

## BRIEF ARTICLES

XANTHOMONAS TRANSLUCENS ON WHEAT  
IN MANITOBA IN 1968<sup>1</sup>W.A.F. Hogborg<sup>2</sup>

The most severe outbreak of bacterial black chaff of wheat observed to date in Manitoba occurred south of Morris in 1968. Presumably its development was made possible by the unusually frequent rains that occurred in June and July. In the vicinity of Letellier and St. Joseph, only bacterial black chaff was present, but further south near Altona and Gretna, infection by *Leptosphaeria avenaria* f. sp. *triticea* Johnson was also present.

A sample of wheat plants affected by bacterial black chaff was collected by Dr. C. C. Gill on July 19 and August 1. On July 22, fields of 'Manitou' wheat (*Triticum aestivum* L.) in the milk stage were observed east and west of Letellier with 100% of the plants lesioned and 10 to 20% of the leaf area destroyed. Head discoloration occurred in a patchy distribution. One field of durum wheat (*Triticum durum* Desf.) was found 3 miles west of St. Joseph with 100% of the plants infected and 50% of the leaf area destroyed.

By August 1, the severity of leaf-area destruction was approaching 100% in the same area, and the disease was traced south to the border of North Dakota.

*Xanthomonas translucens* f. sp. *undulosa* (Smith, Jones & Reddy) Habg. was isolated from 'Manitou' wheat collected 1 mile west of St. Joseph, and *X. translucens* f. sp. *cerealis* Habg. from durum wheat collected 2 miles further west. *X. translucens* f. sp. *cerealis* was also isolated from quack grass (*Agropyron repens* (L.) Beauv.) and 'Manitou' wheat collected near Gretna, Manitoba.

From the proportion of photosynthesizing tissues destroyed by the bacterial infection, yield losses must have been substantial. For example, by measurement of the threshed grain in the bins, the yield in a 40-acre field of wheat at St. Joseph was estimated to be 18 bu/acre. A field about 10 miles north of the infected field was reported to yield 45 bu/acre, suggesting that the potential yield in the infected field may have been much higher than that obtained. There was no means of ascertaining the yield loss directly.

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Bacterial black chaff was also severe on the leaves in experimental plots of a number of wheat and triticale (*Secale cereale* x *Triticum durum*) varieties grown at Winnipeg by the Plant Science Department, University of Manitoba. At this locality, *X. translucens* f. sp. *undulosa* was isolated from eight collections of 'Triple Dirk', 'Pitic 62', 'Manitou', and an unnamed Mexican variety of wheat and from 'Rosner' triticale.

OVERWINTERING OF MELOIDOGYNE  
INCOGNITA IN SOUTHWESTERN ONTARIO<sup>1</sup>G.W. Bird<sup>2</sup>

*Meloidogyne incognita* (Kofoid and White, 1919), the southern root-knot nematode, is the most economically important nematode in the vegetable greenhouses of southwestern Ontario. In a study of three *Meloidogyne* spp., Sayre (1) found that *M. hincognita* failed to overwinter in bare soil, under a cover crop, or in the roots of peach and asparagus. Sayre's experiments were initiated in October and concluded in April. He added finely chopped infected roots to soil in 4-inch diameter drainage tiles buried in a cultivated field.

On May 4, 1967, a half-acre field plot at Harrow was fumigated with a mixture of 1, 3-dichloropropane, 1, 2-dichloropropane, and other related chlorinated C<sub>3</sub> hydrocarbons at 25 gal/acre. Twenty days later *M. incognita*-infested soil was placed in a 6-inch deep hole at each future seedling site. The plot was infested at the rate of 335 second-stage juveniles per square foot. Late tomato (*Lycopersicon esculentum* Mill., cv. Heinz 1350) seedlings were planted 2 days later. In October the tomatoes were heavily infected with *M. incognita* root-galls. On April 29, 1968, the plot was planted with susceptible lettuce (*Lactuca sativa* L., cv. Fulton). It was harvested on June 13, 1968. In an examination of the lettuce roots, no *M. incognita* root-galls were observed.

These field observations substantiate Sayre's conclusion that *M. incognita* does not overwinter in southwestern Ontario soils.

## Literature cited

1. Sayre, R.M. 1963. Winter survival of root-knot nematodes in southwestern Ontario. Can. J. Plant Sci. 43:361-364.

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