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Enhancement of herbicide activity by *Alternaria angustiovoidea*

J. G. JORDAHL, L. J. FRANCL, K. M. CHRISTIANSON, and R. G. LYM

Departments of Plant Pathology and Crop and Weed Sciences, North Dakota State University, Fargo, ND 58105.

Eight postemergent herbicides for leafy spurge control were tested on greenhouse-grown plants with or without the foliar pathogen, *Alternaria angustiovoidea.* Plants were inoculated with 100,000 conidia of isolate 85-7921, held in a moist chamber for 24 hours, and returned to the greenhouse. One day later, plants were sprayed with sublethal rates of picloram, 2,4-D, picloram+2,4-D, glyphosate, glyphosate+2,4-D, dicamba, imazaquin, or imazethapyr. Plants were rated for percent defoliation 11 days after applying the herbicides. *A. angustiovoidea* alone caused 22% defoliation, not significantly different ($P <= 0.01$) than picloram, dicamba, glyphosate, imazaquin, and imazethapyr without the fungus. The activity of these herbicides as well as picloram+2,4-D was enhanced by pretreatment with *A. angustiovoidea.* Glyphosate+2,4-D and 2,4-D alone exhibited high rates of defoliation (85-95%) and were not affected by the fungus. In a separate experiment where reduced rates of 2,4-D were applied one week before *A. angustiovoidea,* there was an additive interaction between herbicide and fungus for percent damage and reduction of regrowth. The combination of a fungal biocontrol agent and herbicide may permit reduced chemical rates while maintaining equivalent leafy spurge control.