B. OIL-SEED CROPS

FLAX

Flax Diseases in Saskatchewan in 1957

T. C. Vanterpool

The flax acreage in 1957 was 2,025,000 and yielded an average of 6.2 bu./ac.; about 2 bu. below the yearly average. Two factors were mainly responsible for this low yield: the drought and heat of midsummer, and the aster yellows epidemic.

Seedling Blight and Root Rot (Pellicularia praticola (Pat.) Flentje (Rhizoctonia solani) appears to be gaining in importance. Greatest damage was recorded in the south in an area from Moose Jaw to Indian Head. The Regina Experimental Farm reported a 30 to 35% reduction in stand of flax on fallow. The Indian Head Farm reported a 20% reduction. The blighting of flax on cereal stubble was noticeably less. The blighting of plants continued until the middle of July or later. The prolonged dry, warm weather relatively early in the season appears to have favored this disease. If the disease continues to cause damage several practices known to have slight inhibitory effects will have to be given attention.

Aster Yellows (Callistephus virus 1). The California strain is considered to be the primary cause, but the various symptom types which appeared towards the end of the season suggest that one or more other strains are also present. The disease was first noticed early, about the middle of July, lightly scattered throughout fields. Surveys in central areas during the first three weeks of August showed that the disease was generally light on the maturing early-sown fields west and southwest of Saskatoon, but in e. Sask. a few fields showed 25 to 30% infestations in the late-sown fields. The same disease picture was often repeated in individual fields; one field near Saskatoon showed 2% yellows in the normal early-maturing part but 26% on the late, greener growth from low areas. By the end of the third week in August the estimate was a 5% loss for the province. Another survey in central and eastern districts between three and four weeks later showed that yellows had increased about 50 to 75%, following the late August rains. Much of this additional yellows appeared on late growth of side branches. Most of the healthy part of this late growth did not mature before harvest, so that in the early-sown fields at least the late increase in the percentage of yellows caused only a slight further reduction in yield. In late-sown fields of Raja and Marine varieties particularly, the late increase of yellows reduced yield substantially. The eastern parkbelt losses ranged from 30 to 60% in late fields. For the province as a whole the loss would be somewhere between 10 and 15%, with the heaviest losses being sustained in the eastern parkbelt and

only traces to slight losses in the western third of the province. The total loss in flax yields from aster yellows was estimated to be 1 1/4 to 2 million bushels in Sask. In the first report to the P. D. S. (33:38) on flax yellows in Sask., it was referred to as a 'potentially serious disease'. The epidemic of 1957 has amply borne this out. The scarcity of the disease in 1956 suggests a low carry-over of virus inoculum in perennial weeds, and that the greater part of this year's inoculum was derived from swarms of viruliferous leafhoppers from further south.

There is some concern as to the extent yellows infection during the early stages of seed formation may affect the filling of the seed. The relatively large numbers of small undeveloped bolls and of papery sterile seeds suggest that the effect on seed filling by these late infections may be appreciable.

Blight (Alternaria linicola). Towards the end of the season a few fields showed a browning of the top third of many flax plants. Isolations made from the lower end of this stem zone usually yield Alternaria spp., including A. linicola. Effect on yield is considered of no significance this year, but the conditions provided inoculum which could infect the maturing seed.

Pasmo (Septoria linicola). Recorded as slight on a sample received from Saltcoats.

Selenophoma linicola. Collected in scattered 'traces' in the University plots at Saskatoon, on the dry pedicels and fine top branches where the pycnidia form. It is several years since it was last found.

Frost. Flax escaped damage from the frost of 22 May. Some late flax seed was damaged by fall frosts. Damaged seed was blackish green or dark blackish maroon. This seed was plump, but soft, when the frost occurred.

Chemical Injury. TCA herbicide was used as a spray to control wild millet or green foxtail (Setaria viridis (L.) Beauv.) w. and s. w. of Saskatoon. Several sprayed fields of flax showed severe tip and leaf yellowing and burning, but stem distortion was not as conspicuous as is often the case with 2,4-D.

Flax Diseases in Manitoba in 1957

W. E. Sackston and John W. Martens

The area sown to flax in Man. in 1957 was large, about 865,000 acres. Yield was disastrously low. Tentative estimates placed it at 5.2 bushels per acre, but provincial authorities believe it is closer to 4.0 bushels per acre.