IMPACTS OF UI CROP RESEARCH—Potato scientists tackle Zebra chip disease threat

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IN OCTOBER, THE UNIVERSITY OF IDAHO College of Agricultural and Life Sciences confirmed that Idaho’s potato growers faced a new challenge to the state’s most famous crop with the arrival of Zebra chip. The potato disease, named for the dark bands it produces in fried potato products, was initially found last summer in research plots and fields in Jerome and Twin Falls counties. It poses no known health, safety, or nutritional problems.

In mid-January, Phil Nolte, University of Idaho Extension seed potato specialist at Idaho Falls, told growers that it’s too soon to know whether Zebra chip’s appearance in Idaho last year was a curiosity or the first sign of a coming scourge. He spoke during the 44th Annual Potato Conference in Pocatello, held with the 33rd Annual Ag Expo.

Monitoring by growers, inspectors, and researchers showed Zebra chip was widespread in some areas of southcentral Idaho but at low levels, perhaps a 1% infection rate where it was found. So far, eastern Idaho’s fields appear free of the pest. Western Idaho had one confirmed report. In the Columbia Basin of Washington and Oregon, infection rates were as high as 50%, a major economic cost to growers. Idaho researchers and state inspectors are now monitoring potatoes in storage for Zebra chip.

Bacteria that cause the dark bands are carried by psyllids, tiny cicada-like insects. Zebra chip can reduce the value of both fresh and process potatoes. It particularly affects process products such as French fries and potato chips. The dark coloration results from changes in stored sugars that caramelize when potatoes are processed. Potato products with signs of Zebra chip are removed before packaging.

Intensive sampling last summer at the Kimberly Research and Extension Center by UI Extension potato specialist and storage researcher Nora Olsen first showed the insects had infected several varieties in Idaho. Nolte has tracked Zebra chip elsewhere for several years. He wrote about the disease and psyllids carrying the bacteria in 2009. “All that remains,” says Nolte, “is figuring out how to manage the problem.”

Last year’s weird weather may mean Zebra chip was a one-time problem, or monitoring may have revealed the front line of an invasion in progress.

The discovery led to a quick response by Idaho State Department of Agriculture, Idaho Potato Commission, and University of Idaho Extension potato specialists. They worked to determine the extent of Zebra chip’s presence in Idaho and began work to control it if necessary.

IWC boosts support for CALS wheat research

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The Idaho Wheat Commission stepped up its support for agricultural research and extension on Jan. 6, announcing a plan to create two faculty research endowments with $2 million to the University of Idaho’s College of Agricultural and Life Sciences.

With $766 million in projected cash receipts in 2011, Idaho wheat growers’ made this investment recognizing the value that UI research and extension brings to efforts to breed better varieties and develop more efficient ways to grow them.

Also, Limagrain Cereal Seeds announced that it will collaborate with the college to breed new wheat varieties for Idaho and Pacific Northwest growers. That collaboration will include funding a significant endowment for cropping systems research and graduate student training.

Two faculty members who will benefit from the Idaho Wheat Commission’s endowments for essential cereal agronomy research and wheat variety development are Juliet Marshall and Jianli Chen.

As an Idaho Falls-based UI Extension cereal scientist and pathologist, Marshall helped growers protect their wheat and barley crops from stripe rust. Her early warnings helped growers limit losses to 10 to 20%, while losses in untreated research plots hit 80% in some cases.

As an Aberdeen-based wheat breeder, Chen works with the USDA Agricultural Research Service and a national project to assess 3,000 wheat lines for how efficiently they use water and fertilizer. These perpetual sources of funding will help Idaho’s 4,500 wheat producers grow nutritious food efficiently and continue to compete in world markets.