Ornamentals / Plantes ornementales

Crop / Culture: Elm

Location / Emplacement: Manitoba

Title / Titre: Incidence of Dutch elm disease in Manitoba in 1991

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METHODS: Results are based on 1,950 samples of American elm, Ulmus americana and Siberian elm, Ulmus pumila submitted to the Plant Pathology Laboratory from a survey conducted by the Manitoba Department of Natural Resources. Trees were selected for sampling and submissions to the laboratory on the basis of presence of wilted brown leaves and internal brown staining of the cambium. All samples submitted were cultured on potato dextrose agar medium and incubated for 7 days at 20°C. Fungal identifications were done after 7 days.

RESULTS: There were 1,950 elm trees showing symptoms of leaf wilt and vascular staining sampled in Manitoba in the 1991 survey. Branch samples were submitted to the Manitoba Agriculture Plant Pathology Laboratory for culturing. The results of the survey are presented in Table 1. Tree removals are also included as this indicates the real impact of Dutch elm disease (DED) in the areas sampled. In many areas where DED is prevalent only a few samples are taken to confirm presence of DED and surrounding elms with similar symptoms of trees with more than 50% of the crown dead are marked for removal. The sampling results do not give a full indication of the impact of DED in rural Manitoba as sampling and tree removals are concentrated in cities, towns and municpal parks, areas which have a cost sharing agreement with the Manitoba Department of Natural Resources.

Ninety-four percent (94%) of elms sampled were infected with DED caused by Ophiostoma ulmi (Ceratocystis ulmi). There were 1,151 trees in Winnipeg which were either confirmed in the laboratory as having DED or were highly suspect of being diseased. In addition, 4,775 trees were classified as hazard trees (ie: more than half dead from natural or disease causes and marked for removal). The 5,853 trees were marked for removal in 1991 is about 47% less than last years number of 11,040.

There were less trees marked for removal in the Brandon (-30%), Winnipeg (-47%), Central (-62%) and Eastern (-11%) regions in 1991. There was an increase in trees marked for removal in the interlake (73%) region. DED is now almost completely co-existent with the range of native American elm in Manitoba, except for elm trees in the Northwest part of the province north of Dauphin. The native range of American elm in Manitoba extends to The Pas.

Dothiorella dieback (Dothiorella ulmi) was found in 24 samples of American elm and Verticillium wilt (Verticillium spp.) was found in 31 samples of American elm.

The decrease in tree removals in 1991 was not entirely caused by a reduction in the incidence of DED but was also due to a sharp reduction in the budget allocated to the DED program.

INCIDENCE OF DUTCH ELM DISEASE IN MANITOBA IN 1991

AREA	TREES SAMPLED		TREES DISEASED		% INFECTED		TREES MARKED FOR REMOVAL		PERCENTAGE CHANGE
	1990	1991	1990	1991	1990	1991	1990	1991	
Winnipeg	1078	1151	960	1078	89	94	11040	5853	–47
Brandon	106	4	93	3	88	75	1515	1111	–30
Interlake	80	172	73	165	91	96	298	515	+73
Central	427	538	368	501	86	93	8153	3070	–62
Eastern	327	51	293	45	90	88	2948	2614	–11
Western	38	34	29	33	76	97	2071	2559	+24
Total	2056	1950	1816	1825	520	94	26025	15722	–40