

Twenty-four crown rust races and sub-races were isolated from the collections originating in Eastern Canada. These were (With percentage of each race given in brackets) as follows: 201 (1.7), 202C (1.7), 203 (3.4), 209 (3.4), 210 (1.7), 210A (3.4), 211 (3.4), 211A (8.5), 212 (1.7), 212B (3.4), 216 (8.5), 228 (1.7), 231 (3.4), 238 (3.4), 239 (1.7), 264 (1.7), 274 (13.5), 276 (1.7), 279 (1.7), 284A (1.7), 290 (3.4), 293 (6.8), 294 (16.8) and 295 (1.7).

In Western Canada 94.5 per cent of the crown rust races isolated are highly pathogenic to oat varieties with resistance from Victoria, while in Eastern Canada only 23 per cent of the isolates are pathogenic to Victoria. However, in the east, six of the races isolated (264, 276, 290, 293, 294 and 295) comprising 32.1 per cent of all isolates are pathogenic to Landhafer and Santa Fe which have been extensively used in Canada and the United States in breeding for resistance to crown rust. Apparently, in both Eastern and Western Canada most of the crown rust present is pathogenic to the commonly grown oat varieties.

Puccinia hordei

isolations) and race 44 (5 isolations) were the only races identified. All collections studied were obtained from Man. and Sask.

Cereal Diseases at 24 Locations in Alberta and British Columbia

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The following report was compiled from data submitted by W.P. Campbell and represents the results of a disease survey on varieties of barley, oats and wheat at 22 locations in north and central Alberta and 2 locations in B.C. For the purposes of this report the stations will be grouped as follows: Central Alberta 13 stations south, to Calgary, of a line extending through Vermilion, Vegreville, Edmonton and Fallis; North Alberta and B.C., 11 stations north of a line extending from Bonnyville through Beaverlodge and including Baldonnell and North Pine in B. C.

Barley Diseases

Eight barley varieties were grown at most c. Alta. stations but additions to and deletions from the basic list resulted in a range of 5-9 varieties. The standard list of varieties was: Wolfe, Parkland, Olli, Traill, Gateway, Husky, Nord and Pirkka. Most n. Alta. and B.C. stations had 7 varieties with Wolfe deleted from most tests. The following barley diseases were recorded.

SCALD (Rhynchosporium secalis), in c. Alta., Acme, 8 - sl./9; Airdrie, 1-mod. 8-sev./9; Bentley, 8-sev./8; Castor, 0/6; Cheddarville, 8-sev./8; Drumheller, 2-tr. 2-sl./6; Evansburg, 1-mod. 7-sev./8; Fallis, 8-sl./8; Leslieville, 6-sl. 2-mod./8; Metiskow, 0/6; Olds, 7-sl./8; Vegreville, 2-tr. 6-sl./8; Vermilion, 2-tr./5,

In n. Alta. and B. C., Athabasca, 1-sl, 2-mod, 5-sev./8; Beaverlodge, 2-tr./7; Blueberry Mtn., 4-tr. 1-sl./7; Bonnyville, 3-tr. 2-sl./8; Fairview, 2-tr./7; Goodfare, 2-tr./7; High Prairie, 1-tr. 1-sl./7; McLennan, 1-tr./7; Wanham, 3-tr. 1-sl./7; Baldonnell, B. C., 5-mod. 2-sev./7; North Pine, B.C., 5-tr./7.

Scald was generally more serious at the central than at the northern stations. Drought conditions and poor growth of barley, at Castor and Metiskow would explain the general absence of diseases at those two locations.

NET BLOTCH (*Drechslera teres*), in c. Alta., Acme, 7-sl, 1-mod./9; Airdrie, 3-tr, 4-sl./9; Bentley, 1-tr. 2-sl./8; Castor, 0/6; Cheddarville, 0/8; Drumheller, 2-tr. 2-sl./6; Evansburg, 2-tr, 1-sl./8; Fallis, 0/8; Leslieville 7-tr./8; Metiskow, 0/6; Olds, 4-tr. 2-sl./8; Vegreville, 1-tr, 6-sl./8; Vermilion, 1-tr./5.

In n. Alta. and B. C., Athabasca, 3-tr. 2-mod./8; Beaverlodge, 1-tr./7; Blueberry Mtn., 2-tr./7; Bonnyville, 2-tr. 6-sl./8; Fairview, 2-tr./7; Goodfare, 0/7; High Prairie, 2-tr, 1-sl, 2-mod./7; McLennan, 0/7; Wanham, 0/7; Baldonnell, B. C., 2-tr. 1-sl./7; North Pine, 0/7.

Net blotch was not serious at any station in n. or c. Alta. and no differences in intensity of the disease were apparent between the 2 areas.

ROOT ROT (*Bipolaris sorokiniana*, *Fusarium* spp.), in c. Alta., Acme, 4-tr. 4-sl./9; Airdrie, 7-tr. 2-sl./9; Bentley, 2-tr./8; Castor, 3-tr. 1-sl./6; Cheddarville, 3-tr./8; Drumheller, 2-tr./6; Evansburg, 3-tr./8; Fallis, 4-tr./8; Leslieville, 3-tr./8; Metiskow, 1-tr./6; Olds, 1-tr./8; Vegreville, 1-tr./8; Vermilion, 1-tr./5.

In n. Alta. and B. C., Athabasca, 2-tr. 1-sl, 3-mod. 1-sev./8; Beaverlodge, 2-tr. 2-sl./7; Blueberry Mtn., 0/7; Bonnyville, 1-tr./8; Fairview, 0/7; Goodfare, 4-tr./7; High Prairie 2-tr, 1-sl, 2-mod./7; McLennan, 0/7; Wanham, 1-tr. 5-sl, 1-mod./7; Baldonnell, B. C., 2-tr. 5-sl./7; North Pine, B. C., 3-tr. 3¹/₂sl./7.

Root rots were slightly more severe in intensity at the northern stations than at the stations in c. Alta.

LOOSE SMUT (*Ustilago nuda*) in c. Alta., Acme, 2-tr. 3-1%/9; Airdrie, 1-1%/9; Bentley, 3-1%/8; Castor, 1-tr./6; Cheddarville, 1-1%/8; Drumheller, 0/6; Evansburg, 1-tr. 1-1%/8; Fallis, 1-tr./8; Leslieville, 2-tr./8; Metiskow, 3-tr./6; Olds, 4-1%, 1-2%/8; Vegreville, 3-tr./8; Vermilion, 3-tr. 1-1%/5.

* See footnote, page 1 (D. W. C.).

In n. Alta. and B.C., Athabasca, 1-3%/8; Beaverlodge, 1-tr. 1-3%/7; Blueberry Mtn., 1-tr. 2-1%/7; Bonnyville, 1-tr./8; Fairview, 1-2%/7; Goodfare, 1-2%/7; High Prairie, 0/7; McLennan, 0/7; Wanham, 0/7; Baldonnell, B.C., 2-tr. 2-3%/7; North Pine 1-tr. 1-3%/7.

Loose smut was generally somewhat more severe at the northern stations although it was not recorded at 3 of them,

SPECKLED LEAF BLOTCH (Septoria passerinii) was not recorded from the c. Alta. stations. It was recorded from 10/11 northern stations as follows: Athabasca, 1-tr. 1-sl. 2-mod. 1-sev./8; Beaverlodge, 1-tr./7; Blueberry Mtn., 4-tr./7; Bonnyville, 0/8; Fairview, 6-tr. 1-sl./7; Goodfare, 4-tr./7; High Prairie, 1-tr. 2-sl. 2-mod. 2-sev./7; McLennan, 1-tr./7; Wanham, 1-tr./7; Baldonnell, B.C., 2-tr. 2-sl./7; North Pine, B.C., 4-tr. 1-sl./7.

BACTERIAL STREAK (Xanthomonas translucens) was found at only 1 c. Alta. station, Olds, 4-tr./8. On the northern stations it occurred at Athabasca, 1-sl. 2-mod./8; High Prairie, 1-tr. 1-sev./7; and Baldonnell, B.C., 2-tr. 3-sl./7.

BARLEY FALSE STRIPE (virus) occurred at 3 c. Alta. stations, Acme, 1-5%/9; Airdrie, 1-5%/9; and Drumheller, 1-5%/6. These three stations were the most southerly surveyed and in each case the affected variety was Compana.

POWDERY MILDEW (Erysiphe graminis) was recorded only from the n. Alta. station, High Prairie, 2-sl./7.

Oat Disease\$

Five oat varieties comprised the plantings at most c. Alta. stations but some contained 8 and one, only 4. The standard oat varieties were Rodney, Glen, Eagle, New Garry and Fundy. Most n. Alta. and B.C. locations had 6 varieties, Garry, Abegweit, 60-day, Glen, Fundy and Victory.

GRAY SPECK (Manganese deficiency) occurred in c. Alta. at 12/13 stations, Acme, 1-sl. 2-mod./5; Airdrie, 0/5; Bentley, 3-sl./5; Castor, 1-sl. 2-mod./5; Cheddarville, 5-sl. 1-mod./8; Drumheller, 1-mod. 3-sev./4; Evansburg, 2-sl./8; Fallis, 2-sl. 1-mod./8; Leslieville, 1-sl. 1-mod. 6-sev./8; Metiskow, 2-mod./5; Olds, 2-sl. 1-mod./5; Vegreville, 2-sl. 1-mod. 2-sev./5; Vermilion, 2-sl. 1-mod. 2-sev./5.

In n. Alta. and B.C., it occurred in only 5/11 locations, Blueberry Mtn., 4-tr. 1-sl. 1-mod./6; Bonnyville, 3-mod. 2-sev./5; Fairview, 3-tr./6; High Prairie 1-mod. 5-sev./6; North Pine, B.C., 1-sl./6.

BLAST (non-parasitic) was recorded only from the northern stations, Beaverlodge, 1-tr. 3-sl. 2-mod./6; Blueberry Mtn., 2-sl. 4-mod./6; Fairview, 3-tr./6; Goodfare 4-tr. 1-sl./6; High Prairie, 2-sl. 3-mod./6; McLennan, 3-tr./6; Wanham, 2-tr. 2-sl./6; Baldonnell, B.C., 2-tr. 2-sl. 2-mod./6; North Pine, B.C., 2-tr./6.

HALO BLIGHT (*Pseudomonas coronafaciens*) was recorded only from the northern location Athabasca, 4-tr. 1-sl./8.

Wheat Diseases

Wheat was surveyed only at the 11 northern stations where the following varieties were involved: Thatcher, Selkirk, Saunders, C.T. 229 and C.T. 233. The diseases recorded were:

ROOT ROT (*Bipolaris sorokiniana*, *Fusarium* spp.), Athabasca, 2-tr. 2-sl./5; Beaverlodge, 3-tr./6; Blueberry Mtn., 5-sl./5; Fairview, 1-tr./5; Goodfare, 3-sl. 2-mod./5; High Prairie, 2-tr. 2-sl./5; Wanham, 4-tr. 1-sl./5; Baldonnell, B.C., 2-tr. 2-sl./5; North Pine, B.C., 3-tr. 2-sl./5.

SPECKLED LEAF BLOTCH (*Septoria* spp.), Beaverlodge, 1-sl./6; High Prairie, 5-tr./5; North Pine, B.C., 1-tr./5.

Cereal Diseases in Cooperative Variety Tests in Alberta in 1959

W.P. Campbell

Twenty-nine plots of 6-rowed varieties of barley and 16 plots of 2-rowed varieties grown at Lacombe were surveyed for disease. In addition, 16 plots at Fallis and 16 at Airdrie were surveyed. The barley diseases were rated as follows:

On 6-rowed barley at Lacombe, scald (*Rhynchosporium secalis*), 14-tr. 10-sl. 2-mod./29; speckled leaf blotch (*Septoria passerinii*), 2-tr. 16-sl. 8-mod. 3-sev./29; net blotch (*Drechslera teres*), 14-tr. 7-sl./29; root rot (*Bipolaris sorokiniana*, *Fusarium* spp.), 9-tr. 2-sl./29; loose smut (*Ustilago nuda*), 4-tr. 3-1%, 1-3%/29; covered smut (*U. hordei*), 1-4%/29.

On 2-rowed barley at Lacombe, scald, 5-tr. 9-sl. 1-mod. 1-sev./16; net blotch, 4-tr. 3-sl./16; root rot, 3-tr. 8-sl./16; speckled leaf blotch, 3-tr. 6-sl. 1-mod./16; loose smut, 1-tr. 1-1%/16; barley false stripe, 1-tr./16.

At Fallis, scald, 4-sl. 12-sev./16; net blotch, 2-tr. 2-sl./16; root rot, 6-tr. 1-sl./16; loose smut, 3-tr. 1-1%/16; and at Airdrie, scald, 3-mod. 13-sev./16; net blotch, 6-tr./16; root rot, 7-tr. 1-sl./16.

Twenty-five plots of wheat and 24 of oats were also surveyed at Lacombe. The disease ratings for wheat were: root rot, 10-tr. 2-sl./25; speckled leaf blotch (*Septoria* spp.), 10-tr. 1-sl./25; loose smut (*Ustilago tritici*), 4-1%, 1-3%/25.

Oat disease ratings at Lacombe were: gray speck, 5-tr. 8-sl. 3-mod./24; and blast, 12-tr. 10-sl./24.

* See footnote, page 1 (D.W.C.).