

SMITH, GARRY A.¹, LARRY G. CAMPBELL¹, and ARTHUR LAMEY^{2*}, ¹USDA, Agricultural Research Service, Northern Crop Science Laboratory, Fargo, ND 58105-5677, and Dept. of Plant Pathology, North Dakota State Univ., Fargo 58105-5012. Current status of triphenyltin hydroxide tolerance in *Cercospora beticola* in Minnesota and North Dakota.

Triphenyltin hydroxide (TPTH) has been used extensively since 1981 in southern Minnesota and the southern Red River Valley of Minnesota and North Dakota following the development of resistance to the benzimidazole fungicides. Bugbee first reported *Cercospora beticola* L. strains tolerant to TPTH that were isolated from sugarbeets grown in southern Minnesota in 1994. In 1995, Bugbee surveyed TPTH tolerance in leafspot samples submitted by agriculturists in the seven factory districts of southern Minnesota and the Red River Valley; from south to north they were Renville, MN; Wahpeton, ND; Moorhead, MN; Hillsboro, ND; Crookston, MN; East Grand Forks, MN and Drayton, ND. The highest level of TPTH tolerance was in the Renville factory district in southern MN, followed by the Wahpeton district in the southern Red River Valley. In the Renville district 96% of samples were tolerant to 0.2 ppm TPTH and 93% were tolerant to 1 ppm TPTH. In the Wahpeton district 82% of samples were tolerant to 0.2 ppm TPTH and 68% to 1 ppm TPTH. In the Moorhead district, 18% of samples were tolerant to 0.2% TPTH and 15% to 1 ppm TPTH. Only a few TPTH tolerant samples were found north of Moorhead in 1995. Surveys in 1996 by Smith and Campbell revealed that TPTH tolerance was much more common farther north than in 1995. In 1996, 96% of Renville samples were tolerant to 0.2 ppm and also to 1 ppm TPTH, 95% of Wahpeton samples were tolerant to 0.2 ppm TPTH and 90% to 1 ppm TPTH, 80% of Moorhead samples were tolerant to 0.2 ppm TPTH and 60% to 1 ppm TPTH, 70% of Crookston samples were tolerant to 0.2 ppm TPTH and 37% to 1 ppm TPTH and 42% of Drayton samples were tolerant to 0.2 ppm TPTH. In contrast to percent samples, the percent of leafspots with tolerance to 0.2 ppm TPTH ranged from 80% at Renville to 10% at Drayton.