BARLEY YELLOW DWARF VIRUS IN MANITOBA IN 1964

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Barley yellow dwarf virus (BYDV) was found to be widespread throughout cultivated areas of tho province. During the survey reported here, attention was directed mainly to oats as this crop is considerod the best indicator crop among local field-grown cereals,

Positive transmission tests to confirm the presence of BYDV in cereals were obtained from selected fields near Melita, Holland, Rathwell, Carmen, Portage La Prairie, Winnipeg, Dauphin, Swan River and The Pas. About 80% of the positive tests were from oats and the remainder was evenly divided between wheat and barley. BYDV was also recovered from samples of Bromus inermis from Bowsman and Winnipeg and from Panicum capillare from Winnipeg.

Visual rating of tho disease in 27 oat fields showed 10%with no red leaf symptoms. Infection was a trace in 41%, slight in 19%, moderate in 26% and severe in 4%. One late-sown field of mixed wheat, oats and barley near Swan River had 70% of the plants infected. This seems to confirm that early sowing is one means of reducing damage by this virus.

Groups of 4 aphids of each of 5 species collected from cereals in 4 fields near Winnipeg on August 13 were allviruliferous, However, 34 similar sized groups of aphids collected from other areas over a period of 6 weeks before this date showed only 17% of the total samples to be viruliferous. No virus was found in large samples of tho greenbug taken from a heavily infested oat field near Elm Creek during July.

Six species of aphids were shown to be carrying BYDV in the field, namely, English grain aphid (Macrosiphum avenae), cornleaf aphid (Rhopalosiphum maidis), bird-cherry oat aphid (Rhopalosiphum padi), the greenbug (Schizaphis graminum), rose grass aphid (Metopolophium dirhodum) and quackgrass aphid (Sipha agropyrella). The first 4 mentioned were the most commonly encountered species on cereal crops. These species have previously been reported as vectors for BYDV in other parts of North America.

At least 3 different clones of each of the first; 5 above-mentioned aphid species have been cultured in the greenhouse. Tho relative transmission efficiency of these aphids for many of the virus isolates collected in the field is now being examined.

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