



Fungicidal Management of Alternaria Leaf Spot on Parsley

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Florida is one of the nation's leaders in terms of fresh market parsley production, with much of this acreage being located on the organic soils of the Everglades Agricultural Area in Palm Beach County. Although Septoria leaf spot, caused by *Septoria petroselini*, and powdery mildew, incited by *Erysiphe heraclei*, are occasional problems, Alternaria leaf spot, caused by *Alternaria radicina*, has become a perennial problem. Capable of surviving on infested seed for a number of years, the pathogen may also become resident in the soil, surviving as microsclerotia. Unlike the survival stage of another sclerotia-forming fungal pathogen common in the area, *Sclerotinia sclerotiorum*, microsclerotia of this particular pathogen do not appear to be easily controlled by flooding, a common offseason cultural practice in the Glades.

To assist growers in learning how to manage this economically important parsley disease, two fungicide trials were conducted during the spring of 2010. Parsley of the variety 'Dark Green Italian' was planted in a 0.5-acre field at the Everglades Research and Education Center in Belle Glade on 24 Jan. Parsley was direct-seeded in two rows with a 12-inch row spacing on top of 6-inch raised beds formed on 3-ft centers. Each experiment consisted of a randomized complete-block design with four replications of 10 treatments. Experimental units were 2-row 15-ft bed sections, separated on the end by 5-ft alleys. Non-sprayed guard beds bordered each experimental unit and served as inoculum spreader rows. Chemical treatments were applied using a CO₂ backpack sprayer. The hand-held boom was equipped with three Tee-Jet 11002 flat-fan nozzles. Foliar sprays were applied at 30 psi, delivering a spray volume of 60 gal/acre. Fungicide treatments were applied on 24 and 31 Mar. and 5 Apr. Disease pressure arose from natural inoculum evenly distributed within guard beds on 22 Mar.

Disease was assessed visually by estimating the percentage of foliage exhibiting necrotic lesions on 15 and 19 Apr. Leaf spot was rated on a 0 to 10 scale on 19 Apr., with 0 representing no disease and 10 representing the level of disease in the untreated check. Results are shown in Table 1. All fungicide treatments provided for significant disease control. In Trial 1, Luna Sensation, Rovral, and the strobilurin fungicides Cabrio and Quadris provided the most efficacious control, followed by the broad-spectrum fungicide Bravo, Endura, Switch and Propimax, in

that order. In Trial 2, LEM17 and the strobilurin Evito provided the best control, followed by YT669, LBG-61, and Bravo, which provided moderate levels of control. Kocide and Serenade Max provided significant control but were not as efficacious.

While several of these products are experimental at this time, these results should prove useful in selecting fungicides to manage this important disease. It is highly recommended that fungicides of dissimilar mode of action be alternated or tank-mixed in order to slow or prevent resistance to certain classes of fungicides. Use or mention of a particular product in these trials does not constitute an endorsement.

Table 1.

Fungicide treatment and rate/acre	% Disease severity		Leaf spot rating
	15 Apr.	19 Apr.	
<i>Trial 1</i>			
Untreated check	13	39	10.0 a ^z
Luna Sensation 500SC 5.0 fl oz	2	3	1.5 e
Luna Sensation 500SC 7.6 fl oz	1	1	0.6 f
Rovral 4F 2.0 pt	1	3	1.1 ef
Cabrio EG 12.0 oz	2	2	1.2 ef
Quadris 2.08SC 15.2 fl oz	2	2	1.3 e
Bravo Ultrex 82.5WDG 1.5 lb	2	6	2.5 d
Switch 62.5WG 14.0 oz	3	10	4.0 b
Propimax 3.6EC 4.0 fl oz	3	17	4.5 b
Endura 70WG 4.5 oz	4	7	3.1 c
<i>Trial 2</i>			
Untreated check	14	42	10.0 a
Bravo Ultrex 82.5WDG 1.5 lb	2	6	2.5 d
LEM 17 200EC 24.0 fl oz	1	2	1.3 e
YT669 2.08SC 12.0 fl oz	1	4	2.3 d
Prosaro SC 7.0 fl oz	1	8	4.0 c
LBG-61 3.0 pt	2	5	2.4 d
Evito 500SC 5.7 fl oz	1	2	1.3 e
Kocide 3000 2.0 lb	2	14	5.6 b
Gem 500SC 3.0 fl oz	3	8	3.4 c
Serenade Max WP 3.0 lb	4	16	6.0 b

^zNumbers in a column followed by a letter in common are not significantly different as determined by Fisher's LSD at $P \leq 0.05$.