

# Occurrence of Horseradish Diseases in Illinois in 2002

M. Babadoost

Department of Crop Sciences, University of Illinois, Urbana, IL 61801

E-mail: babadoos@uiuc.edu

## *Introduction*

Approximately 50% of total commercial horseradishes produced in the United States are grown in Illinois. A survey was conducted in 2002 to assess the incidence and severity of diseases in commercial horseradish fields in the Mississippi River valley in southwest Illinois, the major horseradish producing area in the state.

## *Materials and Methods*

In September 2002, 12 horseradish fields in the Mississippi River valley area were surveyed for the incidence and severity of diseases (Table 1). The fields were selected based on the location, crop history, and crop variety. In each field, 10 locations were selected by walking across the longest diagonal of the field. At each location, severity of diseases on the foliage was assessed in an area approximately 36 sq ft. Foliage diseases were identified based on the disease symptoms. Also, at each location, five plants were dug up (a total of 50 plants per field) and severity of discoloration in core, vascular, and cortex areas of the roots was assessed. To confirm field diagnosis, infected leaves and roots were collected and examined in the laboratory.

## *Results*

Turnip mosaic (TM), Alternaria leaf spot, Cercospora leaf spot, leaf blight, brittle root, root rot, and root discoloration were observed in the fields surveyed (Table 1). The rates of severity of TM on the leaves ranged from 7.5 to 16.5% (ave. 11.8%). Severity of Alternaria and Cercospora leaf spots was evaluated together because it was difficult to accurately identify these diseases from each other in the field. Severity of these diseases ranged from 1 to 7.5% (ave. 4.8%). The incidence of leaf blight (percent of leaves died) ranged from 6.5 to 16.5% (ave. 10.5%). Leaf blight was caused by TM, Alternaria leaf spot, Cercospora leaf spot, and/or leaf senescence.

Brittle root was observed only in two fields and its overall incidence was less than 1%. Root rot was observed in three fields with highest incidence of 4%. Discoloration of vascular (peppered root), core, and cortex areas was observed in most of the fields surveyed. The incidence of discoloration in vascular (peppered root), core, and cortex areas, ranged from 0 to 56% (ave. 10.2%), from 0 to 14% (ave. 5.2%), and from 0 to 20% (ave. 4.2%), respectively.

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Table 1. Occurrence of horseradish diseases in the commercial fields in Illinois in 2002<sup>z</sup>.

Field	Cultivar	Soil fumigation	Disease incidence and severity (%) <sup>x</sup>												
			Crop rotation <sup>y</sup>				Turnip mosaic (sev.)	Alternaria/Cercospora leaf spot (sev.)	Leaf blight (inc.)	Brittle blight (inc.)	Halo root (inc.)	Root rot (inc.)	Peppered root (inc.)	Core discolor (inc.)	Cortex discolor (inc.)
			1999	2000	2001	2002									
2002-1	1038	N	SB	SB	SC	HR	12.0	5.0	8.5	6	2	0	40	6	0
2002-2	647	N	---	UP	AL	HR	15.5	5.0	7.0	0	6	2	6	2	2
2002-3	1590	N	---	FC	SB	HR	10.5	5.0	16.5	0	4	0	0	4	4
2002-4	1573	N	---	FC	SB	HR	12.5	4.0	13.0	2	2	0	0	0	0
2002-5	7586	N	HR	FC	SB	HR	16.5	8.0	11.5	0	30	0	4	0	0
2002-6	9705	N	---	---	---	HR	9.5	7.5	11.0	0	0	0	2	0	2
2002-7	1722	N	---	FC	SB	HR	7.5	5.0	6.5	0	2	0	4	6	4
2002-8 <sup>w</sup>	1573	N	---	----	-----	HR	11.5	4.5	6.5	0	2	4	2	14	2
2002-9 <sup>5</sup>	1573	N	FC	FC	WT	HR	9.5	5.0	11.5	0	2	2	6	10	20
2002-10	1573	N	---	----	SB	HR	12.0	1.0	9.0	0	14	0	56	6	2
2002-11	1573	N	---	FC	FC	HR	13.0	1.5	11.0	0	0	0	0	6	12
2002-12	1429	N	HR	SB	FC	HR	12.0	6.0	14.5	0	0	0	2	8	2
<b>Average</b>							<b>11.8</b>	<b>4.8</b>	<b>10.5</b>	<b>0.7</b>	<b>5.3</b>	<b>0.7</b>	<b>10.2</b>	<b>5.2</b>	<b>4.2</b>

<sup>z</sup> Results of a field survey conducted in September 2002.

<sup>y</sup> FC=field corn; SC=sweet corn; SB=soybean; HR=horseradish; UP=unplanted; AL=alfalfa; and WT=wheat.

<sup>x</sup> Inc.=incidence, percent plants affected; Sev.=severity, percent leaf or root area affected.

<sup>w</sup> Never previously planted to horseradish.