

Crop Profile for Horseradish in Illinois

Prepared February 2000

General Production Information

Area grown:	12-1300 acres
Number of growers:	20 (approximately)
Yield per acre:	4-8000 pounds of roots
Price per pound:	\$0.35-0.75 per pound
Share of total US crop:	65 percent
Value of Production:	\$2.5 million

About 5 percent of all horseradish is produced without pesticide input. Market for the crop is principally the US. The market is primarily for precessed condiment.

None of the Illinois crop is marketed outside the US.

Horseradish is a long season annual crop grown for its thickened root. Vegetatively propagated root pieces are planted in from late March to mid May. Root pieces root pieces 8 to 15 inches long and one-quarter of an inch in diameter are used. Fields are thoroughly prepared by tillage after which crop rows are marked with a mechanical device, and the pieces then planted by hand. The soil is then ridged mechanically to cover the root pieces. Harvest occurs in early November. The field is first mowed to remove the plant tops. The vegetation is raked to the side or removed and the field is harvested with mechanical digging devices.

The field is harvested with mechanical digging devices, usually modified potato diggers, and the roots are loaded onto hauling wagons. Wagons are dumped onto sorting lines in which excess soil is tumbled off and larger root pieces are graded out. Sets are snapped off by hand from the parent root and are set aside and stored in coolers or in outdoor pits over the winter for use in replanting the fields the next spring. No treatment is applied to stored root pieces. This crop is primarily rotated with field corn and soybeans, sometimes with vegetable crops.

Insect Pests

The principal insect causing problems in horseradish is the beet leafhopper. Because it vectors the "Brittle Root" disease the threshold for tolerance to this pest by the grower is very low. If more than a dozen insects are discovered during the weekly area field scouting program, nearly every field will be treated for the pest. In problem years, nearly 70-85 percent of acreage is treated with an insecticide for control of this pest. No cultural controls for this insect exist.

Some cabbage, striped and horseradish flea beetle infestations do occur but are infrequent and seldom are found at a level requiring treatment. However, emerging shoots after planting can be heavily damaged at times by flea beetles. No cultural controls for this insect exist.

Diamond back moth and False Chinch Bug can reach damaging thresholds and are also included in scouting tallies.

Imported crucifer weevil is considered a minor pest, and best controlled by cultural methods of crop rotation and management of volunteer plants. Sets can be soaked with a solution of Pounce (25WP, 3.2EC) or Ambush prior to planting in the field, or field sprayed prior to the egg deposition period.

1. Cythion and Sevin are registered for control of beet leaf hopper and chinch bugs.
2. Sevin (4F, 50W, 80 WSP, 80S, XLR) is also used for control of the flea beetle species and leafhoppers infestations.
3. Bt (Javelin) and Malathion 57EC, and Cythion are used for Diamond Back Moth control, though control measures are used only when populations warrant treatment.

Other registered insecticide products include:

- Lannate LV (aphid/thrip control)
- Biobit XL, HP (Bt material)
- XentTari (Bt material)
- Deadline Bullets (metaldehyde)

Diseases

There are limited leaf blights, spots (cercospora, white rust) that affect various horseradish strains. These are typically at non-economic levels, though weather conditions may warrant treatment. Soil born verticillium is an important root disease and is currently being addressed by varietal resistance and by

the use of soil fumigation. The following fungicides are registered for use on horseradish:

- Ridomil 2E
- 50W
- Gold EC
- Gold WSP
- Telone C-17 and Telone 2 are currently used on about 10% of the crop as a soil fumigant, primarily for the control of soil born fungi and nematodes in problem areas.

Weeds

Weeds which are targets of control include pigweeds, lamsquarters, ragweeds, foxtails, black nightshade, yellow nutsedge, annual morningglory, and Johnsongrass and field bindweed. If herbicides are not available the cost of production would increase greatly because growers would be required to substitute much additional hand hoeing. Mechanical cultivation is used and is effective for between-row weeds, however the ridge culture system prevents soil covering of weeds, making in-row weed control difficult by cultivation.

1. Goal 2 XL herbicide is widely used. Presently about 95% of all farmers use this product. There is much concern about the loss of this product as it is the only one which currently has a label for soil application for horseradish. It is typically used at planting at a rate of .5 lb active ingredient per acre.
2. Roundup Ultra is labeled for horseradish and is used to control existing vegetation before and after planting but before the crop emerges.
3. Poast 1.5E currently has a Section 18 for and is used for control of grasses in late May and through June. The continued availability of this product is unknown. It is currently in the IR-4 process.
4. Dual has been evaluated thru the IR-4 program for weed control and it appears to have a good fit. It does not have a registration for horseradish to date and may not for some time to come.
5. Fields are extensively tilled to remove weeds prior to planting.
6. All fields are hand hoed 3 to 4 times per season to remove weeds in the mid and latter part of the growing season as Goal preemerge effectiveness diminishes, and to remove weed escapes early in the season.

Contacts

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Database and web development by the [NSF Center for Integrated Pest Management](#) located at North Carolina State University. All materials may be used freely with credit to the USDA.