FLAX DISEASES IN SASKATCHEWAN IN 1960

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The estimated flax acreage in Saskatchewan in 1960 was 1,400,000 with an average yield of 8.8 bushels per acre. Moist conditions early in the spring gave uniform seedling stands and this, in conjunction with a cool June got most flax fields away to a good start. The drought and high temperature which prevailed for the remainder of the summer produced short plants which were unusually free of all the late-summer diseases.

One of the most severe outbreaks of Rhizoctonia seedling blight on record occurred over widely scattered, areas of the province in 1960. In many fields the blighting continued until late June or early July and developed into a root-rot complex on the larger plants. Severe damage was reported and specimens were received from the Experimental Farms at Swift Current, Indian Head and Melfort. Blight was reported to run as high as 10-25% in some fields at Swift Current. In a large area southwest of Saskatoon, centering around Delisle, blight ranged from a trace to 1 per cent in flax fields following summer fallow. In two instances herbicidal damage appeared to intensify the late-occurring damage. No differences in varietal susceptibility to the disease could be detected.

Early isolations from blighted seedlings yielded Rhizoctonia praticola almost exclusively. As the season advanced, R. praticola, Pythium ultimum and Fusarium spp. were obtained in about equal numbers. Rhizoctonia solani was rarely isolated and then the strains encountered were only weakly pathogenic.

It should be strongly emphasized that the species of Rhizoctonia mainly responsible for seedling blight of flax in Saskatchewan is R. praticola (Kotila) Flentje = Pellicularia praticola (Pat,) Flentje and not R. solani Kühn = Pellicularia filamentosa (Pat.) Rogers" Preliminary evidence indicates that the same is true in Manitoba.

Only two authentic reports of heat canker were received. The good growing conditions and uniform stands of seedlings resulted in the bases of the plants being well protected during the bright, dry, hot weather in July. One instance of wind damage, sometimes confused with heat canker, was recorded. Boll blight or sterility was unusually common in 1960. Early season weather conditions encouraged the formation of large numbers of flowers and young bolls, many of which failed to develop following the onset of prolonged hot and dry conditions in July and August. A scorching or burning of the upper one-third of the plant as a response to drought and heat occurred occasionally in areas where the layer of top soil was thin.

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A white leaf spot and stunting, resembling the symptoms of zinc deficiency, were found in a field at Conquest. The condition appeared in plants in areas of the field where straw piles had been burned a number of years previously. In the burned areas the soil was low in organic matter and the pH was higher than that of normal soil. So far as is known, no conspicuous symptoms have appeared on cereals grown in the same field.

Traces only of aster yellows were found late in the season in the northern parkbelt area. The disease was virtually absent from flax in the open prairie. Alternaria blight (Alternaria linocola) was occasionally found in trace amounts in the parkbelt. Specimens showing injury from 2,4-D were received from Kincaid and Kindersley. Rust, stembreak and browning, and pasmo were not seen in 1960.

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RAPE DISEASES IN SASKATCHEWAN IN 1960

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The estimated rape acreage in Saskatchewan in 1960 was 550,000 with an average yield of 727 pounds per acre. Fungus diseases were again negligible in the dark brown and brown soil zones, but continued to be of slight, but increasing, importance in the black soils of the parkbelt. Heat and drought during middle and late summer were responsible for lower yields than in 1959.

White rust (Albugo cruciferarum) was again common in areas in the parkbelt where it has become established. Its incidence, however, is being kept at the trace to slight level where rotation is practiced. The disease was again most prevalent in the Melfort-Nipawin and Meadow Lake areas. The conidial stage was more conspicuous than usual in 1960. The development of Alternaria on the Albugo hypertrophies was not as conspicuous at harvest time as in previous years, probably due to the dry conditions prevailing in August and September. Conidiophores of the downy mildew fungus (Peronospora parasitica), however, developed on the hypertrophies caused by Albugo in a few fields at Meadow Lake and in two fields at Kinistino. This disease complex was not observed in 1959. The white rust fungus was collected on cruciferous weeds, but it is not known whether or not these strains will attack rape.

Ring spot or Black blight (Mycosphaerella brassicicola), which has previously been reported only from the Annaheim - Lake Lenore region, was found on 12 August at Meadow Lake and on 7 September in the Melfort - Nipawin area. The heavy development on stems and siliques at Meadow Lake, at such an early date, indicates that the disease had some effect in reducing yields, The symptom picture was complicated by moderate to heavy infections of black spot (Alternaria spp.) at Meadow Lake and slight infections of the same disease in the Melfort - Nipawin district.

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