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Michigan State University Extension Service

IPM Facts

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Issued December 1992

2 pages

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What is a Perennial Weed?

A perennial weed is any weed capable of surviving for three or more years. Perennial weeds are characterized by vegetative reproduction. Vegetative reproduction in these species is due to (a) rhizomes, underground creeping stems commonly found in perennial grasses, (b) stolons, prostrate stems or runners on the soil surface with roots at the nodes, (c) creeping roots, (d) tubers, underground enlarged storage stems, or (e) bulbs, underground storage organs consisting of a stem axis covered with many overlapping leaf scales.

Perennial weeds may or may not reproduce by seed. They always, however, have the potential to reproduce by vegetative means.

Description of Jerusalem Artichoke

Jerusalem artichoke grows from characteristic white tubers that form on the tips of the roots. The stems of the plant are rough-hairy, branch near the top, and can reach a height of 9 feet. Leaves are large with a rough upper surface, hairy lower surface, and can vary from egg-shaped to lance-shaped. Leaf edges are saw-toothed. Flowers are daisy-like with yellow centers and petals, and are 2 inches in diameter. Seeds are flattened, wedge-shaped, smooth, and often mottled with

black. In addition to tubers, Jerusalem artichoke can also reproduce from rhizomes, creeping rootstocks, and seeds.

Jerusalem artichoke can be found in moist fence rows, roadsides, woods, and can be very troublesome in cultivated fields.

Methods of Control

Methods of perennial weed control fall into three categories. These categories are (a) cultural, such as crop rotation, (b) mechanical; tillage including various implements such as plows, disks, or cultivators, and (c) chemical, using herbicides. Control of perennial weeds may require a combination of all these methods. Consider the energy and environmental implications when choosing a method of control.

Mechanical Control

Mechanical control may increase or decrease perennial weed infestations. Tillage may increase infestations by moving perennial weeds to new areas of the field or breaking dormancy of underground buds result-

ing in new shoot growth. Tillage during cool, wet conditions results in reduced control.

Tillage may decrease perennial weed infestations if done frequently enough to deplete underground root reserves. The field should be tilled every two or three weeks. Warm, dry soil conditions increase the effectiveness of tillage for perennial weed control by drying plant roots on the soil surface.



Chemical Control of Jerusalem Artichoke

Soybeans

<u>Herbicide</u> ¹	<u>Rate</u>	<u>Timing</u> <u>(Weed height)</u>	<u>Effectiveness</u>
Roundup	Rope-wick ²	POST (10-20")	Fair-Good
Classic ³ + NIS ⁴	3/4 oz/A + 1/4%	POST (8")	Good
Pursuit + 28% N + NIS ⁴	1/4 pt/A + 1 qt/A + 1/4%	POST (6-10")	Good

¹ These treatments control topgrowth only.

² Roundup can be applied with a ropewick more than once during the growing season if new Jerusalem artichoke plants reemerge or all plants are not above the soybean canopy at the time of the ropewick application.

³ Do not use Classic if soil pH is greater than 7.0.

⁴ NIS=nonionic surfactant

Corn

<u>Herbicide</u>	<u>Rate</u>	<u>Timing</u> <u>(Weed height)</u>	<u>Effectiveness</u>
Stinger	1/2 pt/A	3-5 Leaf	Fair - Good
Beacon ³	0.76 oz/A	3-4"	Fair - Good
Banvel ¹	1/2 pt/A and repeat	6" ²	Fair
Banvel + 2,4-D amine ¹	1/4 pt/A + 1/2 pt/A and repeat	6" ²	Fair
2,4-D amine ¹	1 pt/A and repeat	6" ²	Fair

¹ Two applications of any treatment are required for adequate results. These treatments may need to be repeated for 2 or more years. The second application will probably require a directed treatment.

² Treatments should be made when Jerusalem artichoke is 6 inches tall and repeated when the regrowth is 6 inches tall. The second application will probably require a directed treatment.

Spot Treatments and Between Crops

<u>Herbicide</u>	<u>Rate</u>	<u>Timing</u> ¹ <u>(Weed growth stage)</u>	<u>Effectiveness</u>
Roundup	2%	Spot treatment (bud stage)	Fair-Good
Roundup	3 qt/A	Bud to bloom stage	Fair-Good
Banvel	2 qt/A	Bud to bloom stage	Fair-Good
2,4-D ester	2 qt/A	Bud to bloom stage	Fair-Good

¹ Retreatment is usually required for complete control.

This bulletin was originally prepared with the support of the U.S. Department of Energy, Grant No. DE-FG0276CS60204. However, any opinions, findings, conclusions or recommendations expressed herein are those of the author(s) and do not necessarily reflect the views of DOE.

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