

Common Ragweed: A New Host of *Pseudomonas syringae* pv. *tagetis*

D. J. STYER, Research Assistant, Department of Plant Pathology, and R. D. DURBIN, Research Leader, Plant Disease Resistance Research Unit, ARS, USDA, and Professor, Department of Plant Pathology, University of Wisconsin, Madison 53706

ABSTRACT

Styer, D. J., and Durbin, R. D. 1982. Common ragweed: A new host of *Pseudomonas syringae* pv. *tagetis*. Plant Disease 66:71.

Pseudomonas syringae pv. *tagetis*, the causal agent of marigold leaf spot, has been found in several regions of Wisconsin infecting common ragweed, *Ambrosia artemisiifolia*. The symptoms consist of leaf spots surrounded by chlorotic halos and apical chlorosis.

Marigold (4) and sunflower (1) have previously been reported as natural hosts for *Pseudomonas syringae* pv. *tagetis* (Hellmers 1955) Young, Dye & Wilkie 1978. During the summer of 1980, the bacterium was isolated from common ragweed (*Ambrosia artemisiifolia* L.) and identified as described earlier (4). Plants

Accepted for publication 22 September 1981.

The publication costs of this article were defrayed in part by page charge payment. This article must therefore be hereby marked "advertisement" in accordance with 18 U.S.C. § 1734 solely to indicate this fact.

This article is in the public domain and not copyrightable. It may be freely reprinted with customary crediting of the source. The American Phytopathological Society, 1982.

from three areas in southern and central Wisconsin exhibited the two symptoms typically found on marigold: leaf spots with chlorotic halos and apical chlorosis (3). However, unlike marigold, the chlorotic apex became necrotic if the plants had been infected at the seedling stage and were growing in poor soil.

The bacterium was recovered from this necrotic tissue merely by gentle immersion in water, indicating that it may be an important source of inoculum. Pathogenicity of the isolates was demonstrated by spray inoculating 18-day-old ragweed plants in a greenhouse at 28 C. Inoculated plants exhibited both leaf spots and apical chlorosis. Additionally, plants of

marigold cultivar Moonshot exhibited the same symptoms following inoculation with these isolates, as well as with isolates obtained from sunflower.

Pseudomonas syringae pv. *tagetis* has now been found naturally on three hosts, all in the Compositae: marigold (*Tagetes erecta* L. and *T. patula* L.), sunflower (*Helianthus annuus* L.), and common ragweed. These genera are placed in two tribes (Tageteae for the first host and Heliantheae for the remaining two hosts [2]); other members of this family may be natural hosts of the pathogen.

LITERATURE CITED

1. Gulya, T. J. 1981. Apical chlorosis of sunflower incited by *Pseudomonas tagetis*. (Abstr.) Phytopathology 71:221.
2. Heywood, V. H., Harborne, J. V., and Turner, B. L., eds. 1977. The Biology and Chemistry of the Compositae. Academic Press, New York, 1,189 pp.
3. Styer, D. J., and Durbin, R. D. 1981. Symptoms of bacterial leaf spot of marigold. (Abstr.) Phytopathology 71:259.
4. Styer, D. J., Worf, G. L., and Durbin, R. D. 1980. Occurrence in the United States of a marigold leaf spot incited by *Pseudomonas tagetis*. Plant Dis. 64:101-102.