH differences within a field affect rate of application, carryover and other interactions.	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 to determine weed potential for next season's potato crop.

Weeds	Sampling	Threshold	Notes
Horsenettle, Groundcherry Yellow Nutsedge, Canada Thistle, Common Milkweed, Hemp Dogbane, Bindweed spp., Johnsongrass, Quackgrass, Bermudagrass (277, 1326)*	Scout 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	Select control measures to eradicate these perennials for the next cropping season. See "Postharvest Perennial Weed Control" for treatment options. (292)
summer annuals, Black Nightshade, Hairy Nightshade, 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 predominate in one area of the field or are scattered throughout the field.	Nightshades: presence Others: <u>Number of weeds per 10 ft. of row or 1 sq. yd.</u> < 1 weed = very light 1-4 weed = light 4-10 weeds = medium 10-100 weeds = heavy > 100 weeds = very heavy	Untreated check provides most reliable information for planning the weed control strategy for the coming season.

Production Year

Pre-planting Decisions

1. Use the information obtained in the previous year's scouting to select recommended controls for those weeds.
2. Use the map of perennial or noxious weeds to determine if these weeds were controlled with the fall program.
3. Match preplant incorporated and preemergence herbicide rates to soil type and percent organic matter in each field. (292)

Shoots 3 - 6 inches in Height

Weeds	How to Sample	When	Threshold										
Zero Tolerance Weeds (ZTW) = 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. 10 ft. of row in another 5 random locations. Identify species, count # of each weed species. Map location of ZTW. Determine whether weeds are predominantly within the row or between rows.	2 - 3 weeks after drag-off	<table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left; border-bottom: 1px solid black;"># weeds/10 ft. row or 1 sq. yd.</th> <th style="text-align: left; border-bottom: 1px solid black;">Action</th> </tr> </thead> <tbody> <tr> <td>ZTW: Presence</td> <td>Control required</td> </tr> <tr> <td>Summer annuals: < 0.25 weed</td> <td>None</td> </tr> <tr> <td style="padding-left: 20px;">0.25 - 1 weed</td> <td>Control may be required</td> </tr> <tr> <td style="padding-left: 20px;">> 1 weed</td> <td>Control required</td> </tr> </tbody> </table> Whether weeds are within the row or between the row determines if cultivation will be an effective control.	# weeds/10 ft. row or 1 sq. yd.	Action	ZTW: Presence	Control required	Summer annuals: < 0.25 weed	None	0.25 - 1 weed	Control may be required	> 1 weed	Control required
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All Weeds	Same as above.	1 week - 10 days after control measures are implemented	This information is used to evaluate how well controls worked.										

Four to Six Weeks after Planting (June 1 - 15)

Weeds	Sampling	Frequency	Threshold										
ZTW (see above) Summer Annuals (277, 1326)	Sample 1 sq. yd. in 5 random locations and 10 ft. of row in another 5 locations. Note whether these weeds are predominantly within the row or between rows.	Once during the period from June 1 to June 15.	<table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left; border-bottom: 1px solid black;"># weeds/10 ft. row or 1 sq. yd.</th> <th style="text-align: left; border-bottom: 1px solid black;">Action</th> </tr> </thead> <tbody> <tr> <td>ZTW: Presence</td> <td>Control required</td> </tr> <tr> <td>Summer Annuals: < 0.25 weed</td> <td>None</td> </tr> <tr> <td style="padding-left: 20px;">0.25 - 1 weed</td> <td>Control may be required</td> </tr> <tr> <td style="padding-left: 20px;">> 1 weed</td> <td>Control required</td> </tr> </tbody> </table>	# weeds/10 ft. row or 1 sq. yd.	Action	ZTW: Presence	Control required	Summer Annuals: < 0.25 weed	None	0.25 - 1 weed	Control may be required	> 1 weed	Control required
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End of June to First of July

Procedure	Sampling	Frequency	Threshold	Notes
All Weeds	Sample 1 sq. yd. in 5 random locations and 10 ft. of row in another 5 locations. Note whether these weeds are predominantly within the row or between rows.	Once at the end of June to the first week of July to determine if controls worked.	Same as listed above.	The purpose of this scouting is to determine how well the controls instituted after the last scouting worked. If above threshold weeds still persist, a cleanup operation will be required.

Preharvest

Weeds	Sampling	Frequency	Threshold	Notes
Perennial Weeds: Horsenettle, Groundcherry, Yellow Nutsedge, Canada Thistle, Common Milkweed, Hemp Dogbane, Bindweed spp., Johnsongrass, Bermudagrass	Scout one square yard and 10 ft. of row in 10 locations in the field. Map location of these weeds.	Once, prior to harvest.	presence	This information is used to determine if a harvest aide is needed to burn off weeds that would interfere with harvest. The information can also be used to determine if a fall treatment is required to control perennial weeds.

*Bolted 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 Agent for additional information or assistance.