Flax Diseases in Manitoba in 1958

W.E. Sackston and J.W. Martens

Flax was sown on 592,000 acres in Manitoba in 1958. Spring and early summer drought retarded germination and caused stands to be irregular in development; strong winds blew out the seed in many fields and made reseeding necessary. As a result, much of the crop was extremely late, but because of the unusually favorable fall weather, the crop produced remarkably good yields, averaging about 8.1 bushels per acre.

Diseases did relatively little damage to flax in 1958. Chlorosis was conspicuous in some fields, some 2,4-D damage was seen, traces of frost damage were observed, and some seedling blight was found in a few fields in an early survey made 10 July by the junior author, accompanied by A.L.D. Martin, Cereal Crops Section, of the Winnipeg Laboratory.

Aster yellows, which was very widespread and was responsible for a conservatively estimated loss in flax yield of 15% in 1957, was not significant in 1958. Traces of the disease were found in 23 of 35 fields examined in the early survey and in two subsequent short surveys; 2% of the plants were affected in 1 field.

The main survey, made 20 to 22 August, covered 43 fields, including a number in southeast Sask. No rust (Melampsora lini) was seen, and no Fusarium wilt (F. oxysporum f. lini) was found. A very few fields were later located with a light infection of rust in a special trip made by Dr. B. Peturson to the St. Claude area west of Winnipeg. Traces of pasmo (Septoria linicola) were located in 3 fields. Traces of seedling blight (Rhizoctonia solani, Pythium spp., etc.) were found in 3 fields, and traces of root rot, probably caused by the same organisms and possibly Fusarium spp. as well, were found in 4 fields.

Heat Canker (physiologic) affected traces of the plants in 10 fields, from 1 to 2% in 1 field, and 5% in 1 field. Top discoloration, top dieback, and obvious drought injury, all the result of environmental conditions, were seen in 4 fields.

Boll Blight (physiologic) was found in all but 6 fields, which were too green for the condition to be apparent. Traces to 10% of the bolls were affected in 9, from 15 to 25% in 20, and 25 to 30% in 8 fields.

Yellows (Aster yellows virus, California strain) affected traces of the plants in 7 fields, 2% in 1 field, and damaged 5% of the plants in plots at Portage la Prairie. Aster yellows infection was too erratic in plots at Winnipeg for reliable data to be taken on varietal reactions in tests sown for the purpose.

Other Observations

RUST (Melampsora lini). Thirty-eight fields were examined in s. Alta. Traces of rust were found in two fields. One field of Redwing flax was severely infected (J.S. Horricks). Rust was the only disease recorded in flax variety trials at 10 locations in central Alta. Six varieties were included in most tests but Redwing was the only variety affected, and then only at Olds, Airdrie and Forestburg. The infection was in trace amounts. At Lacombe a trace was found on Redwing in one set of trials. In another test both Redwing and Bison had slight amounts of rust (W.P. Campbell, W.P. Skoropad).

SEEDLING BLIGHT (Rhizoctonia solani) ratings were 6-tr. 2-sl. 1-mod. 3-sev./38 in s. Alta. (J.S.H.).

PASMO (Septoria linicola). Slight natural infection was present in plots at Ottawa, Ont., but the disease was not serious (R.V. Clark).

CHEMICAL INJURY was apparent in 2/38 s. Alta. fields. Damage was slight and was caused by 2,4-dichlorophenoxyacetic acid (J.S.H.).

RAPESEED

Rape Diseases in Saskatchewan in 1958

T.C. Vanterpool

The rape acreage for 1958 was 570,000 which is slightly higher than last year's and the highest to date. Despite the low rainfall for the whole province the yield was about average because 85% of the crop was grown in the northern half of the province where rainfall was higher and evaporation rates were lower. The rape crop was virtually free of infectious diseases, except in northern and northeastern areas where the 'white rust - downy mildew' complex was well distributed. Infections were generally slight, and in just under half the fields examined no disease was found.

White Rust - Downy Mildew Complex. (Albugo candida - Peronospora parasitica). The cause of the hypertrophied inflorescences on rape which have previously been reported as caused by Albugo candida or by Peronospora parasitica (C.P.D.S. Ann. Repts. 32:34; 34:43, 35:42; 36:37; 37:38) has been pretty well elucidated. On other cruciferous crops, A. candida and P. parasitica are each capable of causing enlargements on stems and flowers. A. candida produces larger swellings on the flowers than on the stems while with P. parasitica the opposite is true. Interestingly enough both parasites can produce a combined infection on crucifers, in which case the hypertrophies are said to be larger than with either parasite working alone. In Sask., the most common type of hypertrophy contains oospores of Albugo only. Occasionally the conidial or white-rust stage is also present towards the base of the enlargement. Sometimes the enlargements which contain Albugo oospores have conidiophores and conidia of Peronospora growing