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MAGNESIUM SULFATE TANK-MIXED WITH
ROUNDUP + ATRAZINE - I
Trial ID: CN-12-16 Study Dir.:
Location: ATTAPULGUS Investigator: Eric P. Prostko

Reps: 4 Plots: 6 by 25 feet
Spray vol: 15 GAL/AC Mix Size: 1.5 liters (.78211 liters calculated mix size)

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Grow Stg	Appl Code	Amt Product to Measure	Rep 1	2	3	4
1	NTC								101	202	302	403
2	ROUNDUP P-MAX	5.5	SL	22.0	oz/a	POST	A	17.19 ml/mx	102	203	301	402
	ATRAZINE	4	L	64.0	oz/a	POST	A	49.99 ml/mx				
	AMS XTRA			2.5	% v/v	POST	A	37.5 ml/mx				
3	ROUNDUP P-MAX	5.5	SL	22.0	oz/a	POST	A	17.19 ml/mx	103	201	303	401
	ATRAZINE	4	L	64.0	oz/a	POST	A	49.99 ml/mx				
	AMS XTRA			2.5	% v/v	POST	A	37.5 ml/mx				
	MAGNESIUM SULFATE	9.8	DG	4.0	lb/a	POST	A	47.93 g/mx				

Sort Order: Treatment

Trial Comments

FEED GRADE MAGNESIUM SULFATE
9.8% MN
12.9% S
PENOLES METALS & CHEMICALS INC. (STAMFORD, CT)

YIELDS ADJUSTED TO 15.5% MOISTURE.

SUMMARY:

1) CORN INJURY WAS NOT SIGNIFICANTLY INCREASED WHEN MAGNESIUM SULFATE WAS TANK-MIXED WITH ROUNDUP + ATRAZINE.

2) PALMER AMARANTH AND ANNUAL GRASS CONTROL WAS NOT REDUCED WHEN MAGNESIUM SULFATE WAS TANK-MIXED WITH ROUNDUP + ATRAZINE.

3) CORN YIELDS WERE LOWER THAN EXPECTED DUE TO LODGING CAUSED BY TROPICAL STORM HERMINE ON SEPTEMBER 1.

4) CORN YIELDS WERE NOT INFLUENCED BY ANY TREATMENT (P=0.1191).

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GENERAL TRIAL INFORMATION

Study Director: _____ **Title:** _____
Affiliation: _____ **Postal Code:** _____

Investigator: Eric P. Prostko **Title:** _____
Affiliation: _____ **Postal Code:** _____

Trial Status: _____ **Initiation Date:** _____ **Country:** _____
City: _____ **State/Prov.:** _____ **Postal Code:** _____
Conducted Under GLP (Y/N): N **Conducted Under GEP (Y/N):** N

Objective:

Conclusions:

CROP AND PEST DESCRIPTION

Weed 1. AMAPA PALMER AMARANTH **2.** AGRASS TX MILLET/CRAB/CROW/GOOSE

Crop 1: ZEAMA FIELD CORN **Variety:** PIONEER 1794VYHR **Planting Date:** Apr-11-16
Planting Method: MONOSEM **Rate:** 31799 SEED/A **Depth:** 1.5 IN
Perennial Age: ____ _____ **Row Spacing:** 36 IN **Seed Bed:** _____
Soil Temperature: ____ _ **Soil Moisture:** OPTIMUM **Emergence Date:** _____

Plot Width, Unit: 6 FT **Plot Length, Unit:** 25 FT **Reps:** 4
Site Type: _____
Tillage Type: CONVENTIONAL **Study Design:** RACOBL
Trial Initiation Comments: AGRISURE VIPTERA; PONCHO/VOTIVO; OPTIMUM LEPTRA

Previous:	Crops	Pesticides	Year
1.	SOYBEAN	2015	____

MAINTENANCE

Field Prep./Maintenance: _____

No.	Date	Treatment Name	Form Conc	Form Unit	Form Type	Rate	Rate Unit
1.	_____	_____	____	_____	___	_____	_____

SOIL DESCRIPTION

Texture: LOAMY SAND **% OM:** 1.49 **% Sand:** 86 **% Silt:** 6 **% Clay:** 8
pH: 6.0 **CEC:** ____ **Soil Name:** ORANGEBURG **Fertility Level:** GOOD

MOISTURE CONDITIONS

On:	Date	Time	Amount	Unit	Type	Interval	Unit
1.	_____	_____	_____	__	_____	_____	___

Overall Moisture Conditions: _____
Closest Weather Station: _____ **Distance:** _____ **Unit:** __

APPLICATION DESCRIPTION

	A	B	C	D	E	F
Application Date:	Apr-28-16	_____	_____	_____	_____	_____
Time of Day:	8:45 am	_____	_____	_____	_____	_____
Application Method:	BROADCAST	_____	_____	_____	_____	_____
Application Timing:	POST	_____	_____	_____	_____	_____
Applic. Placement:	FOLIAGE	_____	_____	_____	_____	_____
Air Temp., Unit:	76 F	____ _	____ _	____ _	____ _	____ _
% Relative Humidity:	77	_____	_____	_____	_____	_____
Wind Velocity, Unit:	1 MPH	____ ____	____ ____	____ ____	____ ____	____ ____
Dew Presence (Y/N):	Y	_	_	_	_	_
Water Hardness:	--	_____	_____	_____	_____	_____
Soil Temp., Unit:	74 F	____ _	____ _	____ _	____ _	____ _
Soil Moisture:	OPTIMUM	_____	_____	_____	_____	_____
% Cloud Cover:	100	_____	_____	_____	_____	_____

CROP STAGE AT EACH APPLICATION

	A	B	C	D	E	F
Crop 1 Stage: ZEAMA	_____	_____	_____	_____	_____	_____
Stage Scale:	_____	V3-V4	_____	_____	_____	_____
Height, Unit:	____ ____	6 IN	____ ____	____ ____	____ ____	____ ____

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WEED STAGE AT EACH APPLICATION

		A	B	C	D	E	F
Weed 1	**Stage:** AMAPA		1-2"				
Stage Scale:							
Density, Unit:							
Weed 2	**Stage:** AGRASS		1-2"				
Stage Scale:							
Density, Unit:							

APPLICATION EQUIPMENT

		A	B	C	D	E	F
Appl. Equipment:	BACKPACK						
Operating Pressure:	38						
Nozzle Type:	AIXR						
Nozzle Size:	11002						
Nozzle Spacing, Unit:	20 IN						
Nozzles/Row:							
Band Width, Unit:							
Boom Length, Unit:	60 IN						
Boom Height, Unit:	20 IN						
Ground Speed, Unit:	3.5 MPH						
Incorporation Equip.:							
Hours to Incorp.:							
Incorp. Depth, Unit:							
Carrier:	WATER						
Spray Volume, Unit:	15 GPA						
Spray pH:							
Propellant:	CO2						
Tank Mix (Y/N):							

Trt No	Treatment Application Comment

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Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Grow Stg	Appl Code	----- ZEAMA PLANT - STUNTING PERCENT May-6-16 8 DA-A	AGRASS ----- CONTROL PERCENT May-6-16 8 DA-A	AMAPA ----- CONTROL PERCENT May-6-16 8 DA-A	----- ZEAMA PLANT - STUNTING PERCENT May-16-16 18 DA-A	AMAPA ----- CONTROL PERCENT May-16-16 18 DA-A	AGRASS ----- CONTROL PERCENT May-16-16 18 DA-A
								1	2	3	4	5	6
1	NTC							0.0 a	0.0 b	0.0 b	0.0 a	0.0 b	0.0 b
2	ROUNDUP P-MAX	5.5	SL	22.0	oz/a	POST	A	6.3 a	71.3 a	99.0 a	2.5 a	99.0 a	63.8 a
	ATRAZINE	4	L	64.0	oz/a	POST	A						
	AMS XTRA			2.5	% v/v	POST	A						
3	ROUNDUP P-MAX	5.5	SL	22.0	oz/a	POST	A	5.0 a	70.0 a	99.0 a	5.0 a	98.0 a	63.8 a
	ATRAZINE	4	L	64.0	oz/a	POST	A						
	AMS XTRA			2.5	% v/v	POST	A						
	MAGNESIUM SULFATE	9.8	DG	4.0	lb/a	POST	A						
LSD P=.10								6.38	7.85	.	5.12	1.59	3.03
Standard Deviation								4.64	5.71	0.00	3.73	1.15	2.20
CV								123.73	12.13	0.0	149.07	1.76	5.19
Grand Mean								3.75	47.08	66.00	2.50	65.67	42.50
Bartlett's X2								0.099	1.133	0.0	0.059	0.0	0.0
P(Bartlett's X2)								0.753	0.287	.	0.809	.	.
Replicate F								0.613	2.787	0.000	2.200	1.000	0.571
Replicate Prob(F)								0.6312	0.1320	1.0000	0.1889	0.4547	0.6542
Treatment F								2.032	203.809	0.000	1.800	9703.001	1114.714
Treatment Prob(F)								0.2119	0.0001	1.0000	0.2441	0.0001	0.0001

Means followed by same letter or symbol do not significantly differ (P=.10, Duncan's New MRT)
Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.
Could not calculate LSD (% mean diff) for columns 3,7 because error mean square = 0.

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Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Grow Stg	Appl Code	7	8	9	10	11
	Weed Code							AMAPA	AGRASS	-----	-----	-----
	Crop Code							-----	-----	ZEAMA	ZEAMA	ZEAMA
	Part Rated									PLOT -	PLOT -	PLOT -
	Rating Data Type							CONTROL	CONTROL	YIELD	MOISTURE	YIELD
	Rating Unit							PERCENT	PERCENT	LBS/PLOT	PERCENT	BU/A
	Rating Date							Jun-3-16	Jun-3-16	Sep-12-16	Sep-12-16	Sep-12-16
	Trt-Eval Interval							36 DA-A	36 DA-A	137 DA-A	137 DA-A	137 DA-A
	PRM Data Type											TY1
	# Subsamples, Dec.									- 2	- 2	- 0
1	NTC							0.0 b	0.0 b	29.87 a	14.13 a	157 a
2	ROUNDUP P-MAX	5.5	SL	22.0	oz/a	POST	A	99.0 a	62.5 a	33.41 a	13.89 a	177 a
	ATRAZINE	4	L	64.0	oz/a	POST	A					
	AMS XTRA			2.5	% v/v	POST	A					
3	ROUNDUP P-MAX	5.5	SL	22.0	oz/a	POST	A	99.0 a	61.3 a	35.51 a	14.05 a	187 a
	ATRAZINE	4	L	64.0	oz/a	POST	A					
	AMS XTRA			2.5	% v/v	POST	A					
	MAGNESIUM SULFATE	9.8	DG	4.0	lb/a	POST	A					
	LSD P=.10							.	4.13	4.435	0.534	23.6
	Standard Deviation							0.00	3.00	3.228	0.388	17.1
	CV							0.0	7.28	9.8	2.77	9.87
	Grand Mean							66.00	41.25	32.929	14.023	173.8
	Bartlett's X2							0.0	0.698	2.047	2.173	2.342
	P(Bartlett's X2)							.	0.403	0.359	0.337	0.31
	Replicate F							0.000	1.462	0.660	0.325	0.664
	Replicate Prob(F)							1.0000	0.3161	0.6060	0.8077	0.6038
	Treatment F							0.000	565.615	3.115	0.389	3.097
	Treatment Prob(F)							1.0000	0.0001	0.1181	0.6938	0.1191

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Weed Code
AMAPA = AMARANTH, PALMER / AMARANTHUS PALMERI S.WATS.
Part Rated
PLANT = PLANT / PLANT BIOMASS (includes Shrub, Tree, Turf)
PRM Data Type
TY1 = 5.185714*[9]*(100-[10])/84.5

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Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Grow Stg	Appl Code	Plot	1	2	3	4	5
	Weed Code								-----	AGRASS	AMAPA	-----	AMAPA
	Crop Code								ZEAMA	-----	-----	ZEAMA	-----
	Part Rated								PLANT -			PLANT -	
	Rating Data Type								STUNTING	CONTROL	CONTROL	STUNTING	CONTROL
	Rating Unit								PERCENT	PERCENT	PERCENT	PERCENT	PERCENT
	Rating Date								May-6-16	May-6-16	May-6-16	May-16-16	May-16-16
	Trt-Eval Interval								8 DA-A	8 DA-A	8 DA-A	18 DA-A	18 DA-A
	PRM Data Type												
	# Subsamples, Dec.												
1	NTC							101	0.0	0.0	0.0	0.0	0.0
								202	0.0	0.0	0.0	0.0	0.0
								302	0.0	0.0	0.0	0.0	0.0
								403	0.0	0.0	0.0	0.0	0.0
								Mean =	0.0	0.0	0.0	0.0	0.0
2	ROUNDUP P-MAX	5.5	SL	22.0	oz/a	POST	A	102	10.0	60.0	99.0	10.0	99.0
	ATRAZINE	4	L	64.0	oz/a	POST	A	203	5.0	65.0	99.0	0.0	99.0
	AMS XTRA			2.5	% v/v	POST	A	301	0.0	75.0	99.0	0.0	99.0
								402	10.0	85.0	99.0	0.0	99.0
								Mean =	6.3	71.3	99.0	2.5	99.0
3	ROUNDUP P-MAX	5.5	SL	22.0	oz/a	POST	A	103	10.0	65.0	99.0	10.0	99.0
	ATRAZINE	4	L	64.0	oz/a	POST	A	201	0.0	65.0	99.0	0.0	99.0
	AMS XTRA			2.5	% v/v	POST	A	303	10.0	75.0	99.0	10.0	99.0
	MAGNESIUM SULFATE	9.8	DG	4.0	lb/a	POST		401	0.0	75.0	99.0	0.0	95.0
								Mean =	5.0	70.0	99.0	5.0	98.0

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Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Grow Stg	Appl Code	Plot	6	7	8	9	10	11
	Weed Code								AGRASS	AMAPA	AGRASS	-----	-----	-----
	Crop Code								-----	-----	-----	ZEAMA	ZEAMA	ZEAMA
	Part Rated											PLOT -	PLOT -	PLOT -
	Rating Data Type								CONTROL	CONTROL	CONTROL	YIELD	MOISTURE	YIELD
	Rating Unit								PERCENT	PERCENT	PERCENT	LBS/PLOT	PERCENT	BU/A
	Rating Date								May-16-16	Jun-3-16	Jun-3-16	Sep-12-16	Sep-12-16	Sep-12-16
	Trt-Eval Interval								18 DA-A	36 DA-A	36 DA-A	137 DA-A	137 DA-A	137 DA-A
	PRM Data Type													TY1
	# Subsamples, Dec.											- 2	- 2	- 0
1	NTC							101	0.0	0.0	0.0	33.16	13.95	175
								202	0.0	0.0	0.0	25.36	14.60	133
								302	0.0	0.0	0.0	29.23	14.44	153
								403	0.0	0.0	0.0	31.74	13.52	168
								Mean =	0.0	0.0	0.0	29.87	14.13	157
2	ROUNDUP P-MAX	5.5	SL	22.0	oz/a	POST	A	102	60.0	99.0	60.0	28.06	13.71	149
	ATRAZINE	4	L	64.0	oz/a	POST	A	203	65.0	99.0	60.0	35.25	13.70	187
	AMS XTRA			2.5	% v/v	POST	A	301	65.0	99.0	65.0	33.93	14.14	179
								402	65.0	99.0	65.0	36.38	14.01	192
								Mean =	63.8	99.0	62.5	33.41	13.89	177
3	ROUNDUP P-MAX	5.5	SL	22.0	oz/a	POST	A	103	65.0	99.0	65.0	36.50	14.28	192
	ATRAZINE	4	L	64.0	oz/a	POST	A	201	60.0	99.0	55.0	33.87	13.71	179
	AMS XTRA			2.5	% v/v	POST	A	303	65.0	99.0	65.0	34.59	14.03	182
	MAGNESIUM SULFATE	9.8	DG	4.0	lb/a	POST	A	401	65.0	99.0	60.0	37.08	14.18	195
								Mean =	63.8	99.0	61.3	35.51	14.05	187

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