

Potato Bulletin Leaf Roll Cause Of Much Loss By Spud Growers

By C. A. HENDERSON

Net necrosis in potatoes caused by leaf roll is causing considerable loss to potato growers of the Klamath basin. This same condition has prevailed in other states and the University of Maine has done considerable work on this potato disease. A bulletin called "Net Necrosis of Potatoes" put out by the University of Maine deals entirely with this subject. It indicates that internal browning of potatoes may exist in several forms.

Some of these forms are difficult to distinguish from net necrosis, caused by leaf roll. Causes, however, for this discoloration can usually be determined by careful examination. "Net necrosis is caused by a virus disease of the potato," the bulletin states. "The leaf roll disease kills that part of the potato plant through which the food moves into and within the tuber." The disease in the tubers of certain varieties of potatoes frequently become brown or dark brown in color. The stem end of the potato is usually the only portion where discoloration appears. In some cases, however, the darkening may be present throughout the entire potato, starting at the stem end and extending into the seed end. The virus of leaf roll is usually as prevalent in the eyes of the tubers as it is in the stem but net necrosis seldom shows in the eyes.

Other types of injury that cause internal discoloration are freezing, chilling, fungus and a certain stem and browning which is distinguishable from net necrosis but of which little is yet known except that it seems to be of virus origin. "The leaf roll produces dwarfing of the potato plant, rolling and a leathery texture of the leaves, marked reduction in yield, and under some conditions, net necrosis of the tubers."

"Leaf roll is spread from diseased to healthy plants by plant lice, or aphids. When leaf roll is present even in small percentages in the seed planted, the buckthorn aphid may cause enough spread of leaf roll to bring about a reduction in grade. The peach aphid is able to spread leaf roll still more effectively." Apparently these are the two most dangerous insects in the spread of leaf roll and the peach aphid is common in the Klamath basin.

"It is only during the first year, or year of primary infection with leaf roll, that net necrosis can develop in the tubers, and even then it may or may not develop. In other words, plants growing from seed pieces free from leaf roll when planted, but becoming infected with leaf roll during the summer, may produce tubers showing net necrosis."

Some varieties of potatoes are much more susceptible to net necrosis than others and russets are included in this class. The use of different varieties may offer a solution for the net necrosis problem but it is difficult to replace the russets with a potato of equal quality and in equal demand in Western markets.

Work at the Maine station indicated that whenever healthy plants are exposed to the spread of leaf roll net necrosis will show up, in storage. They stated further that if all plants in a field have leaf roll when they first come up there will be no net necrosis in the tubers they produce because there are no plants that can be newly affected by the disease. It is interesting to note, however, that such field will produce a very high yield of extremely small potatoes. The yield generally being reduced 60 to 70 per cent. Also, where conditions favor extensive spread of leaf roll, even though the seed stock contained only a trace when planted, a high percentage of the tubers may show net necrosis. This is true because in such fields a large number of plants may be infected by current spread during that season. This accounts for the seeming paradox of net necrosis injury from relatively clean seed and less injury from fields planted with stock badly infected with leaf roll.

Quoting again from Maine: "If potatoes with net necrosis are planted, no net necrosis will appear the following fall. The plants will have leaf roll, however, because once a tuber becomes infected with leaf roll all plants produced from that tuber or its progeny will have leaf roll. Plants grown from seed showing net necrosis may not produce any tubers at all, and their yield rarely exceeds 60 per cent of the normal yield rate for healthy plants."

Summarizing Maine experiments further show that net necrosis in storage did not increase much until after four weeks but continued from that point during the entire storage period. It does not mean that there was any spread from diseased to healthy tubers but discoloration of those potatoes having leaf roll penetrated deeper into the potato. Experiments also showed potato plants that died early in the field showed less necrosis than the potatoes from fields that stayed green late, due to the fact that leaf roll enters the top of a plant after which a certain amount of time is necessary for the virus to reach the tuber and if the plant dies before the virus reaches the lower part of the stem, tubers remain healthy. This is helpful in cases where heavy attack of leaf roll occurs late in the season as it enables the growers to kill down the tops artificially and stop spread of the virus into the tubers.

"The chief way in which leaf roll is spread in the field is by insects. Insects feeding on diseased plants may take in some of the virus which

Effect Of Leaf Roll On Potato Plants



(1) Leaf roll plant from infected seed piece as it appeared in a Klamath field, September 1, 1945. (2) Yield of same 2 plants on September 1. Plant from seed piece infected by leaf roll has a yield of five small tubers. Adjacent plant was infected during growing season. Its yield was not impaired greatly. But on September 1 some of the tubers were beginning to show the typical leaf roll caused internal discoloration known as net necrosis or browning. The necrosis progresses deeper in tubers with length of storage.

KU Editorial Staffs Named

Klamath Union high school journalism students gathered at the Winema hotel Friday night for the traditional high school publications banquet, sponsored by Quill and Scroll, high school journalism group.

Joyce Sample, president of Quill and Scroll, was mistress of ceremonies, and introduced the guest speaker, Malcolm Epley, managing editor of The Herald and News. Names of staff members for the Klamath Krater, KUHS newspaper, and El Rodeo, the school yearbook for next year were announced. On the El Rodeo staff for next year are Rosemary Bigbie, editor; Marcelle Rand and Priscilla Hutchins, associate editors; Carol Monteth, business manager; Rita McFarland, advertising manager, and June Tilton and Marilyn Olson, assistant advertising managers. The rest of the staff will be appointed next fall. Retiring editor is Ruth Landry.

In head positions on the Krater will be Ronnie Brown, editor; Virginia Oberg and Gaila Eichen-dorf, associate editors; Helen Jackson, news editor; Nadine Yockey, feature editor; Donna Bradford, business manager; Peggy McIntee, advertising manager; Ken Torgerson, sports editor, first semester, and Bob Hooker, second semester. Retiring editor is Newt Thornton.

McIntyre To Talk At Modoc Meeting

W. T. McIntyre, Klamath Falls manager for United Airlines, will be the featured speaker at a meeting of the Modoc Council of Natural Resources to be held at Alturas Wednesday evening.

McIntyre will give the members of the council a picture of commercial aviation and the service it is extending areas such as the Modoc-Klamath-Lake-Siskiyou region of Northern California and Southern Oregon.

Several Klamath Falls men are expected to attend the meeting.

Lukl Named Head Of Lake Legion

LAKEVIEW, April 26—Edwin Lukl was elected 1947-48 commander of Lake county post No. 53, American Legion, Monday night at a meeting at the Lakeview airport. Other new officers elected are Ray Haines, first vice commander; Howard Campbell, second vice commander; Victor Lasater, adjutant; Carter Fetsch, finance officer; Beatrice Getty, assistant adjutant, and Emil Lukl, sergeant-at-arms. All the new officers except Emil Lukl are veterans of World War II.

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Stine Named Home Agent

Helen Stine, home economics instructor at KUHS, has accepted the position as Klamath county home demonstration agent, left vacant by the promotion of Mrs. Winifred K. Gillen to assistant state 4-H club leader.

Miss Stine is from Colorado, but has been in this area the past four years, with the WRA camp at Newell for three years. She will meet homemakers at the festival May 1, but will not take office until July 1.

During May and June Mrs. Bernice Patch, secretary, will be the only one in the home demonstration office, and Mrs. Ralph Day, former secretary, will take care of the homemakers' broadcasts which will be heard Mondays at 10:30 a. m., over KFJL.

Robinson Final Rites Held

Funeral services were held in Albany Friday for Daley Erice Robinson, 26, Southern Pacific railway fireman on the Portland division, who was killed on the Eugene-Ashland run Wednesday, April 25.

Engineer D. E. Burgess found Mr. Robinson in the cab of train 330 going north from Ashland, in tunnel 3, near Brandt, suffering from a head injury, presumably from a falling rock. He died later in a Eugene hospital. Coroner Phil Bartholomew, investigating the death, advised that it has not been determined what struck the fireman.

Mr. Robinson had been employed by the company since July 19, 1941, and had lived part of the time in Klamath Falls. He is survived by his widow, Catherine, of Eugene. Those attending the funeral from Klamath Falls were his cousin, Mrs. Floyd Pike, her mother, Mrs. Clyde Holbert, brother, Arthur Tomlin and a friend, Mrs. Elsie Homer.

Naval Reserve Designated

Lt. Comdr. D. L. Golding, USNR, and Lt. J. A. McDonald, USNR, have received official word from the 13th naval district that the Klamath Falls naval reserve unit has been designated as 13-4.

Klamath Falls is the fourth city in the district of five states to be so recognized, as of April 22, 1947.

Training course books have been requested from the director of training to cover all personnel assigned to 13-4. The men and women of this area wanted action in the naval reserve program and the district has come through so now it's up to the men to attend the next naval reserve meeting, Comdr. Golding advises, which will be held Monday, April 28, at the administration building, Klamath airport, 7:30 p. m.

All men of the electronics warfare unit are urged to attend, as well as any others interested in joining the unit. Facilities for enlistment will be provided.

A 56-pound bushel of corn will make 33 pounds of starch.

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Fishing! Lake has been recently stocked with Rainbows.

Named Agent



This is Helen Stine, who will be the new Klamath county home demonstration agent. She will meet homemakers at the May 1 Homemakers Festival.

Conservation District OK'd

LAKEVIEW, April 26—Creation of a soil conservation district in the West Side district appeared a sure-thing today after a favoring vote of 185-2 was cast by eligible land owners and contract holders in the special election Wednesday. It was announced by Mark Maddock, supervisor of the polling.

Maddock explained that to create such a district, it is not enough that a majority of those who vote are favorable. He said that the favoring vote must represent a majority of the land owners and contract holders in the proposed district.

Maddock today was mailing the ballots to the state soil conservation committee and said that the county assessor is preparing, in conjunction with the county agent's office, a list of those eligible to vote so the state committee can determine whether a majority vote was received.

Blonde, brunette and red-haired wigs for show window manikins have been made from chicken feathers.

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Attention

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