Small Fruits / Petits fruits

CROP: Saskatoon, *Amelanchier alnifolia* (Nutt.)

LOCATION: North-central Alberta

NAME AND AGENCY:
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TITLE: SURVEY OF ENTOMOSPORIUM LEAF AND BERRY SPOT OF SASKATOON IN 1994

METHODS: Six commercial orchards and one wild stand of saskatoon in north-central Alberta were surveyed for entomosporium leaf and berry spot caused by *Entomosporium mespili* (DC ex Duby). Randomly selected samples consisting of a minimum of four leaves were taken from 10% or 20% of the bushes at each location, depending on the size of the orchard. The leaves were taken from the middle and lower portions of each bush sampled, and rated for the percentage of surface area affected by the pathogen: 0 = 0%, 1 = 1—25%, 2 = 26—50%, 3 = 51—75% and 4 = 76—100%.

RESULTS AND COMMENTS: Saskatoons were heavily affected by *E. mespili* at most orchards included in this survey (Table 1). In general, disease severity was greater than that seen in previous surveys (1, 3), probably due to the high humidity caused by heavy rainfall experienced in north-central Alberta in 1994. The importance of humidity was most apparent when fields A and B at site 2 were compared. Disease development was light in Field A, which is situated on the top of a small hill, and has widely spaced plants, good weed control and no shelter belt. Severe levels of disease were seen in Field B, which is more sheltered, both by topography and vegetation. Weed control in this field was poor. Decis (deltamethrin, Hoechst Canada Inc, Regina SK) was applied in field A; otherwise, cultural practices, cultivar and plant age were the same. It appears, therefore, that relative humidity was the most important determinant of disease level at this site. Disease severity and incidence of leaf spotting caused by *E. mespili* at the wild stand examined in 1993 (1) was again low.

No consistent differences were found between upper and lower leaves concerning disease severity or disease incidence. The higher disease severity normally observed on lower leaves (2) may have been masked by heavy disease pressure due to favourable environmental conditions and inoculum build-up.

Triforine (Funginex 190 EC, DuPont Canada Inc., Mississauga, Ontario) has recently been registered for use on saskatoon; the sites to which this fungicide was applied are noted in Table 1. Fungicide application does not appear to have been an effective control measure for entomosporium leaf and berry spot of saskatoon in 1994.

TABLE 1. Incidence and severity of entomosporium leaf spot and berry spot of saskatoon in north-central Alberta in 1994.

Site No.	Field	No. bushes surveyed	Fungicide applied**	Upper or lower†	Average rating on leaves†† Disease severity††	Disease incidence†††
1	A	20	N	U	2.7	100.0
				L	2.7	100.0
2	A	48	N	U	0.9	65.4
				L	1.1	84.3
2	B	18	N	U	2.3	100.0
				L	2.8	100.0
3	A	35	N	U	2.7	100.0
				L	2.7	100.0
4	A	9	N	U	2.4	100.0
				L	2.0	100.0
5*	A	19	N	U	0.7	62.0
				L	1.1	77.1
6	A	26	Y	U	1.2	77.6
				L	1.8	91.0
6	B	35	Y	U	1.1	94.3
				L	1.2	80.5
7	A	44	Y	U	2.6	100.0
				L	2.5	99.5

* Wild stand.
** Y = Funginex 190 EC, applied at a rate of 3 L of product/ha, N = no fungicide.
† Sample from upper (U) or lower (L) half of plant.
†† Average severity rating (0-4) of all leaves examined.
††† Average percentage of leaves affected (severity classes 1-4).

REFERENCES:

1. Lange, R.M. and Bains, P.S. 1994. Survey of entomosporium leaf and berry spot of saskatoon in 1993. Can. Plant Dis. Surv. 74(1):123—124.
2. Howard, R.J., Briant, M.A. and Sims, S.M. 1994. Saskatoon leaf and berry spot in south-central Alberta in 1993. Can. Plant Dis. Surv. 74(1):120—122.
3. Pesic-van Esbroeck, Z., Bains, P.S. and Motta, J.A. 1991. Survey for common leaf spot, blight and berry spot of saskatoon in central Alberta. Can. Plant Dis. Surv. 71(1):125.

CROP: Saskatoon, *Amelanchier alnifolia* Nutt.

LOCATION: South-central Alberta

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TITLE: SASKATOON LEAF AND BERRY SPOT SURVEY IN SOUTH-CENTRAL ALBERTA IN 1994

METHODS: Five commercial saskatoon orchards (Fig. 1) were sampled in early August for leaf and berry spot caused by *Entomosporium mespili.* The total area surveyed was 33.5 ha. Depending on the size of the orchard, either every row (for small plantings) or every 2nd or 4th row (for large plantings) was sampled. The sampling procedure consisted of picking leaves and berries from every 20th shrub in each row examined. Single leaves were collected from the upper and lower portion of individual shrubs and, where available, a cluster of berries was picked from the upper and lower portions of the same trees. Disease incidence and severity were assessed on all leaves and berries. Disease incidence was determined by counting the number of leaves and berries with symptoms of entomosporium leaf and berry spot, then calculating the percentage of diseased leaves and berries out of the total number examined. Disease severity was estimated visually on the same samples using the following five-point scale: clean (0) = no lesions on leaves/berries, slight (1) = 1—25% leaf/berry surface lesioned, moderate (2) = 26—50%, severe (3) = 51—75%, and very severe (4) = >75%.

RESULTS: Overall, the average disease incidence was 58% for leaves and 44% for berries (Table 1). Leaves from the lower half of the shrubs generally had a higher incidence of disease than those from upper portions because *E. mespili* usually infects suckers and lower leaves first, then spreads upward. The average disease severity on the leaves and berries of most of the bushes examined was rated as slight (<25% of leaf/berry surface lesioned). All eight of the saskatoon cultivars examined were affected by leaf and berry spot.

COMMENTS: Entomosporium leaf and berry spot incidence was moderate to high in most of the saskatoon orchards surveyed, but the severity of the disease was relatively low. In the opinion of most of the growers whose crops were surveyed, 1994 was a good year for saskatoon production in southern Alberta, but leaf and berry spot would reduce the quality and marketability of harvested fruit.

TABLE 1. Area, age and composition of saskatoon plantings and average incidence and severity of entomosporium leaf and berry spot in five commercial saskatoon orchards in south-central Alberta surveyed in August, 1994.

Orchard No.	Size (ha)	Cultivar	Avg. age of orchard (yrs)	Avg. disease incidence (%)*		Avg. disease severity (0-4)**	
				Leaves	Berries	Leaves	Berries
1	2.8	(A) Smoky, Pembina, Thiessen (mixed)	2-7	84.5	64.3	1.1	0.8
		(B) Smoky, Pembina, Thiessen (mixed)		42.8	44.8	0.5	0.5
		(C) Smoky		70.7	0	0.8	0
2	16.8	Northline (field #1)	4-7	76.0	40.8	0.8	0.4
		Smoky (field #1)		97.6	48.8	1.0	0.5
		Northline (field #2)		94.0	51.4	1.1	0.5
		Smoky (field #2)		93.4	52.5	1.1	0.6
3	1.1	Smoky	3-11	75.1	63.0	1.0	0.8
		Thiessen		51.2	70.9	0.6	0.7
		Pearson II		53.6	47.7	0.7	0.5
		Northline		80.0	50.0	1.3	0.5
		Parkhill		14.1	64.8	0.2	0.7
		Mixture		36.1	34.7	0.5	0.4
4	0.8	Smoky	13-18	36.1	34.7	0.5	0.4
5	12.0	Northline	2-23	33.7	22.9	0.4	0.3
		Honeywood		34.0	35.2	0.4	0.4
		Smoky		24.8	22.3	0.3	0.2
		Forestburg/ Pembina		42.1	46.0	0.4	0.5

* Percentage of leaves or berries with entomosporium leaf and berry spot out of the total number examined.

** Clean (0) = No lesions on leaves/berries; slight (1) = 1—25% leaf/berry surface lesioned, moderate (2) = 26—50%, severe (3) = 51—75%, and very severe (4) = >75%.

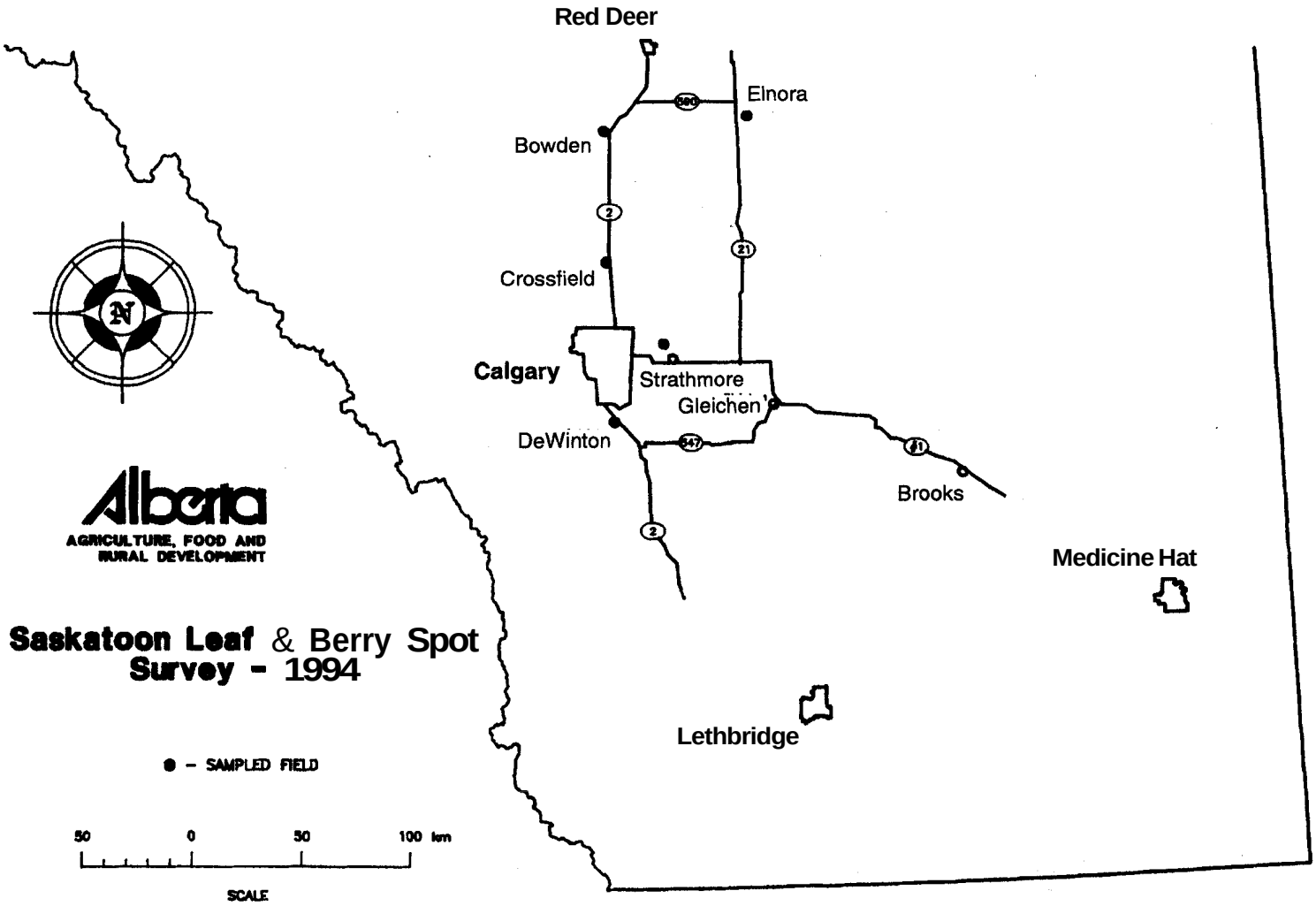

FIG. 1. Location of saskatoon orchards surveyed for entomosporium leaf and berry spot in south-central Alberta in 1994.