Corn Fungicide Application for Plant Health Improvement, Research Summary from 2012; Arysta, BASF, and Bayer Collaborations

Mike Ostlie

Four corn fungicide trials were established at Carrington in 2012 to monitor general plant health benefits from fungicide applications. Evito, Headline, HeadlineAMP, Priaxor, and StrategoYLD were the primary products evaluated. There was one in-furrow fungicide applied (Evito), each study had a V5-V6 fungicide timing, and some studies contained a VT fungicide application. In some cases, two fungicides were applied to the same plot at different growth stages. All foliar fungicides were applied at a target application volume of 20 GPA. NIS (Preference) was included with all fungicide treatments. Glyphosate and AMS were included in the V6 applications with the Headline/Priaxor trials. Each trial was conducted on 2011 corn residue. The corn variety for each trial was Dekalb DKC33-53.

The corn grain response to fungicides was quite variable (Table 1). True moisture and test weight differences were only noted in one trial, while yield differences were only noted in a single separate trial, even though many of these trials contained the same products and rates. However, it is important to note that these trials were conducted in different locations, accounting for large differences in yield between some of them.

Corn in-furrow fungicide evaluation.

Table 1. Compilation of corn fungicide trials conducted at Carrington in 2012.

----------1st application----------			--2nd application (if implemented)-					
Product	Rate	Stage	Product	Rate	Stage	Harvest Moisture	Test Weight	Yield
	oz/a			oz/a		%	lb/bu	bu/a
Headline/Priaxor evaluation								
non treated	-	-				15.6	58.77	166.6
Headline	6	V6				15.8	58.59	180.2
HeadlineAMP	10	V6				15.7	58.50	171.5
Priaxor	2	V6				15.5	59.28	173.3
Priaxor	3	V6				15.4	58.89	170.4
Priaxor	4	V6				15.6	58.89	168.8
Quadris	6	V6				15.6	58.86	172.7
StrategoYLD	2	V6				15.8	58.58	177.2
Evito	2	V6				16.0	58.89	166.5
HeadlineAMP	5	V6				15.8	58.56	170.4
Headline	3	V6				15.8	58.85	171.4
LSD (0.05)						0.4	0.61	NS
Stratego evaluations								
non treated	-	-				16.0	58.54	156.5
Stratego YLD	2	V6				16.0	58.12	158.6
Stratego YLD	2	V6	Stratego YLD	4	VT	15.8	58.73	157.7
Headline AMP	5	V6				15.7	58.37	159.2
LSD (0.05)						NS	NS	NS
Evito application timings								
non treated	-	-				14.9	59.3	187.3
Evito	2.8	in-furrow				15.1	59.1	204.7
Evito	2	V5				14.9	59.0	215.1
Headline	6	V5				15.2	58.8	211.2
			Evito	2	VT	15.2	58.9	211.3
			Headline	6	VT	15.1	59.1	205.0
			Evito-T	5	VT	14.9	59.1	203.8
			Headline AMP	10	VT	15.4	58.7	189.4
LSD (0.05)						NS	NS	25.5
Headline/Priaxor application timings- this was conducted under irrigation								
non treated	-	-				15.5	58.31	217.7
Headline	3	V6				15.3	58.22	216.4
Headline	6	V6				15.5	58.59	215.6
Priaxor	2	V6				15.2	58.72	223.4
Priaxor	4	V6				15.4	58.12	214.6
Priaxor	2	V6	HeadlineAMP	10	VT	15.7	58.15	214.2
Priaxor	3	V6	HeadlineAMP	10	VT	15.5	58.52	219.4
HeadlineAMP	5	V6	HeadlineAMP	10	VT	15.3	58.67	222.2
			HeadlineAMP	10	VT	15.3	58.36	212.8
HeadlineAMP	10	V6				15.2	58.74	213.3
LSD (0.05)						NS	NS	NS

Evito applied at 2 oz to V5 corn showed the only true yield response over non-treated corn and HeadlineAMP. Evito did not provide a response when applied in a separate similar study. Many of the products evaluated appear to provide a yield bump over the non-treated checks, but due to inherent variation within the studies, nothing conclusive can be said. In fact, due to the sample size of these experiments and this year's environment, yield bumps had to be around 10 percent (or more) to be considered a true yield advantage. Smaller differences than this would sway decision making on a commercial scale.