Tubers Left in Field

The Columbia Basin's volunteer problem could be solved if growers were harvesting all of the tubers grown, said Robert Thornton, WSU Extension horticulturist, adding, however, that such is not the case.

Thornton reviewed research over the past four years showing large volumes of tubers are being left in the field at harvest time. Many are deep enough in the root zone to be protected from winter kill, he said. They come in all sizes and shapes, from those small enough to slip through the chains to cut tuber pieces and marketable tubers that end up where they are not suppose to be.

Cut tubers and marketable tubers left in the fields represent harvester management problems and must be managed accordingly, Thornton said. Harvester chains may be too full or not full enough, causing tubers to bounce out or spill over onto the ground.

Cindy Plummer handing out hats at the WSPC booth.

Suggested approaches for better volunteer management include: (1) reducing small tuber production through better fertility management, particularly nitrogen, and increased attention to seed piece size — using 3-ounce seed pieces — and spacing; (2) reducing harvester leavings by closer monitoring of overloading or underloading, picking up spilled potato piles left in the field, improved blade management, and closer attention to the forward speed: chain speed ratio; (3) reducing tuber viability through the use of sprout inhibitors, such as MH-30. The problem, however, is that MH-30 is not getting to the tubers being left in the field. They are not inhibited in their ability to sprout; and (4) reducing tuber survivability. This includes after-harvest tillage, keeping in mind that tubers need a temperature of at least 28° F to be killed.

It should be remembered that the majority of tubers left in the field after harvest are not a result of an equipment management problem, Thornton stressed. They represent a design problem, of smaller tubers falling through the chains.

Such leavings are being distributed throughout the soil profile, he said, adding that a focus on improved cultural and harvest management could significantly reduce the volunteer problem.

Potato Leaf roll Considerations

In a second presentation, "Factors Affecting the Incidence of Potato Leaf roll Virus in the Columbia Basin," Thornton showed pictures of seed-borne leaf roll damage in the field, including potatoes with net necrosis.

The leaf roll issue is serious, he said, pointing to the percentage of seed lots infected at the WSU Othello research trials. While last year's overall percentage was "fairly consistent" with 1994, the changing factor is the percentage of the trial that is not Russet Burbank seed and the percentage of the Russet Burbank seed that is infected with PLRV, he said. Over time there has been a reduction in Russet Burbank seed planted and an increase in early processing and Norkotah varieties. The actual Russet Burbank acreage in the Columbia Basin has not declined, Thornton said, but the percentage of Russet Burbanks now infected with PLRV has been increasing. What has changed is that more Norkotahs and early processing varieties are being grown than in the past and many of these potatoes are not being treated for aphid control.

The WSU Othello trials reveal the challenge, he said. In 1998, for example, two Russet Burbank lots were infected with leaf roll, while in 1999 that number had swelled to 26. During the same time frame, early processing varieties infected with the virus remained the same as the year before, 15.

It is incorrect to assume, however, that the increasing Norkotah and early

Randy Mullen

Dennis Johnson

Gary Secor

Andy Jensen

Gary Reed

Chris Voigt