Sclerotinia sclerotiorum on oil and fibre flax in Alberta

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Black sclerotia were found in early September, 1981, on and within the stems of fibre flax plants from research plots at the Alberta Agriculture Field Crops Station in Lacombe, Alberta. Sclerotia were also found by the co-author in oil seed flax plots at the neighbouring Canada Department of Agriculture Research Station. A review of the literature indicated that Sclerotinia sclerotiorum has not been previously reported on flax in Canada.

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Des sclerotes noires furent trouvees au debut de septembre 1981, sur et a l'interieur de tiges de plants de lin a fibre provenant de parcelles de recherche a la Station sur les grandes cultures d'Agriculture Alberta situee à Lacombe, Alberta. Des sclerotes furent egalement trouvees par le coauteur, dans des parcelles de lin à graines oléagineuses situees tout pres, à la Station de recherche d'Agriculture Canada. Une revue de la literature a indique que Sclerotinia sclerotiorum n'avait pas encore été signalé sur le lin au Canada.

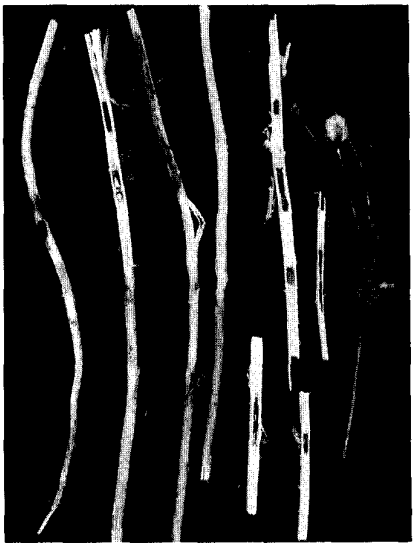

Figure 1. Sclerotia on stem surface (extreme left) and in the pith cavity of fibre/flax

Wilted flax plants were found scattered within the rows at the early flowering stage of growth in early August, 1981, on the fibre flax varieties Vlases, Natasja, Nynke, Dufferin and Reina. No symptoms were noted on the variety Hera. Vlases (15%) and Natasja (20%) were the most diseased, followed by Dufferin (10%). Nynke (8%) and Reina (3%). Towards the end of the flowering period, infected plants were pale brown in colour and were dried up. The sterns were easily shredded and the core of the stems contained many elongated sclerotia. Sclerotia were of variable size and shape and were white at first, and they turned black as they matured. Sometimes the sclerotia developed on the outer surface of the stems and more frequently they were found in the pith cavity of stems (Fig. 1). No sclerotia were found in the roots. Identification was confirmed at the Plant Pathology Laboratory in Winnipeg.

Sclerotinia sclerotiorum (Lib) de Barry is a non-specific pathogen causing infection of roots, stems, heads and seeds in a wide range of field, forage, vegetable and ornamental crops, as well as some herbaceous weeds (3). Cruciferae, Leguminosae and Solonaceae are the most important hosts. *S.* ***sclerotiorum*** has been reported on sunflowers (***Helianthus annus***) in Manitoba (2), and in other parts of Canada (1); on sweet clover (*Melilotus spp.*) in British Columbia, and on swedes and rape (***Brassica spp.***) (4).

Sources of primary inoculum may have come from sclerotia from diseased rapeseed plants grown in the previous year in plots near to the flax plots. The abundance of inoculum was evident by the very great amount of infection by *S.* ***sclerotiorum*** in this year's suinflower and lentils adjacent to the fibre flax plots. In view of the increasing acreage of new or special crops like rape, sunflowers, lentils and peas, all of which can be a host for this pathogen, this disease could be of economic importance to the future of a fibre flax industry in Alberta.

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Literature cited

1. Connors, I. L. 1967 - An annotated index of Plant Diseases in Canada. In Canada Department of Agriculture Research Publication 1251, 381 pp.
2. Hoes, J. A. 1969 - Sunflower Diseases in Manitoba in 1968. Canadian Plant Disease Survey 49: 27.
3. Price, K. and J. Colhoun. 1975 - Pathogenicity of Isolates of (Sclerotinia sclerotiorum) (Lib) de Barry to Several Hosts. Phytopathology Z. 83: 232 - 238
4. Sunflower Science and Technology 1978 - Agronomy No. 19 A.S.A., C.S.S.A., S.S.S.A., 505 pp.