# OREGON FOUNDATION SEED LOT TRIALS

by
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My discussion today on the Oregon Foundation Seed Lot Trials will be from the perspective of a certification program, and to be even more specific, my topic could have been, "Breaking the Bacterial Ring Rot Cycle." The purpose of the OPCSLST is to reduce the incidence of Bacterial Ring Rot in Oregon seed and commercial potato fields.

The Oregon plot was first considered back in June 1976 in a meeting with some Oregon seed potato growers. Dr. Paul Koepsell, Oregon State University Extension Plant Pathologist, stated at the meeting, "if seed growers and the potato industry were really serious about controlling Bacterial Ring Rot a plot should be established in the Hermiston area." No action by the growers was taken at that time.

The goal is to attempt to break the cycle of the disease pathogen. Bacterial Ring Rot was first described in Germany back in 1913 by Spieckermann (1). Then in 1931 Eastern Canada reported the pathogen and Maine in 1932. By 1940 it was reported in 37 states (1). A zero tolerance was soon adopted after 1931 by many certification agencies, until today all North American potato seed standards have the zero tolerance. The bacteria does not overwinter in the soil, but does overwinter in tubers and potato plant debris.

The establishment of the Oregon plot began its serious consideration after the Chairman of the Oregon Seed Certification Board, Dr. Harold Youngberg, appointed a committee on September 1978 to review Oregon's Seed Certification Standards as they relate to Bacterial Ring Rot.

The committee sent recommendations to the Oregon Seed Potato Advisory Council (OSPAC) in January 1979. By the middle of February 1979 the OSPAC approved the concept of the Hermiston growing out plot, now known as the "Oregon Potato Certification Seed Lot Source Trials" (OPCSLST). The Oregon Certification Board accepted the OSPAC recommendation on March 1, 1979, and the plots became a reality.

At this point in time I should note the importance of the Washington Potato Industry in their decision in establishing a similar growing out plot for the identification of Bacterial Ring Rot sources. That decision encouraged final acceptance of the Oregon Seed Source Trials. Quite interesting how these two came along at the same time!

The premise set forth in establishing the Oregon plot in Hermiston was:

1. That all potato certification agencies basically do a good job in field and tuber inspection.
2. That a good job is based on the fact that disease symptom expression is necessary in making a diagnosis.
3. That many seed lots were arriving in the Columbia Basin from many seed areas carrying obvious Bacterial Ring Rot tubers even though the lots were from a certification program.
4. That seed lots grown in the Columbia Basin were expressing Bacterial Ring Rot symptoms and apparently were not showing those symptoms in the seed growing area the previous year.
5. That the Hermiston area with its long growing season and warm temperature provides conditions more conducive to Bacterial Ring Rot symptom expression.
6. That No. 5 is based on the history of many seed lots arriving in Oregon as certified but still coming down with obvious Bacterial Ring Rot plants. This is not to

cast blame on an inefficient Certification Agency, but point out that if you cannot see the symptoms, they cannot be called by the inspectors.

The importance of the Washington and Oregon plots cannot be overemphasized; however, each plot has its own purpose as it relates to the potato industry.

There are some differences between the Washington plot and Oregon's, which are very important.

1. The trials are a part of Oregon's Seed Potato Certification Program and Seed Regulations.
2. Testing is mandatory for final certification approval of a seed lot.
3. Certification will be refused if Bacterial Ring Rot is found in the seed lot entered.
4. A sample represents approximately 25 acres of seed entered in the Seed Certification Program. Oregon requires 300 tubers for every 500 sacks of seed planted for recertification.
5. Samples from Oregon growers only.
6. *Washington trial is on the voluntary basis*, available to all seed growers.
7. Washington carries out more individual test on each seed lot, i.e. latent virus, etc.

The plots are similar in purpose, methods samples are collected, planted, evaluated and reported.

The 1979 Oregon plots consisted of 129 individual samples, representing 11 varieties, 40 Oregon seed growers, and seed from 4 states. Total acreage tested was 2,939, or 85% of the 1979 total seed acreage. The 1979 Certified Seed Crop Regulation had a provision that permitted seed lots not tested to be still eligible for certification. Reason for the above was due to the late acceptance of the requirement. The 1980 crop will require a sample for each seed lot for final approval in the Certification Program.

The results of the 1979 plot indicated the importance of the trials. One seed source was found to have Bacterial Ring Rot at the time the sample was being cut for planting. That sample represented approximately 150 acres of potential seed. The seed lot obviously was never planted by the Oregon grower.

One other seed source was found to be carrying a trace of Bacterial Ring Rot on the second evaluation made on July 10th, 19 days after the first evaluation. The seed lots represented by that seed source were dropped from the Certification Program.

The results were made public in a preliminary report on July 9th and again in early September a final report was sent out.

As mentioned earlier, the main purpose of the Washington and Oregon plots is to aid in identifying the presence of Bacterial Ring Rot in certified seed. California has had a similar program, established four years ago at their Half-Moon Bay plots. The Maine Certification Agency is looking into utilizing their Florida test plots as a Bacterial Ring Rot evaluation for each seed lot submitted.

In conclusion, I would like to express my thanks to Dr. Lyn Faulkner and Dr. Gene Easton for their advice, encouragement, and making available the cutting and planting equipment for planting our plots. Such cooperation cut out a lot of duplication of work and equipment. Thanks to you the Washington Potato Industry for your supoort to the Washington Foundation Seed Lot Trials.

Literature Source

1. Walker, John Charles.