



Dan Moore (from left), Tom Pearson, and Dan Brabec pose with a machine at National Manufacturing in Lincoln that detects the presence of insect larvae in rice and wheat. (ERIN DUERR / Lincoln Journal Star) Lincoln company develops new weapon for the weevil wars

Lincoln company develops new weapon for the weevil wars

By ART HOVEY / Lincoln Journal Star | Posted: Friday, January 28, 2011 8:00 am

Weevils of the world, beware.

A Lincoln company is teaming up with federal scientists on BugSmart software and an Insect-O-Graph device that can detect insect larvae inside kernels of wheat and rice.

If such ornery pests as the lesser grain borer or the rice weevil are discovered in meaningful numbers, those moving grain toward food production can use fumigation or some other means to deal with the problem before it spreads, said Tom Pearson, an engineer based in Manhattan, Kan., with USDA's Agricultural Research Service. Without some means of assessing what's under the kernel surface, "the problem is you can't see the insects from the outside of the grain," Pearson said during a trip to Lincoln on Thursday.

Pearson and Dan Brabec, a fellow engineer from the USDA, were at National Manufacturing south of the Haymarket to meet with Dan Moore, director of operations for a company that makes such analysis equipment as the Risograph for yeast, the Mixograph for dough and other instruments for monitoring

cereal chemistry. "We are helping make the production unit to make it available" to customers in grain-



This machine developed by Dan Moore, Tom Pearson and Dan Brabec detects the presence of insect larvae in rice and wheat. (ERIN DUERR / Lincoln Journal Star)

processing ranks, Moore said. "Obviously, it's a very good fit for our cereal chemistry department," said Moore. "We already have connections to the bread industry."

Pearson and Brabec said they need a private-sector partner for anything that goes to the marketplace. "If there's enough interest out there that people want it," Pearson said, "we need to find a private sector partner that we can transfer the technology to." Royalties are not part of the deal, Pearson said. "We're just happy to transfer the technology and have it be used."

Brabec is content being called "an engineer" at the Center for Grain and Animal Health Research in Manhattan. "National has a solid line of established products," he said.

Moore and his federal partners offered a demonstration of the latest thing in insect detection. They dumped rice down an entry chute into a roller-grinder assembly that breaks up the kernels. If there are insects inside, the moisture in them "causes a big spike in electrical conductivity" that shows up as high points on a graph line at the other end of the device. By using that means of inspection in sampling a kilogram of kernels, reliable conclusions can be drawn about what's inside a rail car full of grain. The sample must be at least that big "to have any kind of statistically valid count," Pearson said.

Pearson and Brabec have an extensive background in "opto-electrical" technology aimed at inspecting and sorting grain. They've been working on getting the Insect-O-Graph to the commercial-application phase for about a year. "We're very close for wheat and right now we're working on rice," Brabec said. Rice is more of a challenge in the grinding phase because the kernel is harder and less plump.

Moore said the Insect-O-Graph has potential for both rice and wheat purchasers and processors in the United States and with customers overseas in such countries as Spain, Japan, Australia and Brazil. National is a division of TMCO (Total Manufacturing Company) and across the street at 534 J St. Combined employment is about 160 people. "We're primarily in the flour and wheat grain industry, so the majority of customers we deal with are in wheat." Two Insect-O-Graphs have already been sold, he said. "We're waiting to see the results of how they're working in a production setting," he said. The results are promising so far and "we're probably within a couple of months of going to market."