

AREA APHID CONTROL IN CENTRAL OREGON

by

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"Potato leaf roll is costing the Central Oregon Potato industry too much money and something needs to be done to correct it." Particularly concerned were the potato seed growers of the area who were trying to establish a reputation in the expanding potato producing areas of the Pacific Northwest.

This was the message brought to Central Oregon County Extension Agent Jim Burr in the fall of 1968. That winter, about 15 growers along with Burr attended the Washington Potato Conference in Moses Lake and heard about the aphid control program that was being done in the basin by Donnie Powell and B. J. Landis. It didn't take long in a motel room that night to put together a program that might possibly help our leaf roll problem in Central Oregon. Basically the program was:

1. Locate and remove or spray all peach trees in the tri-county area.
2. Encourage all commercial producers to plant only virus-free seed.
3. Determine aphid populations and time of movement.
4. Develop a spraying schedule of the fields based on observed populations in traps and fields.

Soon after returning from the meeting, an area-wide survey was made to locate all known peach trees (It was thought that there couldn't be over 100-150 in Central Oregon.) This was done by direct mailings to all known farmers in Central Oregon and intensive radio and newspaper campaign.

The Potato Seed Growers Association and the Oregon Potato Commission put up money to pay for the spraying or removal of all peach trees located. The response was overwhelming. Excellent cooperation on the part of townspeople and farmers alike identified over four hundred trees the first year. Many of these were inspected and found to be hosting over-wintering eggs of the Green Peach aphid. Peaches are not well adapted to Central Oregon and a fruit crop can only be expected one out of every 6 - 8 years so, many owners were willing to remove their trees when they learned the trees hosted insects detrimental to the potato industry of the area.

The next step in the program was to record flights and numbers of aphids in the farmers' fields. This was accomplished by the use of yellow aphid traps located in various places throughout the Central Oregon growing area. The traps were observed by the growers and Extension personnel two to three times a week. These observations, plus field checking for aphid, were the basis for developing spray recommendations for each community in the production area.

The findings showed that aphid populations did not build up significantly until early July. Since growers very often would commence spraying in June, this program showed that they could safely delay their spraying so it coincided better with aphid flights. In other words, it took a lot of the guesswork out of their control program.

This program also raised some questions as to the effectiveness of planting time use of systemics for aphid control. This is still a debatable question but evidence indicates that the growers money could be better spent on a later application of an insecticide.

Trap readings and field checks pointed up still another significant fact which bears on the problem. That being that the Green Peach aphid populations persists in fields even after plants are thought to be dead. Aphids were observed in fields as late as September 15, which is 30 days after the last sprayings are commonly done. Where first fall frosts are late, this could mean a significant late infection could occur if growers were not aware or chose to ignore late infestations.

One means of evaluating the effectiveness of the program was to work with seed growers greenhouse readings. These readings are made by OSU Certification Specialists and are the basis for final certification for the current year's seed crop.

The following table summarizes the greenhouse readings for the area for the past five years:

<u>Year</u>	<u>No. of lots tested</u>	<u>% rejected for leaf roll</u>	<u>% Cert.</u>	<u>% Foundation</u>
1968	34	15	17	68
1969	42	7	5	88
1970	60	1	6	93
* 1971	60	7	19	75
** 1972	32	0	0	100

* Six frosts the first 10 days of July

** Two-thirds of readings completed

From this table, it is safe to conclude that the program has provided an effective answer to growers' question of what can be done to reduce or eliminate leaf roll virus in Central Oregon.

Special thanks to Mr. Powell and Mr. Landis for their help and to the meetings here for providing the opportunities to hear the fine work that is being accomplished in the potato industry in the State of Washington.