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CORN: *Zea mays* L. 'Dekalb DKC63-42', 'Mycogen 2T789'

**BT TRANSGENIC CORN ROOTWORM HYBRIDS AND SOIL INSECTICIDES AT
PLANTING FOR LARVAL CORN ROOTWORM CONTROL, 2008**

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Western corn rootworm (WCR): *Diabrotica virgifera virgifera* LeConte

Northern corn rootworm (NCR): *Diabrotica barberi* Smith and Lawrence

Planting time soil insecticide and corn rootworm resistant corn trials were conducted near Clay Center, NE to evaluate their effectiveness for larval corn rootworm (CRW) control in field corn. Local population consists predominately of WCR (>95% of total). Trial site was late-planted corn (insecticide free) during 2007. Experimental design was a RCB with 4 replicates. Plot size was a single row x 142 ft length (N-S orientation) in 30-inch row spacing. Soil type was a Crete silt loam. 'Dekalb DKC63-42' (YGRW; contains YieldGard VT Triple™ genes) and 'Mycogen 2T789' (HXX; contains Herculex® XTRA, LibertyLink® and Roundy Ready® 2 genes) corn hybrids were planted on 30 Apr 2008 with a 2-row JD 7100 Maximerge planter with finger pickup seed units. A southeast wind @ 10-20 mph occurred at planting. Granular insecticides were applied via the SmartBox™ application system and directed into the open seed furrow (IF). Plant populations were evaluated on 21 May. The total number of plants per plot was recorded and converted to plants per acre. CRW egg hatch was first observed on 02 Jun. Extended leaf heights (inches) of 20 randomly selected plants per plot were recorded on 16 Jun. Larval feeding damage was evaluated on 15 Jul. Five randomly selected plants were dug from each plot, washed, and rated using the Iowa State 0-3 scale (0 = no feeding, 1 = one node of roots pruned to within 1.5 inches of the stalk, 2 = two nodes of roots pruned to within 1.5 inches of the stalk, 3 = 3 or more nodes of roots pruned to within 1.5 inches of the stalk). Plots were machine harvested on 04 Nov. Percent moisture and lbs of grain were recorded and corrected to 56 lbs/bu @ 15% moisture. Data were analyzed by ANOVA with mean separation using differences of least square means (P = 0.05).

From planting (30 Apr) to larval feeding damage evaluation (15 Jul), precipitation totaled 11.77

inches. Treatment root injury ratings were very low and root lodging was not observed on 09 Jul or 24 Sept. All of the treatments performed statistically similar based on established plant populations, extended leaf heights, root injury ratings and yield levels. A soil insecticide applied at planting to a CRW resistant corn hybrid did not significantly enhance final yield levels.

Treatment ¹ / Formulation	Rate-amt form/ 1000 row ft	Placement ²	Plants/ Acre ³	Leaf Height ³	Root Injury Rating ³	Yield Bu/Acre ³
YGRW + Counter 15G	6.0 oz	IF	30,082	33.3	0.09	230.7
YGRW + Aztec 4.67G	2.3 oz	IF	29,526	34.4	0.09	233.6
HXX + Counter 15G	6.0 oz	IF	27,687	33.3	0.08	227.6
HXX + Aztec 4.67G	2.3 oz	IF	28,916	32.3	0.09	226.6
YGRW	-----	---	29,670	33.9	0.09	236.7
HXX	-----	---	28,439	32.0	0.13	221.3

P 0.1156 0.1071 0.1022 0.1553

¹HXX, 'Mycogen 2T789' field corn hybrid containing Herculex[®] XTRA, LibertyLink[®] and Roundy Ready[®] 2 genetic traits; YGRW, 'Dekalb DKC63-42' field corn hybrid containing YieldGard VT Triple[™] genetic traits.

²IF, granular insecticide directed into the open seed furrow.

³Means in column are not statistically different using the differences of least square means (MIXED; p|t|>0.05).

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Brand Name	Formulation	Common Name	Composition	Manufacturer
Counter	15G	terbufos	<i>S-tert</i> -butylthiomethyl <i>O,O</i> -diethyl phosphorodithioate	Ambac 4100 E. Washington Boulevard Los Angeles, CA 90023
Aztec	4.67G	tebupirimphos and cyfluthrin	(<i>RS</i>)-[<i>O</i> -(2- <i>tert</i> -butylpyrimidin-5-yl) <i>O</i> -ethyl <i>O</i> -isopropyl phosphorothioate] AND (<i>RS</i>)- α -cyano-4-fluoro-3-phenoxybenzyl (1 <i>RS</i> ,3 <i>RS</i> ;1 <i>RS</i> ,3 <i>SR</i>)-3-(2,2-dichlorovinyl)-2,2-dimethylcyclopropanecarboxylate	Bayer AG Agriculture Division P.O. Box 4913, Hawthorn Road Kansas City, MO 64120