

THE 1961 OTHELLO POTATO SEED LOT TRIALS

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Rather than present details of the Seed Lot Trials, it would be well to view the results in terms of what this means or should mean to the commercial table stock growers who buy certified seed, the seed grower who produces it and the Certification Agency who enforces rules, regulations and standards under which certified seed is produced.

Many of you may have visited the plantings of seed samples at the W.S.U. Research Unit near Othello during the field day in June. Copies of the final report have been distributed with additional copies available upon request from the County Agent's office in Othello.

The Seed Lot Trials were set up to objectively determine the quality of certified seed potatoes bought by eastern Washington growers. The project was undertaken cooperatively by the Agricultural Extension Service and Experiment Station of W.S.U., the Washington State Department of Agriculture and the USDA.

It must be remembered that the results are based on a 300 tuber or smaller sample, and represent the 1960 seed crop year. It can be expected that the disease pattern in the seed areas may change considerably for the 1961 and future seed crop years, either as a direct result of these trials or because of changes in natural conditions. However, if the pattern persists, adjustments in seed buying will naturally follow.

Leaf Roll

The area of origin was more important with respect to absence of leaf roll than were the individual growers within an area but some growers within an area of high leaf roll incidence did maintain seed free of the virus.

Slide 1

INCIDENCE OF LEAF ROLL IN SEED SAMPLES BY AREAS OF ORIGIN

<u>Origin</u>	<u>Total No. of Sample Lots</u>	<u>Samples Showing Leaf Roll</u>		<u>Total No. of Leaf Roll Plants</u>
		<u>Number</u>	<u>% of Total</u>	
Montana	52	3	6	4
Idaho	48	7	14	10
Alberta, Canada	5	2	40	3
Nebraska	2	1	50	2
Oregon	10	6	60	17
North Dakota	7	4	57	12
B. C. (Canada)	37	19	51	93
Pemberton area	17	3	17	4
Kootenay area	9	6	66	7
Van. Island area	6	5	83	11
Grand Forks area	5	5	100	71
Washington	23	18	78	94
Minnesota	8	5	62	39

Table stock growers who planted some of the seed lots with a high leaf roll count are justified in their concern about seed quality. It was fortunate that the aphid infestations during 1961 were low and the spread of leaf roll was minor. However it must be emphasized that the use of certified seed absolutely free of leaf roll will not solve our leaf roll problem in eastern Washington until such time that we eliminate the other major source of the virus - our annual crop of volunteer potato plants.

Slide II - A volunteer leaf roll infected plant in a potato field.

Slide III - Tubers taken at random from potato field planted with certified seed (1960 season) and re-planted the next year. 45% of the tubers were infected with leaf roll.

The results with leaf roll should challenge the seed growers and Certification Agencies to take an objective look at their rules, regulations and standards. In any case the field inspection and post-harvest test reports must accurately reflect the leaf roll situation of a certified lot of seed.

#### Bacterial Ring Rot

The odds of picking up bacterial ring rot in a 300 tuber sample representing a large certified seed lot are not very good. However, ring rot was found in 4 sample lots and confirmed by laboratory examination. The commercial fields planted with these specific seed lots all showed ring rot in various degrees. No ring rot was found in two other samples that represented seed lots in which the presence of ring rot was established by Horticulture Inspectors. With these two, the final tally was 2 lots of ring rot in Idaho certified seed, 2 lots in Montana certified seed and 2 lots in Oregon certified seed.

Ring rot was the cause of serious crop losses during 1961 by growers in the Basin area and the Yakima valley. All reported cases in the Basin area were checked and it was found that in each case the seed lots referred to above were involved, with one exception. Even in this case the circumstances favor the conclusion that the seed source was involved.

Who is to blame? Is it the seed grower, the Certification Inspector, the market grade inspector, the quarantine inspector at the receiving end, the seed cutting operator or the grower who ultimately plants the seed? The damage is done when ring rot infected potatoes are planted in the ground. Each of the above had an opportunity and missed, and yet each had done his job according to established procedures and practices. Since these accepted procedures have proved inadequate to prevent ring rot from getting through, each of the above are obligated to develop more effective safeguards. Adopt a motto - ring rot can occur in certified seed and this lot may be it. This in no way suggests that one should use table stock potatoes for seed purposes. If you do, you're usually in trouble before you start.

#### Other Problems

A number of other virus diseases were recorded but these are of no particular concern to growers of Russet Burbank potatoes in eastern Washington. However, there should be concern about the fact that seed lots from different areas varied greatly in the levels of Verticillium wilt. It is planned to follow this more closely in the 1962 trials.