

Resistance of radish cultivars to Rhizoctonia root and hypocotyl rot and clubroot, 2007.

Nine radish cultivars were evaluated for resistance to Rhizoctonia root and hypocotyl rot and clubroot in a field trial at the Ohio Agricultural Research and Development Center Muck Crops Agricultural Research Station, Celeryville, OH on Linwood muck soil, pH 5.9. Fertilizer (18-17-17, 500 lb/A) was broadcast and incorporated into the test field on 2 May. The field was disked and leveled, and raised beds were prepared on 18 Jun. Radishes were direct seeded, and the herbicide Dual II Magnum was applied at 1 qt/A on 26 Jun. Cultivars were arranged in a randomized complete block design with four replications. Each plot consisted of three, 20 ft rows seeded at a rate of 10 seeds/ft. The field was overhead irrigated with 0.7, 0.5, 0.4, and 0.7 in. water on 26 and 29 Jun, 2 and 13 Jul, respectively. The insecticide Sevin XLR Plus was applied on 12 and 17 Jul at the rate of 1 qt/A. Radishes were harvested from a 10 ft section in the center row for each treatment on 24 Jul and the number of marketable radishes, radishes with Rhizoctonia root rot symptoms, radishes with clubroot, healthy culls and damaged culls were recorded. Average maximum temperatures for 26-30 Jun and 1-24 Jul were 82.1 and 81.0°F; average minimum temperatures were 61.9 and 56.6°F and rainfall amounts were 0.26 and 1.22 in., respectively. Data were analyzed by ANOVA using SAS statistical software. Means were separated using Fisher's protected least significant difference test.

Disease pressure for both Rhizoctonia root and hypocotyl rot and clubroot was low to moderate in this trial. There were no statistically significant differences among cultivars in incidence of Rhizoctonia, incidence and severity of clubroot, number of culls or marketable yield.

Cultivar	Seed supplier	% Rhizoctonia	% clubroot	Clubroot severity*	Marketable yield (no./plot)
Red Silk	Harris Moran Seed Company.....	2.5 a**	5.0 a	1.2 a	48.3 a
Red Dawn	Harris Moran Seed Company.....	14.0 a	7.1 a	1.4 a	51.0 a
HMX 7760	Harris Moran Seed Company.....	3.3 a	16.0 a	5.7 a	51.0 a
Red Satin	Harris Moran Seed Company.....	0.9 a	8.2 a	2.1 a	64.3 a
Red Castle	Harris Moran Seed Company.....	2.3 a	6.3 a	2.1 a	55.8 a
XRA 3541	Sakata Seed America, Inc.	7.1 a	5.9 a	1.5 a	40.0 a
XRA 3505	Sakata Seed America, Inc.	1.1 a	8.3 a	3.2 a	31.8 a
XRA 3540	Sakata Seed America, Inc.	6.7 a	6.7 a	2.1 a	52.6 a
XRA 2520	Sakata Seed America, Inc.	18.7 a	7.2 a	1.9 a	39.0 a
<i>P</i> value		0.6746	0.3166	0.2230	0.3540

*Severity of clubroot was assessed on a 1-5 scale where 1 (healthy) = 0% disease; 2= 1-25 % disease; 3= 26-50% disease; 4= 51-75% disease; and 5= 76-100% disease. Severity = $[\sum(\text{category midpoint} \times \text{number of plants in category})]/n$, where n = total number of plants harvested.

**Values are the means of four replicate plots; means followed by the same letter within a column are not significantly different at $P \leq 0.05$. Means were separated using Fisher's protected least significant difference test.