

Traits And Hybrid Performance, 2010



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As the type and number of genetic traits continues to evolve, it can be instructive to see whether different trait combinations bring with them increases in hybrid yields.

Using data from the 2010 Crop Sciences Variety Trials, I grouped hybrids based on the type and number of insect resistance (Bt) traits. These traits are listed in the results by the insect they help to control—corn borer, corn rootworm, or “lepidopteran” (leps)—and by the number of each type of trait incorporated into a hybrid. For the sake of simplicity, I ignored herbicide traits for this analysis. Every entry except those designated as “non-GMO” had resistance to glyphosate or glufosinate, or both.

Yield data by trait group are given in Table 3.

tries mean that the data reflect individual hybrids more than traits. Even those groups that are shown can have their average performance skewed by one or two entries, so we need to interpret these results with appropriate caution.

Of entries listed as having no insect traits, the number with no traits (non-GMO hybrids) were South, 3; Central East, 2; Central West, 6; and North, 13; thus five or six entries in each region had herbicide traits only. While, as I have said, it's tricky to compare groups of different hybrids like this, two conclusions seem clear: no group performed consistently much better or much worse than other groups, and the number of traits was not highly correlated with yield performance among these groups.

We can conclude further from this that, while it is important to choose hybrids with the protective traits we need, it is perhaps even more important to pay attention to performance of individual hybrids, regardless of trait set, when choosing hybrids to plant. Δ

Table 3. Grain yield of hybrids grouped by insect resistance traits in the 2010 University of Illinois hybrid trials.

Trait set	South		Central East		Central West		North	
	No.	Yield	No.	Yield	No.	Yield	No.	Yield
None	8	218	8	214	11	215	18	211
CB	22	222	3	213	8	206	7	224
CB2-RW2-LP	1	224	2	200	2	223	3	208
CB2-RW3	8	221	9	217	9	212	10	223
CB-RW	28	218	64	211	62	211	56	213
CB-RW2-LP	5	220	6	221	6	213	6	214
CB-RW-LP	9	227	19	217	20	213	7	216

Note: Each region has three locations, but one location in the south region was dropped, leaving only two. CB = corn borer Bt; RW = Corn rootworm Bt; LP = Lepidopteran Bt. The number after the trait indicates the number of different traits of that type.

I deleted trait combinations that had two or fewer entries in any region, because so few en-

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