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Department of Plant
Phytopathology

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wheat. L. A.
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planting costs,
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emergence. Incidence of product sporulation and amount of spores produced were determined weekly for four weeks after each application. Results indicate significant differences among application dates. Applications before June had little sporulation. Optimal sporulation within one week occurred for applications during July and August following canopy closing. Prior to application, an environment favorable for fungal growth is required for optimal dispersal from the biocontrol formulations.

Wilt/decline of *Acacia koa* caused by *Fusarium oxysporum* in Hawaii. R. L. JAMES (1), N. S. Dudley (2), and R. Sniezko (3). (1) USDA Forest Service, Forest Health Protection, Coeur d'Alene, ID 83815; (2) Hawaii Agriculture Research Center, Aiea, HI 96701; (3) USDA Forest Service, Dorena Genetic Resource Center, Cottage Grove, OR 97424. *Phytopathology* 97:S168.

An important wilt/decline disease of native *Acacia koa* was first described in Hawaii in 1985; the disease currently causes varying impacts on the four major Hawaiian Islands: Oahu, Kauai, Maui, and Hawaii. Disease etiology was investigated using Koch's Postulates; *Fusarium oxysporum* was repeatedly shown to cause disease symptoms. Other *Fusarium* spp., particularly *F. solani*, are also commonly isolated from diseased trees. Large survival differences among koa families in young field trials on infested sites indicate that genetic variation in disease resistance likely exists. Current efforts are underway to determine biological and non-biological factors associated with disease severity, determine disease intensity and impact throughout Hawaii, assess genetic variation and develop molecular markers for detecting and monitoring pathogens associated with the disease, and develop/implement screening protocols to rapidly evaluate a large number of koa families for genetic resistance to this disease.

Secondary spread of *Verticillium* wilt in perennial mint fields: Evidence from spatial analysis. D. A. JOHNSON (1), H. Zhang (2), and J. R. Alldredge (2). (1) Dept. of Plant Pathology, Washington State University; (2) Dept. of Statistics, Washington State University, Pullman, WA 99164. *Phytopathology* 97:S168.