



Media Release

## ISU Data Sheds New Light on How Corn Trait Integration May Boost Yield

*Rootworm trait evaluations also fail to correlate root ratings to yield*

GOLDEN VALLEY, Minn. – January 14, 2008 -- Newly released data from 2007 Iowa State University (ISU) corn rootworm trials<sup>1</sup> have focused attention on how certain trait technologies don't always have a positive impact on yield. The data also showed there is not a clear correlation between root ratings and yield<sup>2</sup>. These results challenge the common assumption that adding traits to germplasm always increases yield. In fact, the study raises questions about yield drag in some stacked trait combinations.

At all four research sites, both Yieldgard<sup>®</sup> Plus and/or Agrisure<sup>®</sup> CB/LL/RW outyielded Herculex<sup>®</sup> XTRA.

"The poorer yield performance of the Herculex XTRA hybrids in the ISU trials could indicate problems with the Herculex RW trait itself or the integration of the trait technology into the genetics," says Bruce Battles, agronomy marketing manager of Syngenta Seeds.

"What is clear from these and other studies is that the grower wins when a seed and tech provider uses an advanced trait integration process to optimize the quality of conversions, even when stacking multiple traits," Battles stated. "Trait conversion integrates your trait with your hybrid. It's clear that yield drag can happen when the conversion brings along unwanted genetic 'baggage'. When stacking multiple traits, there's an even higher risk of bringing along that unwanted baggage or having an unpredictable negative result.

"By the same token, stacking can sometimes lead to additional yield benefits, such as what happened when Syngenta breeders added the Agrisure RW trait to hybrids with the Agrisure CB/LL trait. In that case, Syngenta research trials have shown that even in the absence of rootworm pressure, the yields of hybrids featuring the Agrisure CB/LL/RW stack of traits still increased an average of 3.7 bu/A<sup>3</sup> vs. the same hybrids with just the Agrisure CB/LL trait."

When it comes to evaluating traits, ISU Entomologist Marlin Rice cautions that correlating root ratings to yield remains a tricky proposition. "Rootworm damage is just one piece of the yield puzzle," he said. "Standability, stalk strength, root structure, emergence and disease resistance – these are all yield-driving factors that have nothing to do with rootworm control and everything to do with hybrids and genetics.

"The most accurate comparison of trait performance can be achieved by comparing the yield performance of hybrids with the same genetics that differ only in the trait," says Battles.

The ISU study showed where Pioneer 34A16 was the isoline hybrid (hybrid with no rootworm trait) used as a check for Pioneer's 34A20 with Herculex XTRA (similar genetics only with the rootworm trait). At two out of four ISU sites, the isoline hybrid that was treated with a soil insecticide actually out-yielded the Pioneer hybrid with Herculex XTRA by 22 and 23 bu/A. At a third site, the isoline hybrid once again outyielded the Herculex XTRA hybrid by 1 bu/A. The only site in which the Herculex XTRA hybrid outyielded the isoline was at Sutherland, IA, by only 2 bu/A.

The ISU study and additional information on the components of yield are available by visiting [www.agrisuretraits.com](http://www.agrisuretraits.com).

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Syngenta is a world-leading agribusiness committed to sustainable agriculture through innovative research and technology. The company is a leader in crop protection, and ranks third in the high-value commercial seeds market. Sales in 2006 were approximately \$8.1 billion. Syngenta employs around 21,000 people in over 90 countries. Syngenta is listed on the Swiss stock exchange (SYNN) and in New York (SYT). Further information is available at [www.syngenta.com](http://www.syngenta.com).

<sup>1</sup> Average root-injury, product consistency, percent lodging, and stand count for corn rootworm treatments (CRW transgenic strip tests), 2007, Iowa State University.

<sup>2</sup> Evaluation of Corn Rootworm Hybrids, Iowa State University, Southeast, Northeast, and Northwest Research and Demonstration Farms.

<sup>3</sup> Average yield increase when comparing isoline hybrids at 133 grower strip trial comparisons in 2007 where rootworm feeding was not present in untreated checks.

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