KIRK, WILLIAM W.[1]*, LINDA E. HANSON[1&2] and CHRISTY L. SPRAGUE[3], [1]Michigan State University, Department of Plant Pathology, East Lansing, MI 48824, [2]USDA-ARS, SBRU, 494 PSSB, East Lansing, MI 48824 and [3]Michigan State University, Department of Crop and Soil Sciences, East Lansing, MI 48824. **Glyphosate and fungicide effects on *Cercospora* leaf spot in four glyphosate-resistant sugar beet (*Beta vulgaris*) varieties.**

ABSTRACT

Glyphosate has been shown to reduce foliar diseases in soybean and wheat. In fact, currently there is a patent application for a synergistic combination of glyphosate and a fungicide for disease management. Cercospora leaf spot (*Cercospora beticola*) is one of the most significant disease problems in Michigan sugar beet production. The recent commercialization of glyphosate-resistant sugar beet allows for the testing of glyphosate and glyphosate-fungicide combinations for the management of Cercospora leaf spot. The glyphosate-resistant sugar beet varieties, ACH 827RR, Hilleshog 9027, Hilleshog 9028, and Hilleshog 9029 were inoculated with *Cercospora beticola* for the development of Cercospora leaf spot. Four different herbicide treatments: 1) no herbicide (hand-weeded control), 2) a standard-split herbicide program (two applications of desmedipham & phenmedipham + triflusulfuron + clopyralid + non-ionic surfactant), 3) three applications of glyphosate, and 4) four applications of glyphosate were evaluated alone and in combination with a standard Cercospora fungicide program. Variety and fungicide main effects were significant for Cercospora leaf spot severity. However, regardless of the herbicide program Cercospora leaf spot severity was not affected. Therefore, results from the first year of this research indicate that glyphosate and glyphosate-fungicide combinations do not significantly contribute to Cercospora leaf spot control.