SEED POTATO CERTIFICATION IN CANADA IN 1964

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Introduction

The total acreage of seed potatoes passed in 1964 was approximateiy 53,000 which represents a reduction of nearly 3,000 acres from the previous year. In spite of this reduction in acreage, production increased to 9.5 million cwt., which represents an increase of approximately one quarter million hundredweight over 1963. Weather conditions at planting time were not ideal in various locations, particularly in Prince Edward Island. The late spring was followed by cool dry weather and if it had not been for two months of good growing weather in July and August, there would have been a considerable reduction in yield. Harvesting conditions in the Maritime provinces were generally good, but in Ontario and the western provinces rainy weather and heavy frost caused considerable damage. Tables 1 and 2 present data relevant to production and the principal diseases encountered.

Table 1. Summary of acres passed by variety and province

Variety	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Totals
Sebago	16,294	12	654	46	311	5			17	17,339
Kennebec	4,191	92	8,577	762	399	644		9	123	14,797
Netted Gem	58	25	3,041		25	923	75	1,064	877	6,088
Katahdin	251	4	4,703	173	68				1	5,200
Red Pontiac	19	22	2,043		27	121		20		2,252
Irish Cobbler	1,611	16	116	38	52	160		11		2,004
Green Mountain	714	7	63	1,099	4				15	1,902
Norland			14		37	811	104	62	51	1,079
Keswick	87	12	276	98	56					529
Hunter	335	13	338				1			487
Cherokee	213	20	70	15	43			3		364
Marba	33	5	2		3	49	11	92	55	250
Avon	72	8	43	4	3					130
Fundy	30	23	36		11		1		2	103
Chippewa	1		9		70					80
Pungo	44		15	10						69
Waseca						38	5		3	46
White Rose									31	31
Early Epicure									29	29
Pontiac							3		21	24
Columbia Russett						1	17		5	23
Others	19	7	2	10	2	14	22	10	19	105
1964 Totals	23,772	266	20,002	2,255	1,111	2,766	239	1,271	1,249	52,931
1963 "	27,303	271	20,131	1,979	653	1,967	318	1,475	1,510	55,607
1962 "	23,318	362	16,504	2,030	769	2,576	329	1,444	1,507	48,840
1961 "	27,944	462	14,194	2,666	952	1,723	333	1,440	2,099	43,133

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Table 2. Fields rejected on field inspection, 1964.

Province	Leaf Roll	Mosaics	Bacterial Ring Rot	Black Leg	Fungus Wilts	Spindle Tuber	Adjac. to Diseased Fields	Misc.
P. E. I.	11	87	7	271	15	26	13	92
N. S.	2	0	0	1	0	0	0	0
N. B.	2	20	75	7	6	21	5	23
Que.	0	93	101	78	0	1	18	7
Ont.	13	4	3	17	14	0	4	9
Man.	1	0	7	2	4	0	1	0
Sask.	3	1	0	3	0	0	0	3
Alta.	1	0	2	0	0	0	0	8
B. C.	3	2	0	1	1	0	0	24
Totals	36	207	195	380	40	48	41	166

Principal Disease Problems

Black leg (Erwinia atroseptica) was the principal cause of rejection of fields in 1964. Infection with black leg was undoubtedly increased because of the cool, damp spring. Germination in many areas was poor and in some cases was below 50 per cent. The incidence of bacterial ring rot (Corynebacterium sepedonicum) decreased in 1964 although it remained the principal cause of rejection of fields in Quebec and New Brunswick. The decreased incidence was particularly evident in Prince Edward Island where there were only seven positive cases diagnosed as compared with twenty-two the previous year. Bacterial ring rot was not found in Nova Scotia, Saskatchewan and British Columbia.

Mosaics were the principal cause of rejections among the virus diseases. In general, the incidence of mosaics was quite low, and in most fields rejected the mottle was not pronounced. Undoubtedly most of the mosaic was due to infection with strains of Virus X. There was a general reduction in the amount of leaf roll found in seed potato fields in 1964. This disease continues to cause problems in seed potato production in British Columbia, but a testing program, and tho supplying of leaf-roll-free seed to better growers has resulted in a marked reduction in the incidence of leaf roll in the potato growing areas of that province. Early top killing is also being practised by many of the better growers in British Columbia and this again has served to reduce the incidence of leaf roll. Spindle tuber caused the rejection of a number of fields in Prince Edward Island and New Brunswick, but apparently it is either maskod or docs not occur to any great extent in Ontario, Quebec or the western provinces.

Verticillium wilt (Verticillium albo-atrum) was again of particular significance in Ontario. Most of the infections recorded are in the variety Kennebec which is now being grown extensively for the production of crops for processing. It is not possible yet to determine to what extent the verticillium infections result from the planting of infected seed. There is evidence that at least a few fields have become infected through infected seed, but in general it appears that infection occurs through contaminaled soil. This contamination of the soil has resulted primarily from a failure on the part of some of the growers to use proper rotati-on.

It was feared that late blight (Phytophthora infestans) infection might be general through the potato growing area in 1964. However, generally cool temperatures apparently prevented sporulation in the field, and as a result most outbreaks of the disease were controlled and there is little evidence of tuber infection. There were isolated areas in Quebec and Nova Scotia where late blight did cause a considerable amount of damage.

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