

MSU Soil Fertility Research Program
BORON PRODUCTS FALL AND SPRING APPLICATIONS IN CORN
 Trial ID: CEL03-16.17 Location: Campus Trial Year: 2016
 Investigator: Kurt Steinke
 Project ID: MOFALL16.17

Crop Code Crop Name Crop Variety Description							ZEAMX Corn PO157AMX plants/200sqft	ZEAMX Corn PO157AMX	ZEAMX Corn PO157AMX bu/ac@15.5%
Rating Date Rating Type Rating Unit Crop Stage Scale ARM Action Codes Number of Decimals							Oct-5-2017 Stand Count NUMBER T2 0	Oct-6-2017 LODGIN % Failed	Oct-10-2017 YIELD BU Hvst TY1 0
Trt No.	Treatment Name	Form Type	Rate Rate Unit	Other Rate	Other Rate Unit	Growth Stage	3	4	8
1	Fall application Urea 46-0-0 MAP	GR GR	145 lb ai/a 80 lb ai/a	315 lb/a 154 lb/a		FallPPI SprPPI FallPPI	153 a	0.00 a	192 a
2	Fall application Urea 46-0-0 MAP K2O 0-0-62	GR GR GR	145 lb ai/a 80 lb ai/a 60 lb ai/a	315 lb/a 154 lb/a 97 lb/a		FallPPI SprPPI FallPPI FallPPI	154 a	0.00 a	191 a
3	Fall application Urea 46-0-0 MAP K2O 0-0-62 Granubor 2	GR GR GR GR	145 lb ai/a 80 lb ai/a 60 lb ai/a 0.5 lb ai/a	315 lb/a 154 lb/a 97 lb/a 3.5 lb/a		FallPPI SprPPI FallPPI FallPPI FallPPI	155 a	0.00 a	177 a
4	Fall application Urea 46-0-0 MAP Aspire	GR GR GR	145 lb ai/a 80 lb ai/a 60 lb ai/a	315 lb/a 154 lb/a 103 lb/a		FallPPI SprPPI FallPPI FallPPI	151 a	0.00 a	189 a
5	Fall application Urea 46-0-0 MAP EXPCMT1	GR GR GR	145 lb ai/a 80 lb ai/a 60 lb ai/a	315 lb/a 154 lb/a 103 lb/a		FallPPI SprPPI FallPPI FallPPI	153 a	0.00 a	193 a
6	Fall application Urea 46-0-0 MAP EXPCMT2	GR GR GR	145 lb ai/a 80 lb ai/a 60 lb ai/a	315 lb/a 154 lb/a 103 lb/a		FallPPI SprPPI FallPPI FallPPI	155 a	0.00 a	220 a
7	Fall application Urea 46-0-0 MAP EXPULT1	GR GR GR	145 lb ai/a 80 lb ai/a 60 lb ai/a	315 lb/a 154 lb/a 103 lb/a		FallPPI SprPPI FallPPI FallPPI	155 a	0.00 a	201 a
8	Fall application Urea 46-0-0 MAP EXPULT2	GR GR GR	145 lb ai/a 80 lb ai/a 60 lb ai/a	315 lb/a 154 lb/a 103 lb/a		FallPPI SprPPI FallPPI FallPPI	154 a	0.00 a	209 a

Means followed by same letter or symbol do not significantly differ (P=.05, LSD)
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Trt No.	Treatment Name	Form Type	Rate Rate Unit	Other Other Rate Rate Unit	Growth Unit Stage	3	4	8
9	Spring application				SprPPI	155 a	0.00 a	195 a
	Urea 46-0-0	GR	128 lb ai/a	278 lb/a	SprPPI			
	MAP	GR	80 lb ai/a	154 lb/a	SprPPI			
	Urea 46-0-0	GR	17 lb ai/a	37 lb/a	FallPPI			
10	Spring application				SprPPI	154 a	0.00 a	220 a
	Urea 46-0-0	GR	128 lb ai/a	278 lb/a	SprPPI			
	MAP	GR	80 lb ai/a	154 lb/a	SprPPI			
	K2O 0-0-62	GR	60 lb ai/a	100 lb/a	SprPPI			
	Urea 46-0-0	GR	17 lb ai/a	37 lb/a	FallPPI			
11	Spring application				SprPPI	154 a	0.00 a	212 a
	Urea 46-0-0	GR	128 lb ai/a	278 lb/a	SprPPI			
	MAP	GR	80 lb ai/a	154 lb/a	SprPPI			
	K2O 0-0-62	GR	60 lb ai/a	100 lb/a	SprPPI			
	Granubor 2	GR	0.5 lb ai/a	3.5 lb/a	SprPPI			
	Urea 46-0-0	GR	17 lb ai/a	37 lb/a	FallPPI			
12	Spring application				SprPPI	157 a	0.00 a	226 a
	Urea 46-0-0	GR	128 lb ai/a	278 lb/a	SprPPI			
	MAP	GR	80 lb ai/a	154 lb/a	SprPPI			
	Aspire	GR	60 lb ai/a	103 lb/a	SprPPI			
	Urea 46-0-0	GR	17 lb ai/a	37 lb/a	FallPPI			
13	Spring application				SprPPI	152 a	0.00 a	206 a
	Urea 46-0-0	GR	128 lb ai/a	278 lb/a	SprPPI			
	MAP	GR	80 lb ai/a	154 lb/a	SprPPI			
	EXPCMT1	GR	60 lb ai/a	103 lb/a	SprPPI			
	Urea 46-0-0	GR	17 lb ai/a	37 lb/a	FallPPI			
14	Spring application				SprPPI	155 a	0.00 a	207 a
	Urea 46-0-0	GR	128 lb ai/a	278 lb/a	SprPPI			
	MAP	GR	80 lb ai/a	154 lb/a	SprPPI			
	EXPCMT2	GR	60 lb ai/a	103 lb/a	SprPPI			
	Urea 46-0-0	GR	17 lb ai/a	37 lb/a	FallPPI			
15	Spring application				SprPPI	156 a	0.00 a	223 a
	Urea 46-0-0	GR	128 lb ai/a	278 lb/a	SprPPI			
	MAP	GR	80 lb ai/a	154 lb/a	SprPPI			
	EXPULT1	GR	60 lb ai/a	103 lb/a	SprPPI			
	Urea 46-0-0	GR	17 lb ai/a	37 lb/a	FallPPI			

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Crop Code						ZEAMX	ZEAMX	ZEAMX	
Crop Name						Corn	Corn	Corn	
Crop Variety						PO157AMX	PO157AMX	PO157AMX	
Description						plants/200sqft		bu/ac@15.5%	
Rating Date						Oct-5-2017	Oct-6-2017	Oct-10-2017	
Rating Type						Stand Count	LODGIN	YIELD	
Rating Unit						NUMBER	% Failed	BU	
Crop Stage Scale								Hvst	
ARM Action Codes						T2		TY1	
Number of Decimals						0		0	
Trt No.	Treatment Name	Form Type	Rate Rate Unit	Other Rate	Other Rate Unit	Growth Stage			
	16 Spring application					SprPPI	3	4	8
	Urea 46-0-0	GR	128 lb ai/a	278 lb/a		SprPPI	154 a	0.00 a	202 a
	MAP	GR	80 lb ai/a	154 lb/a		SprPPI			
	EXPULT2	GR	60 lb ai/a	103 lb/a		SprPPI			
	Urea 46-0-0	GR	17 lb ai/a	37 lb/a		FallPPI			
LSD P=.05						5.5	.	38.3	
Standard Deviation						3.8	0.000	26.8	
CV						2.49	0.0	13.15	
Replicate F						0.536	0.000	7.938	
Replicate Prob(F)						0.6599	1.0000	0.0003	
Treatment F						0.531	0.000	1.098	
Treatment Prob(F)						0.9078	1.0000	0.3868	

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Crop Name						Corn	Corn	Corn	
Crop Variety						PO157AMX	PO157AMX	PO157AMX	
Description						B_HWS_ppm	B_HWS_ppm	B_HWS_ppm	
Rating Date						Oct-31-2017	Oct-31-2017	Oct-31-2017	
Rating Type						0-6 IN	6-12 IN	12-24 IN	
Rating Unit						ppm	ppm	ppm	
Crop Stage Scale						HARVEST	HARVEST	HARVEST	
ARM Action Codes									
Number of Decimals									
Trt No.	Treatment Name	Form Type	Rate Rate Unit	Other Rate	Other Rate Unit	Growth Stage			
							9	10	11
1	Fall application					FallPPI			
	Urea 46-0-0	GR	145 lb ai/a	315 lb/a		SprPPI			
	MAP	GR	80 lb ai/a	154 lb/a		FallPPI			
2	Fall application					FallPPI	0.50 a	0.63 a	0.35 a
	Urea 46-0-0	GR	145 lb ai/a	315 lb/a		SprPPI			
	MAP	GR	80 lb ai/a	154 lb/a		FallPPI			
	K2O 0-0-62	GR	60 lb ai/a	97 lb/a		FallPPI			
3	Fall application					FallPPI	0.55 a	0.50 a	0.23 a
	Urea 46-0-0	GR	145 lb ai/a	315 lb/a		SprPPI			
	MAP	GR	80 lb ai/a	154 lb/a		FallPPI			
	K2O 0-0-62	GR	60 lb ai/a	97 lb/a		FallPPI			
	Granubor 2	GR	0.5 lb ai/a	3.5 lb/a		FallPPI			
4	Fall application					FallPPI	0.58 a	0.53 a	0.28 a
	Urea 46-0-0	GR	145 lb ai/a	315 lb/a		SprPPI			
	MAP	GR	80 lb ai/a	154 lb/a		FallPPI			
	Aspire	GR	60 lb ai/a	103 lb/a		FallPPI			
5	Fall application					FallPPI	0.55 a	0.48 a	0.25 a
	Urea 46-0-0	GR	145 lb ai/a	315 lb/a		SprPPI			
	MAP	GR	80 lb ai/a	154 lb/a		FallPPI			
	EXPCMT1	GR	60 lb ai/a	103 lb/a		FallPPI			
6	Fall application					FallPPI			
	Urea 46-0-0	GR	145 lb ai/a	315 lb/a		SprPPI			
	MAP	GR	80 lb ai/a	154 lb/a		FallPPI			
	EXPCMT2	GR	60 lb ai/a	103 lb/a		FallPPI			
7	Fall application					FallPPI			
	Urea 46-0-0	GR	145 lb ai/a	315 lb/a		SprPPI			
	MAP	GR	80 lb ai/a	154 lb/a		FallPPI			
	EXPULT1	GR	60 lb ai/a	103 lb/a		FallPPI			
8	Fall application					FallPPI			
	Urea 46-0-0	GR	145 lb ai/a	315 lb/a		SprPPI			
	MAP	GR	80 lb ai/a	154 lb/a		FallPPI			
	EXPULT2	GR	60 lb ai/a	103 lb/a		FallPPI			

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Crop Name						Corn	Corn	Corn	
Crop Variety						PO157AMX	PO157AMX	PO157AMX	
Description						B_HWS_ppm	B_HWS_ppm	B_HWS_ppm	
Rating Date						Oct-31-2017	Oct-31-2017	Oct-31-2017	
Rating Type						0-6 IN	6-12 IN	12-24 IN	
Rating Unit						ppm	ppm	ppm	
Crop Stage Scale						HARVEST	HARVEST	HARVEST	
ARM Action Codes									
Number of Decimals									
Trt No.	Treatment Name	Form Type	Rate Rate Unit	Other Rate	Other Rate Unit	Growth Stage			
	9	Spring application				SprPPI	9	10	11
		Urea 46-0-0	GR 128 lb ai/a	278 lb/a		SprPPI			
		MAP	GR 80 lb ai/a	154 lb/a		SprPPI			
		Urea 46-0-0	GR 17 lb ai/a	37 lb/a		FallPPI			
	10	Spring application				SprPPI	0.53 a	0.65 a	0.40 a
		Urea 46-0-0	GR 128 lb ai/a	278 lb/a		SprPPI			
		MAP	GR 80 lb ai/a	154 lb/a		SprPPI			
		K2O 0-0-62	GR 60 lb ai/a	100 lb/a		SprPPI			
		Urea 46-0-0	GR 17 lb ai/a	37 lb/a		FallPPI			
	11	Spring application				SprPPI	0.55 a	0.48 a	0.20 a
		Urea 46-0-0	GR 128 lb ai/a	278 lb/a		SprPPI			
		MAP	GR 80 lb ai/a	154 lb/a		SprPPI			
		K2O 0-0-62	GR 60 lb ai/a	100 lb/a		SprPPI			
		Granubor 2	GR 0.5 lb ai/a	3.5 lb/a		SprPPI			
		Urea 46-0-0	GR 17 lb ai/a	37 lb/a		FallPPI			
	12	Spring application				SprPPI	0.70 a	0.55 a	0.38 a
		Urea 46-0-0	GR 128 lb ai/a	278 lb/a		SprPPI			
		MAP	GR 80 lb ai/a	154 lb/a		SprPPI			
		Aspire	GR 60 lb ai/a	103 lb/a		SprPPI			
		Urea 46-0-0	GR 17 lb ai/a	37 lb/a		FallPPI			
	13	Spring application				SprPPI	0.58 a	0.45 a	0.30 a
		Urea 46-0-0	GR 128 lb ai/a	278 lb/a		SprPPI			
		MAP	GR 80 lb ai/a	154 lb/a		SprPPI			
		EXPCMT1	GR 60 lb ai/a	103 lb/a		SprPPI			
		Urea 46-0-0	GR 17 lb ai/a	37 lb/a		FallPPI			
	14	Spring application				SprPPI			
		Urea 46-0-0	GR 128 lb ai/a	278 lb/a		SprPPI			
		MAP	GR 80 lb ai/a	154 lb/a		SprPPI			
		EXPCMT2	GR 60 lb ai/a	103 lb/a		SprPPI			
		Urea 46-0-0	GR 17 lb ai/a	37 lb/a		FallPPI			
	15	Spring application				SprPPI			
		Urea 46-0-0	GR 128 lb ai/a	278 lb/a		SprPPI			
		MAP	GR 80 lb ai/a	154 lb/a		SprPPI			
		EXPULT1	GR 60 lb ai/a	103 lb/a		SprPPI			
		Urea 46-0-0	GR 17 lb ai/a	37 lb/a		FallPPI			

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Description						B_HWS_ppm	B_HWS_ppm	B_HWS_ppm
Rating Date						Oct-31-2017	Oct-31-2017	Oct-31-2017
Rating Type						0-6 IN	6-12 IN	12-24 IN
Rating Unit						ppm	ppm	ppm
Crop Stage Scale						HARVEST	HARVEST	HARVEST
ARM Action Codes								
Number of Decimals								
Trt No.	Treatment Name	Form Type	Rate Rate Unit	Other Rate	Other Rate Unit	Growth Stage		
							9	10
	16 Spring application					SprPPI		
	Urea 46-0-0	GR	128 lb ai/a	278 lb/a		SprPPI		
	MAP	GR	80 lb ai/a	154 lb/a		SprPPI		
	EXPULT2	GR	60 lb ai/a	103 lb/a		SprPPI		
	Urea 46-0-0	GR	17 lb ai/a	37 lb/a		FallPPI		
LSD P=.05						0.207	0.280	0.222
Standard Deviation						0.139	0.189	0.149
CV						24.59	35.53	50.25
Replicate F						2.558	0.947	1.212
Replicate Prob(F)						0.0873	0.4386	0.3339
Treatment F						0.736	0.596	0.945
Treatment Prob(F)						0.6446	0.7508	0.4978

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Crop Code

ZEAMX, BCOR, Zea mays, Corn = US

Rating Type

LODGIN = lodging

YIELD = yield

Rating Unit

NUMBER = number

BU = bushel

ppm = parts per million

ARM Action Codes

T2 = [C1]+[C2]

TY1 = $3.889286 * [C5] * (100 - [C6]) / 84.5$