Trial ID: 09-3-N150 Location: Belleville Res. Center

 Investigator: Bryan Young, Professor, Southern Illinois University, bgyoung@siu.edu

 City State Zip Country:
 Belleville
 IL 62221
 USA

 Trial Status: FINAL
 Initiation Date:
 06-29-09

Objectives: Evalaute Invinsa (1-MCP) applied in corn for yield enhancement, including the benefits of applying Invinsa at V10 and R1, and to test the model based on stress driven application timings.

Crop 1: ZEAMD Der	nt corn	Variety: DKC 61-69	Description: RR2(VT3)
Planting Method:	SEEDED	Planting Date: 06-29-09	
Rate, Unit:	28000 S/A	Depth, Unit: 1.5 IN	
Row Spacing, Unit:	30 IN		
Plot Width, Unit:	15 FT	Site Type: FIELD	
Plot Length, Unit:	50 FT	Tillage Type: REDUCED-TILL	
Replications:	6	Study Design: Randomized Complete Block	
Duion Guong Vo			

Prior Crops, Year 1. GLXMA 2008

Spray Volume, Unit:

Field Prep./Maintenance: N 150 LB/A, P205 50 LB/A, K20 150 LB/A

% OM:	1.4	Texture:	SILT LOAM					
pH:	6.3	Soil Name:	PIERRON					
CEC:	7	Fert. Level:	P1 90 LB/A, K 305 LB/A					

Application Description														
	A		В		C		D							
Application Date:	08-17	7-09	08-25-09		08-31-09		09-14	1-09						
Time of Day:	8:30		13:00		11:30		11:30							
Application Method:	Spray	7	Spray		Spray		Spray	7						
Application Timing:	V10-1	12	V8-VT		V8-R1		R1-3							
Application Placement:	BROF	ЭL	BROFOL		BROFOL		BROFOL							
Applied By:	NVH		NRJ		RFK		RFK							
Air Temperature, Unit:	78	F	78	F	66	F	78	F						
% Relative Humidity:	92		86		70		70							
Wind Velocity, Unit:	2	MPH	3	MPH	3	MPH	0	MPH						
Dew Presence (Y/N):	Y		N		N		Ν							
Soil Moisture:	ABONO	DR	NORMAL		NORMAL		NORMAL							
% Cloud Cover:	100		5		90		0							
	08-17-09 08-25-09 08-31-09 09-14-09													
Crop stage at application:	V11		VT		R1		R3							
Height Min, Max (inch):	72	84	96	108	3 96	10	08 96	1	108					
2														
Pest Stage At Each Application														
Application Date:	08-17	7-09	08-25	5-09	08-31	-09	09-14	1-09						
Stage Majority (leaves):	NA		NA		NA		NA							
Application Equipment														
Appl. Equipment:	CO2 s	spray	yer CO)2 sp	orayer	CO2	2 spra	ayer	CO2	sprayer				
Operating Pressure:	30	PSI	3() 1	PSI	30	PSI	Ι	30	PSI				
Nozzle Type:	Flat	fan	F	lat i	Ean	Fla	at far	n	Flat	fan				
Nozzle Size:	XR 8003		XR 80)3 XR		R 8003		XR 8003					
Boom Length, Unit:	5	FT	5	I	7T	5	FT		5	FT				

20 GPA

20 GPA

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GPA

Invinsa Application Timing in Corn.

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Pest Code Crop Code Rating Date Rating Data Type Rating Unit Rating Timing Trt-Eval Interval									ZEAMD 01-19-10 Moisture Percent	ZEAMD 01-19-10 Test wt. Ib/bu	ZEAMD 01-19-10 Yield bu/A	ZEAMD Injury Percent 10 DAT	ZEAMD 10-19-09 Greenness Percent	ZEAMD 11-09-09 Maturity DAP	ZEAMD 11-30-09 Lodging Percent	ZEAMD 12-14-09 Plants 000/A		
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Other Rate	Other Rate Unit	Growth Stage	Appl Code									
1	NONTREATED									21.2 ab	47.3 ab	83 a	0 a	90 a	133 a	0 a	26.0 a	
2	A16781	0.08	OD	0.0223	lb ai/a	25	gai/ha	V10-12	А	21.1 ab	47.7 ab	89 a	0 a	90 a	133 a	0 a	26.2 a	
3	NONTREATED									21.1 ab	48.0 ab	92 a	0 a	90 a	133 a	0 a	27.4 a	
4	A16781	0.08	OD	0.0223	lb ai/a	25	gai/ha	V8-VT	В	21.4 ab	47.3 ab	90 a	0 a	90 a	133 a	0 a	26.9 a	
5	NONTREATED									22.2 a	46.8 b	87 a	0 a	90 a	133 a	0 a	26.9 a	
6	A16781	0.08	OD	0.0223	lb ai/a	25	gai/ha	V8-R1	С	21.2 ab	47.8 ab	88 a	0 a	90 a	133 a	0 a	26.5 a	
7	NONTREATED									20.1 b	48.2 a	100 a	0 a	90 a	133 a	0 a	26.9 a	
8	A16781	0.08	OD	0.0223	lb ai/a	25	gai/ha	R1-3	D	19.9 b	48.5 a	99 a	0 a	90 a	133 a	0 a	27.9 a	
LSI	0 (P=.05)									1.81	1.40	22.1	0.0	0.0	0.0	0.0	2.30	
Rep Rep Tre Tre	olicate F olicate Prob(F) atment F atment Prob(F)									0.039 0.9991 1.333 0.2644	0.317 0.8992 1.386 0.2422	1.964 0.1086 0.575 0.7712	0.000 1.0000 0.000 1.0000	0.000 1.0000 0.000 1.0000	0.000 1.0000 0.000 1.0000	0.000 1.0000 0.000 1.0000	0.259 0.9324 0.573 0.7725	

Means followed by same letter do not significantly differ (P=.05, LSD)

Trial Comments

1. Protocol: Syngenta (PMC003A3).

- Ratings: Drought stress rated on 1-9 scale at each application timing and 7 days after each application. See Syngenta's instructions for drought stress ratings on the following pages. CI 7-14 days after each application, describe the symptoms and continue evaluations until symptoms disappear. Percent senescence, one rating per plot, when nontreated plots are at 50% senescence. Stand count lodging at harvest. Record comments about general plant health, pests or anything that could impact yield on a per plot basis.
- Nector comments about general plant nearly, pests of anything that could impact yield on a per plot basis.

3. Yield, bu/A and test weight, harvest the (2) center rows by 40 ft after trimming 5 ft from each end of the plots.

- 4. Observe and provide comments on mixing and application characteristics. At every rating date, application date and any time an observation is made, record crop stage and height as ranges. Record whether or not applications "B" and "D" were triggered by the model or the default timing. Record average date of flowering (+/- 2-5 days) and average date of physiological maturity (+/- 2-5 days). Record GPS coordinates (lower left hand corner) for test site.
- 5. For all applications use XR 8003 tips and 50 mesh screens.
- Use (2) 2 liter bottles per treatment and a drop-tube header.
- 6. Blanket PRE application of Lumax + Atrazine and maintain weedfree with Touchdown Total if necessary.
- 7. Application timings:
 - A = Corn V10-V12
 - B = Stress Driven Model #1 V8-VT, if Stress Driven application not triggered by VT, make the application at VT.
 - C = Stress Driven Model #2 V8-R1, if Stress Driven application not triggered by R1, make the application at R1.
 - D = Stress Driven Model #1 R1-R3, if Stress Driven application not triggered by R3, make the application at R3.
- 8. Crop was planted on 6-29-09 which was 45-60 days later than normal, planting was delayed due to wet soil conditions. Crop has flowered on 8-27-09.

Crop was monitored for physiological maturity and was not mature by 10-17-09 when overnight temperatures dipped to 29 degrees F.

Two days after the freeze a greeness rating was made in advance on corn leaf browning (from the freeze), all plots were at 90% greeness, no differences.

9. All applications were mixed and sprayed without incident. No applications were triggered by model, default timings were used. Drought stress was rated 1 at each applications and 7 days after each application (1 = no drought stress).
10. Harvested 1-19-10, (2) 30 inch rows by 40 ft.