

The Ohio State University

Tavium Tank mix Pre and Post Options

Trial ID: 20TAVIUM Location: Western Branch F-9 East Trial Year: 2020
 Protocol ID: 20TAVIUM Investigator: Dr. Mark M. Loux
 Project ID: H058SMAD2020US Study Director: Anthony Dobbels
 Sponsor Contact: Dain Bruns, Syngenta

General Trial Information

Study Director: Anthony Dobbels
Investigator: Dr. Mark M. Loux

Discipline: H herbicide
Trial Status: E established

ARM Trial Created On: Mar-17-2020 **Trial Usage/Type:** 0 Research and Development
Initiation Date: May-13-2020

Trial Location

Address (Location): 7721 South Charleston Pike
City: South Charleston **Country:** USA United States
State/Prov.: Ohio
Postal Code: 45368

Latitude of LL Corner °: 39.85767 N
Longitude of LL Corner °: -83.67 W
Altitude of LL Corner: 1093.00 FT

Conducted Under GLP: No
Conducted Under GEP: No

Objectives:

Contacts

Study Director: Anthony Dobbels

Investigator: Dr. Mark M. Loux

Crop Description

Crop 1: C	GLXMA Glycine max	Soybean	BBCH Scale: BSOY
	Entry Date: May-14-2020	Stage Scale: BBCH	
	Variety: Pioneer 33A24X		
	Attributes: GLYPHOSATE-R,AUXIN-R		
	Seed Lot No: B3GRA13059-00-1207	Seed Source: Illinois	
	% Germination: 90		
	Planting Date: May-13-2020	Seed Size: 2114 S/LB	
	Depth: 2 IN	Planting Rate: 160000 S/A	
	Rows per Plot: 4	Planting Method: PLANTD planted	
	Row Spacing: 30 IN	Planting Equipment: FE field equipment	
		Seed Bed: MEDIUM medium	
	Soil Temperature: 62 F	Soil Moisture: NORMAL normal, adequate	
		Plant Arrangement: ROW	
	Emergence Date: May-25-2020		

Pest Description

Pest 1 Type: W	Code: AMBTR	Ambrosia trifida	Entry Date: May-14-2020
	Common Name: ragweed, giant		
Pest 2 Type: W	Code: SETFA	Setaria faberi	Entry Date: Jun-25-2020
	Common Name: foxtail, giant		
Pest 3 Type: W	Code: ECHCG	Echinochloa crus-galli	Entry Date: Jun-25-2020
	Common Name: barnyardgrass		
Pest 4 Type: W	Code: ABUTH	Abutilon theophrasti	Entry Date: Jun-25-2020
	Common Name: velvetleaf		
Pest 5 Type: W	Code: CHEAL	Chenopodium album	Entry Date: Jun-25-2020
	Common Name: lambsquarters, common		
Pest 6 Type: W	Code: AMARE	Amaranthus retroflexus	Entry Date: Jun-25-2020
	Common Name: pigweed, redroot		
Pest 7 Type: W	Code: IPOHE	Ipomoea hederacea	Entry Date: Jun-25-2020
	Common Name: morningglory, ivyleaf		

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Site and Design

Treated Plot Width: 10 FT Site Type: FIELD field
 Treated Plot Length: 30 FT Experimental Unit: 1 PLOT plot
 Treated Plot Area: 300 FT² Treatments: 10 Tillage Type: MUTTIL multiple-tillage
 Replications: 4 Study Design: RACOB� Randomized Complete Block (RCB)

Trial Initiation Comments:

Spring disc followed by spring 1 pass finishing tool with disc, cultivator, harrow and rolling basket.

Previous

No.	Crop	Year
1.	CORN	2019

Soil Description

Description Name: Big E
 % Sand: 44 % OM: 3.1 Texture: L loam
 % Silt: 45 pH: 6.6 Soil Name: Kokomo
 % Clay: 11 CEC: 15.2 Fert. Level: G good
 Soil Drainage: G good

Application Description

	A	B
Application Date	May-13-2020	Jun-24-2020
Appl. Start Time	3:00 PM	8:00 AM
Appl. Stop Time	3:30 PM	8:30 AM
Interval to Prev. Appl.		42 DAYS
Application Method	SPRAY	SPRAY
Application Timing	PREPRE	POSPOS
Application Placement	BROSOI	BROFOL
Applied By	Ackley and Essman	Kimmet
Appl. Entry Date	May-14-2020	Jun-25-2020
Air Temperature Start, Stop	64 64 F	66 66 F
% Relative Humidity Start, Stop	32 32	80 80
Wind Velocity+Dir. Start	10 MPH SE	8 MPH W
Wind Velocity+Dir. Stop	10 MPH SE	8 MPH W
Wind Velocity+Dir. Max	11 MPH SE	8 MPH W
Wet Leaves (Y/N)	N no	Y yes
Soil Temperature	62 F	69 F
Soil Moisture	NORMAL	SLIWET
Soil Surface Condition	MEDIUM	MEDIUM
% Cloud Cover	25	30
Next Moisture Occurred On	May-14-2020	Jun-25-2020
Time to Next Moisture	14 HR	1 DAY
Moisture 6 Hours after Appl.	0 IN	0 IN
Moisture 1 Week after Appl.	2.52 IN	0.09 IN

Crop Stage At Each Application

	A		B	
Crop 1 Code, BBCH Scale	GLXMA	BSOY	GLXMA	BSOY
Days after Emergence	-12		30	
Stage Majority, Percent			14	100
Height Average			8	IN
Height Minimum, Maximum			6	10

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Pest Stage At Each Application

	A	B
Pest 1 Code, Type, Scale	AMBTR W	AMBTR W
Stage Majority, Percent	18	80
Stage Minimum, Percent	14	
Stage Maximum, Percent	19	
Height Average	6	IN
Height Minimum, Maximum	4	16
Density Average	56	PLA/m2
Density Min, Max	48	64
Pest 2 Code, Type, Scale	SETFA W	SETFA W
Stage Majority, Percent	16	80
Stage Minimum, Percent	14	
Stage Maximum, Percent	19	
Height Average	4	IN
Height Minimum, Maximum	2	6
Density Average	52	PLA/m2
Density Min, Max	28	92
Pest 3 Code, Type, Scale	ECHCG W	ECHCG W
Stage Majority, Percent	16	80
Stage Minimum, Percent	14	
Stage Maximum, Percent	19	
Height Average	4	IN
Height Minimum, Maximum	2	4
Density Average	15	PLA/m2
Density Min, Max	0	48
Pest 4 Code, Type, Scale	ABUTH W	ABUTH W
Stage Majority, Percent	16	80
Stage Minimum, Percent	14	
Stage Maximum, Percent	18	
Height Average	4	IN
Height Minimum, Maximum	2	4
Density Average	0	PLA/m2
Density Min, Max	0	0
Pest 5 Code, Type, Scale	CHEAL W	CHEAL W
Stage Majority, Percent	19	90
Stage Minimum, Percent	14	
Stage Maximum, Percent	19	
Height Average	4	IN
Height Minimum, Maximum	2	10
Density Average	8	PLA/m2
Density Min, Max	0	24
Pest 6 Code, Type, Scale	AMARE W	AMARE W
Stage Majority, Percent	18	80
Stage Minimum, Percent	14	
Stage Maximum, Percent	19	
Height Average	4	IN
Height Minimum, Maximum	2	6
Density Average	2	PLA/m2
Density Min, Max	0	8
Pest 7 Code, Type, Scale	IPOHE W	IPOHE W
Stage Majority, Percent	18	80
Stage Minimum, Percent	16	
Stage Maximum, Percent	19	
Height Average	2	IN
Height Minimum, Maximum	2	4
Density Average	1	PLA/m2
Density Min, Max	0	4

Application Equipment

	A	B
Appl. Equipment	6' TTI	10' TTI
Equipment Type	BACCAI	BACCAI
Operation Pressure	44 PSI	44 PSI
Nozzle Type	TTI	TTI
Nozzle Size	1110015	110015
Nozzle Spacing	18 IN	18 IN
Boom Length	6.67 FT	10 FT
Boom Height	20 IN	20 IN
Ground Speed	3 MPH	3 MPH
Carrier	WATER	WATER
Application Amount	15 GAL/AC	15 GAL/AC
Mix Size	1 L	2 L
Propellant	COMCO2	COMCO2
Tank Mix (Y/N)		Y yes

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Context	Date	By	Notes
STATUS	Mar-17-2020	Dr. Mark M. Loux	Automatically added by ARM: Trial Status updated to 'S' during trial creation.
STATUS	Mar-27-2020	Dr. Mark M. Loux	Automatically added by ARM: Trial Status updated to 'S' during trial creation.
STATUS	Mar-27-2020	Dr. Mark M. Loux	Automatically added by ARM: Trial Status updated to 'S' during trial creation.
STATUS	May-14-2020	Dr. Mark M. Loux	Automatically added by ARM: Trial Status updated to 'E' when Planting Date entered.
STATUS	May-28-2020	Dr. Mark M. Loux	Automatically added by ARM: Trial Status updated to 'E' when Initiation Date entered.

SE Definitions

	1.	2.	3.
Rating Timing	1	2	3
SE Name	ZUSW001	ZUSX001	ZUSX052_C3
SE Description	%Control	%Phyto-	YIELD/A
Part Rated	PLANT	General PLANT	GRAIN
Rating Type	CONTRO	PHYGEN	YIELD
Rating Unit	%	%	BU
Sample Size	1	PLOT 1	PLOT FT2
Collection Basis	1	PLOT 1	PLOT 1 PLOT
Reporting Basis	1	PLOT 1	PLOT 1 A
Calculation	NC	NC	IN
Number of Subsamples			1
ARM Action Codes			@YLDLBBUADM[1,2]

Instructions:

CROPS: RR2 Xtend Soybeans

● The soybean seeds used in this trial should contain the Roundup Ready 2 Xtend (tolerant to dicamba and glyphosate) trait

TARGETS: Gly-R, PPO-R, Multiple-R, or difficult to control dicot weeds and annual grass weeds, AMBTR, AMBEL, IPOSS, ABUTH, XANST, AMATA, AMAPA

CRITICAL PROTOCOL TASKS:

- This protocol is for medium textured soils - loam, silt loam, silt (organic matter generally < 3%)
- Start with a clean weed-free seedbed before making the preemergence application.
- If the scientist has the ability to irrigate and an activating rainfall is not received within 7 days of application please apply 0.5" of irrigation water.

Data requirements include:

- **Crop:** At all applications – growth stage (BBCH) and height. At establishment - variety, attributes (including AI traits), and planting date, method, rate, equipment, depth, and row spacing
- Including date of crop emergence in the Crop Description section of ARM
- **Pest – Weed:** growth stage range (BBCH or number of leaves) and height required at each application, density, attributes (identify AI resistance), natural/artificial population
- **Application Time Weather:** beginning/ending temps (air and soil), %RH, wind details; wet leaves (Y/N); soil moisture; cloud cover.
- **Applications via Liquids:** spray volume, nozzle/type and screens, spray pressure, ground speed, boom height, carrier, propellant
- **Soil:** sand:silt:clay, %OM, pH, CEC, and soil texture
- **Trial Rainfall and Irrigation:** overall moisture conditions, closest weather station, and rainfall/irrigation data from planting until four (4) weeks after application, including first activating rainfall/Irrigation date and amount following each application

EXPERIMENTAL DESIGN AND PLOT DIMENSIONS:

- RCBD, four (4) replications, minimum suggested plot size of 10 x 30 ft, treating at least the center 5 ft of each plot
Nozzles: Nozzle selection is at the discretion of the scientist
 - Spray volume = minimum of 15 GPA
- Application codes/Timing:
- Application A: PRE - Trial should be weed-free at planting

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- Application B: POST - application to weeds when they reach 2 to 4" in PRE treatment #4 or V4 soybean but no later than 45 days after planting

FORMULATION OBSERVATIONS:

- Please inform the Syngenta contact if any abnormal characteristics, such as excessive settling, separation, nozzle clogging due to particulate matter, etc. are observed with the A23372A formulation by e-mail or phone.

MAINTENANCE DETAILS:

- No other residual herbicides should be applied to the trial site. If a burndown treatment is needed it should be applied across the entire trial site including the checks and running checks and should not contain any residual herbicide components.

ASSESSMENT TIMING SUMMARY:

Assessment at the following dates:

- EVALUATION 1:** 7 +/- 1 day after emergence - PHYGEN
- EVALUATION 2:** 21 +/-2 days days after emergence - PHYGEN, WEED CONTROL and **PHOTOS (see below)**
- EVALUATION 3:** 14 d (+/-3) after post application - PHYGEN and CONTROL
- EVALUATION 4:** 28 d (+/-3) after post application - PHYGEN and CONTROL
- EVALUATION 5:** At Harvest or Maturity - CONTROL and **PHOTOS (see below)**

Yield (BU/A) - OPTIONAL:

- EVALUATION 6:** Soybean yield at maturity in bu/A.

PHOTOS: If interesting results are visible, please take pictures of treatments that exhibit differences. Select a representative replication at an appropriate assessment time.

ASSESSMENT DETAILS:

*Use "SE" files attached to the protocol to help standardize evaluations

PHYGEN, General Phytotoxicity (%/Plot), (ZUSX001): Visually assess crop injury (%) due to the treatment (ignoring any environmental stress affect) at the time of the assessment. PHYGEN represents an overall phytotoxicity assessment and could include necrosis, chlorosis, stunting, epinasty, etc. PHYGEN ratings range from 0 to 100%, with the untreated check (or running check) representing 0% PHYGEN and complete death representing 100% PHYGEN. Compare the treated crop to the untreated check (or running checks) in each replicate. If no phytotoxicity is observed, record data as zeroes in ARM for each requested assessment date. Describe any symptomology in the conclusions section.

WEED CONTROL (%/Plot), (ZUSW001): Visually assess % weed control due to the treatment for each weed species independently. Identify genus and species of each weed. **Document known resistant types in the pest description tab in the Attributes field even if only a small percentage is resistant.** Compare the treated plots to the untreated check (or running check) within each replicate to determine % weed control. Ratings range from 100% being complete control and 0% representing weed populations/growth similar to what is observed in the untreated check. Only assess species present at a sufficient density/consistency for reliable ratings.

PHOTOS: Take photos of any relevant plots showing good control along with a photo of check and a competitive standard at that same time. Photos should be compiled by the Syngenta trial manager (including photos from cooperators), labeled, and saved in the "G" drive folder named "2020-Herbicide-PRT-Photos". Instructions for photo taking and labeling can be found on the "Bioteam Image Capture Instructions.docx" and "2020 Syngenta Field Trial Photo Instructions - Plot.docx" file in that folder. Save your photos under the pertinent subfolder for the protocol and create a subfolder for the trial manager name.

REPORT DATA BY: 10/09/2020

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OTHER NOTES:

CROP DESTRUCT:

Plots, and/or harvested material from plots, from this trial must be destroyed to ensure that no plant material enters the food or feed system. Any exception can only be granted, in writing, from Syngenta Crop Protection.

DESIGN CODES:

A23372A = SMOC/MTZ/ Cloransulam Premix

Pest Type	W Weed	W Weed	W Weed	W Weed	W Weed
Pest Code	SETFA	ECHCG	AMBTR	AMARE	ABUTH
Pest Scientific Name	Setaria faberi	Echinochloa cr>	Ambrosia trifi>	Amaranthus ret>	Abutilon theop>
Pest Name	foxtail, giant	barnyardgrass	ragweed, giant	pigweed, redro>	velvetleaf
Crop Type, Code					
BBCH Scale					
Crop Scientific Name					
Crop Name					
Rating Date	Jun-24-2020	Jun-24-2020	Jun-24-2020	Jun-24-2020	Jun-24-2020
Rating Type	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO
Rating Unit	%	%	%	%	%
Number of Subsamples	1	1	1	1	1
Assessed By	Lamb	Lamb	Lamb	Lamb	Lamb
Data Entry Date	Jul-2-2020	Jul-2-2020	Jul-2-2020	Jul-2-2020	Jul-2-2020
Days After First/Last Applic.	42 42	42 42	42 42	42 42	42 42
Trt-Eval Interval	0 DA-B	0 DA-B	0 DA-B	0 DA-B	0 DA-B
Plant-Eval Interval	42 DP-1	42 DP-1	42 DP-1	42 DP-1	42 DP-1
Days After Emergence	30 DE-1	30 DE-1	30 DE-1	30 DE-1	30 DE-1
Number of Decimals	0	0	0	0	0

Trt No.	Treatment Name	Rate	Other Rate	Other Unit	Appl Unit Code	1*	2*	3*	4*	5*
1	UTC					0 d	0 c	0 d	0 c	0 c
2	Tavium	1.49 lb ai/a	3.53 pt/a		A	76 b	80 a	40 abc	90 b	98 ab
	2 Intact	0.5 % v/v	0.5 % v/v		A					
	2 Tavium	1.49 lb ai/a	3.53 pt/a		B					
	2 Roundup Powermax	0.91 lb ae/a	26 oz/a		B					
	2 Class Act Ridion	1 % v/v	1 % v/v		B					
	2 Intact	0.5 % v/v	0.5 % v/v		B					
3	Tavium	1.49 lb ai/a	3.53 pt/a		A	84 ab	89 a	25 c	100 a	100 a
	3 Tricor	0.28 lb ai/a	6 oz/a		A					
	3 Intact	0.5 % v/v	0.5 % v/v		A					
	3 Tavium	1.49 lb ai/a	3.53 pt/a		B					
	3 Roundup Powermax	0.91 lb ae/a	26 oz/a		B					
	3 Class Act Ridion	1 % v/v	1 % v/v		B					
	3 Intact	0.5 % v/v	0.5 % v/v		B					
4	Tavium	1.49 lb ai/a	3.53 pt/a		A	85 ab	86 a	43 abc	100 a	100 a
	4 Tricor	0.28 lb ai/a	6 oz/a		A					
	4 Intact	0.5 % v/v	0.5 % v/v		A					
	4 Sequence	2.3 lb ai/a	3.5 pt/a		B					
	4 N Pak AMS	2.5 % v/v	2.5 % v/v		B					

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Pest Type	W Weed	W Weed	W Weed	W Weed	W Weed
Pest Code	SETFA	ECHCG	AMBTR	AMARE	ABUTH
Pest Scientific Name	Setaria faberi	Echinochloa cr>	Ambrosia trifi>	Amaranthus ret>	Abutilon theop>
Pest Name	foxtail, giant	barnyardgrass	ragweed, giant	pigweed, redro>	velvetleaf
Crop Type, Code					
BBCH Scale					
Crop Scientific Name					
Crop Name					
Rating Date	Jun-24-2020	Jun-24-2020	Jun-24-2020	Jun-24-2020	Jun-24-2020
Rating Type	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO
Rating Unit	%	%	%	%	%
Number of Subsamples	1	1	1	1	1
Assessed By	Lamb	Lamb	Lamb	Lamb	Lamb
Data Entry Date	Jul-2-2020	Jul-2-2020	Jul-2-2020	Jul-2-2020	Jul-2-2020
Days After First/Last Applic.	42 42	42 42	42 42	42 42	42 42
Trt-Eval Interval	0 DA-B	0 DA-B	0 DA-B	0 DA-B	0 DA-B
Plant-Eval Interval	42 DP-1	42 DP-1	42 DP-1	42 DP-1	42 DP-1
Days After Emergence	30 DE-1	30 DE-1	30 DE-1	30 DE-1	30 DE-1
Number of Decimals	0	0	0	0	0

Trt No.	Treatment Name	Rate	Other Rate	Other Unit	Appl Unit Code	1*	2*	3*	4*	5*
5	Tavium	1.49 lb ai/a	3.53 pt/a		A	81 ab	85 a	40 abc	95 ab	98 ab
5	Tricor	0.28 lb ai/a	6 oz/a		A					
5	Intact	0.5 % v/v	0.5 % v/v		A					
5	Prefix	1.32 lb ai/a	2 pt/a		B					
5	Roundup Powermax	0.91 lb ae/a	26 oz/a		B					
5	N Pak AMS	2.5 % v/v	2.5 % v/v		B					
6	Tavium	1.49 lb ai/a	3.53 pt/a		A	76 b	79 a	45 abc	100 a	93 b
6	Canopy Blend	0.106 lb ai/a	2.9 oz/a		A					
6	Intact	0.5 % v/v	0.5 % v/v		A					
6	Tavium	1.49 lb ai/a	3.53 pt/a		B					
6	Roundup Powermax	0.91 lb ae/a	26 oz/a		B					
6	Class Act Ridion	1 % v/v	1 % v/v		B					
6	Intact	0.5 % v/v	0.5 % v/v		B					
7	Tavium	1.49 lb ai/a	3.53 pt/a		A	91 ab	94 a	43 abc	100 a	100 a
7	Prefix	1.32 lb ai/a	2 pt/a		A					
7	Intact	0.5 % v/v	0.5 % v/v		A					
7	Sequence	2.3 lb ai/a	3.5 pt/a		B					
7	N Pak AMS	2.5 % v/v	2.5 % v/v		B					
8	Xtendimax	0.5 lb ae/a	22 oz/a		A	50 c	59 b	33 bc	89 b	94 ab
8	Intact	0.5 % v/v	0.5 % v/v		A					
8	Tavium	1.49 lb ai/a	3.53 pt/a		B					
8	Roundup Powermax	0.91 lb ae/a	26 oz/a		B					
8	Class Act Ridion	1 % v/v	1 % v/v		B					
8	Intact	0.5 % v/v	0.5 % v/v		B					
9	Boundary	1.63 lb ai/a	2 pt/a		A	84 ab	86 a	59 a	100 a	100 a
9	Firstrate	0.0263 lb ai/a	0.5 oz/a		A					
9	Tavium	1.49 lb ai/a	3.53 pt/a		B					
9	Roundup Powermax	0.91 lb ae/a	26 oz/a		B					
9	Class Act Ridion	1 % v/v	1 % v/v		B					
9	Intact	0.5 % v/v	0.5 % v/v		B					

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Pest Name	foxtail, giant	barnyardgrass	ragweed, giant	pigweed, redro>	velvetleaf
Crop Type, Code					
BBCH Scale					
Crop Scientific Name					
Crop Name					
Rating Date	Jun-24-2020	Jun-24-2020	Jun-24-2020	Jun-24-2020	Jun-24-2020
Rating Type	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO
Rating Unit	%	%	%	%	%
Number of Subsamples	1	1	1	1	1
Assessed By	Lamb	Lamb	Lamb	Lamb	Lamb
Data Entry Date	Jul-2-2020	Jul-2-2020	Jul-2-2020	Jul-2-2020	Jul-2-2020
Days After First/Last Applic.	42 42	42 42	42 42	42 42	42 42
Trt-Eval Interval	0 DA-B	0 DA-B	0 DA-B	0 DA-B	0 DA-B
Plant-Eval Interval	42 DP-1	42 DP-1	42 DP-1	42 DP-1	42 DP-1
Days After Emergence	30 DE-1	30 DE-1	30 DE-1	30 DE-1	30 DE-1
Number of Decimals	0	0	0	0	0

Trt Treatment No. Name	Rate	Other Rate	Other Rate	Appl Unit Code	1*	2*	3*	4*	5*
10 Prefix	1.32 lb ai/a	2 pt/a		A	95 a	89 a	54 ab	100 a	99 ab
10 Tricor	0.28 lb ai/a	6 oz/a		A					
10 Tavium	1.49 lb ai/a	3.53 pt/a		B					
10 Roundup Powermax	0.91 lb ae/a	26 oz/a		B					
10 Class Act Ridion	1 % v/v	1 % v/v		B					
10 Intact	0.5 % v/v	0.5 % v/v		B					
LSD P=.05					17.6	19.9	22.0	8.7	7.3
Standard Deviation					12.2	13.7	15.1	6.0	5.0
CV					16.83	18.33	39.84	6.9	5.69
Grand Mean					72.3	74.6	38.0	87.4	88.0
Levene's F					0.492	1.216	1.191	5.196	2.242
Levene's Prob(F)					0.868	0.322	0.336	0.001*	0.047*
Rank X2					.	.	.	.	.
P(Rank X2)					.	.	.	.	.
Skewness					-1.5593*	-1.754*	-0.1525	-2.5194*	-2.6423*
Kurtosis					1.7292*	2.3084*	-0.9547	4.9922*	5.4896*
Replicate F					2.081	0.849	1.927	3.088	0.465
Replicate Prob(F)					0.1263	0.4792	0.1490	0.0439	0.7091
Treatment F					21.455	16.642	4.692	105.810	153.554
Treatment Prob(F)					0.0001	0.0001	0.0008	0.0001	0.0001

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 Sponsor Contact: Dain Bruns, Syngenta

Pest Type	W Weed	W Weed	W Weed	W Weed							
Pest Code	CHEAL	SETFA	ECHCG	AMBTR							
Pest Scientific Name	Chenopodium al>	Setaria faberi	Echinochloa cr>	Ambrosia trifi>							
Pest Name	lambsquarters,>	foxtail, giant	barnyardgrass	ragweed, giant							
Crop Type, Code	C GLXMA										
BBCH Scale	BSOY										
Crop Scientific Name	Glycine max										
Crop Name	Soybean										
Rating Date	Jun-24-2020	Jul-1-2020	Jul-8-2020	Jul-8-2020							
Rating Type	CONTRO	PHYNEC	CONTRO	CONTRO							
Rating Unit	%	%	%	%							
Number of Subsamples	1	1	1	1							
Assessed By	Lamb										
Data Entry Date	Jul-2-2020		Jul-9-2020	Jul-9-2020							
Days After First/Last Applic.	42 42	49 7	56 14	56 14							
Trt-Eval Interval	0 DA-B	7 DA-B	14 DA-B	14 DA-B							
Plant-Eval Interval	42 DP-1	49 DP-1	56 DP-1	56 DP-1							
Days After Emergence	30 DE-1	37 DE-1	44 DE-1	44 DE-1							
Number of Decimals	0	0	0	0							
Trt Treatment	Rate	Other	Other	Appl	6*	7*	8*	9*	10*		
No. Name	Rate	Unit	Rate	Rate	Unit	Code					
1 UTC							0 c	0 h	0 b	0 c	0 d
2 Tavium	1.49 lb ai/a		3.53 pt/a			A	75 b	5 c	91 a	100 a	79 ab
2 Intact	0.5 % v/v		0.5 % v/v			A					
2 Tavium	1.49 lb ai/a		3.53 pt/a			B					
2 Roundup Powermax	0.91 lb ae/a		26 oz/a			B					
2 Class Act Ridion	1 % v/v		1 % v/v			B					
2 Intact	0.5 % v/v		0.5 % v/v			B					
3 Tavium	1.49 lb ai/a		3.53 pt/a			A	100 a	3 ef	98 a	100 a	76 b
3 Tricor	0.28 lb ai/a		6 oz/a			A					
3 Intact	0.5 % v/v		0.5 % v/v			A					
3 Tavium	1.49 lb ai/a		3.53 pt/a			B					
3 Roundup Powermax	0.91 lb ae/a		26 oz/a			B					
3 Class Act Ridion	1 % v/v		1 % v/v			B					
3 Intact	0.5 % v/v		0.5 % v/v			B					
4 Tavium	1.49 lb ai/a		3.53 pt/a			A	100 a	1 g	98 a	100 a	66 c
4 Tricor	0.28 lb ai/a		6 oz/a			A					
4 Intact	0.5 % v/v		0.5 % v/v			A					
4 Sequence	2.3 lb ai/a		3.5 pt/a			B					
4 N Pak AMS	2.5 % v/v		2.5 % v/v			B					

The Ohio State University

Tavium Tank mix Pre and Post Options

Trial ID: 20TAVIUM Location: Western Branch F-9 East Trial Year: 2020
 Protocol ID: 20TAVIUM Investigator: Dr. Mark M. Loux
 Project ID: H058SMAD2020US Study Director: Anthony Dobbels
 Sponsor Contact: Dain Bruns, Syngenta

Pest Type	W Weed	W Weed	W Weed	W Weed
Pest Code	CHEAL	SETFA	ECHCG	AMBTR
Pest Scientific Name	Chenopodium al>	Setaria faberi	Echinochloa cr>	Ambrosia trifi>
Pest Name	lambquarters,>	foxtail, giant	barnyardgrass	ragweed, giant
Crop Type, Code	C GLXMA			
BBCH Scale	BSOY			
Crop Scientific Name	Glycine max			
Crop Name	Soybean			
Rating Date	Jun-24-2020	Jul-1-2020	Jul-8-2020	Jul-8-2020
Rating Type	CONTRO	PHYNEC	CONTRO	CONTRO
Rating Unit	%	%	%	%
Number of Subsamples	1	1	1	1
Assessed By	Lamb			
Data Entry Date	Jul-2-2020		Jul-9-2020	Jul-9-2020
Days After First/Last Applic.	42 42	49 7	56 14	56 14
Trt-Eval Interval	0 DA-B	7 DA-B	14 DA-B	14 DA-B
Plant-Eval Interval	42 DP-1	49 DP-1	56 DP-1	56 DP-1
Days After Emergence	30 DE-1	37 DE-1	44 DE-1	44 DE-1
Number of Decimals	0	0	0	0

Trt No.	Treatment Name	Rate	Unit	Other Rate	Other Unit	Appl Code	6*	7*	8*	9*	10*
5	Tavium	1.49 lb ai/a		3.53 pt/a		A	98 a	7 a	100 a	100 a	65 c
5	Tricor	0.28 lb ai/a		6 oz/a		A					
5	Intact	0.5 % v/v		0.5 % v/v		A					
5	Prefix	1.32 lb ai/a		2 pt/a		B					
5	Roundup Powermax	0.91 lb ae/a		26 oz/a		B					
5	N Pak AMS	2.5 % v/v		2.5 % v/v		B					
6	Tavium	1.49 lb ai/a		3.53 pt/a		A	100 a	4 cd	95 a	100 a	78 ab
6	Canopy Blend	0.106 lb ai/a		2.9 oz/a		A					
6	Intact	0.5 % v/v		0.5 % v/v		A					
6	Tavium	1.49 lb ai/a		3.53 pt/a		B					
6	Roundup Powermax	0.91 lb ae/a		26 oz/a		B					
6	Class Act Ridion	1 % v/v		1 % v/v		B					
6	Intact	0.5 % v/v		0.5 % v/v		B					
7	Tavium	1.49 lb ai/a		3.53 pt/a		A	100 a	1 g	95 a	100 a	64 c
7	Prefix	1.32 lb ai/a		2 pt/a		A					
7	Intact	0.5 % v/v		0.5 % v/v		A					
7	Sequence	2.3 lb ai/a		3.5 pt/a		B					
7	N Pak AMS	2.5 % v/v		2.5 % v/v		B					
8	Xtendimax	0.5 lb ae/a		22 oz/a		A	75 b	6 b	93 a	90 b	85 a
8	Intact	0.5 % v/v		0.5 % v/v		A					
8	Tavium	1.49 lb ai/a		3.53 pt/a		B					
8	Roundup Powermax	0.91 lb ae/a		26 oz/a		B					
8	Class Act Ridion	1 % v/v		1 % v/v		B					
8	Intact	0.5 % v/v		0.5 % v/v		B					
9	Boundary	1.63 lb ai/a		2 pt/a		A	95 a	2 f	92 a	100 a	76 b
9	Firstrate	0.0263 lb ai/a		0.5 oz/a		A					
9	Tavium	1.49 lb ai/a		3.53 pt/a		B					
9	Roundup Powermax	0.91 lb ae/a		26 oz/a		B					
9	Class Act Ridion	1 % v/v		1 % v/v		B					
9	Intact	0.5 % v/v		0.5 % v/v		B					

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Tavium Tank mix Pre and Post Options

Trial ID: 20TAVIUM Location: Western Branch F-9 East Trial Year: 2020
 Protocol ID: 20TAVIUM Investigator: Dr. Mark M. Loux
 Project ID: H058SMAD2020US Study Director: Anthony Dobbels
 Sponsor Contact: Dain Bruns, Syngenta

Pest Type	W Weed	W Weed	W Weed	W Weed
Pest Code	CHEAL	SETFA	ECHCG	AMBTR
Pest Scientific Name	Chenopodium al>	Setaria faberi	Echinochloa cr>	Ambrosia trifi>
Pest Name	lambquarters,>	foxtail, giant	barnyardgrass	ragweed, giant
Crop Type, Code	C GLXMA			
BBCH Scale	BSOY			
Crop Scientific Name	Glycine max			
Crop Name	Soybean			
Rating Date	Jun-24-2020	Jul-1-2020	Jul-8-2020	Jul-8-2020
Rating Type	CONTRO	PHYNEC	CONTRO	CONTRO
Rating Unit	%	%	%	%
Number of Subsamples	1	1	1	1
Assessed By	Lamb			
Data Entry Date	Jul-2-2020		Jul-9-2020	Jul-9-2020
Days After First/Last Applic.	42 42	49 7	56 14	56 14
Trt-Eval Interval	0 DA-B	7 DA-B	14 DA-B	14 DA-B
Plant-Eval Interval	42 DP-1	49 DP-1	56 DP-1	56 DP-1
Days After Emergence	30 DE-1	37 DE-1	44 DE-1	44 DE-1
Number of Decimals	0	0	0	0

Trt No.	Treatment Name	Rate	Unit	Other Rate	Other Unit	Appl Code	6*	7*	8*	9*	10*
10	Prefix	1.32 lb ai/a		2 pt/a		A	100 a	3 de	96 a	100 a	85 a
10	Tricor	0.28 lb ai/a		6 oz/a		A					
10	Tavium	1.49 lb ai/a		3.53 pt/a		B					
10	Roundup Powermax	0.91 lb ae/a		26 oz/a		B					
10	Class Act Ridion	1 % v/v		1 % v/v		B					
10	Intact	0.5 % v/v		0.5 % v/v		B					
LSD P=.05							10.1	0.8	10.1	9.2	8.0
Standard Deviation							7.0	0.6	6.9	6.3	5.5
CV							8.26	17.71	8.1	7.11	8.14
Grand Mean							84.3	3.2	85.7	89.0	67.4
Levene's F							1.105	0.844	0.609	1.00	0.566
Levene's Prob(F)							0.389	0.582	0.779	0.461	0.813
Rank X2							.	.	.	.	.
P(Rank X2)							.	.	.	.	.
Skewness							-2.1633*	0.4874	-2.5256*	-2.6094*	-2.1096*
Kurtosis							3.6146*	-0.6137	5.0601*	5.2444*	3.9062*
Replicate F							1.841	2.250	1.679	1.000	1.185
Replicate Prob(F)							0.1635	0.1053	0.1949	0.4079	0.3341
Treatment F							80.771	64.500	75.865	98.778	82.330
Treatment Prob(F)							0.0001	0.0001	0.0001	0.0001	0.0001

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Tavium Tank mix Pre and Post Options

Trial ID: 20TAVIUM Location: Western Branch F-9 East Trial Year: 2020
 Protocol ID: 20TAVIUM Investigator: Dr. Mark M. Loux
 Project ID: H058SMAD2020US Study Director: Anthony Dobbels
 Sponsor Contact: Dain Bruns, Syngenta

Pest Type	W Weed	W Weed	W Weed	W Weed	W Weed			
Pest Code	AMARE	ABUTH	CHEAL	SETFA	ECHCG			
Pest Scientific Name	Amaranthus ret>	Abutilon theop>	Chenopodium al>	Setaria faberi	Echinochloa cr>			
Pest Name	pigweed, redro>	velvetleaf	lambsquarters,>	foxtail, giant	barnyardgrass			
Crop Type, Code								
BBCH Scale								
Crop Scientific Name								
Crop Name								
Rating Date	Jul-8-2020	Jul-8-2020	Jul-8-2020	Jul-22-2020	Jul-22-2020			
Rating Type	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO			
Rating Unit	%	%	%	%	%			
Number of Subsamples Assessed By	1	1	1	1	1			
Data Entry Date	Jul-9-2020	Jul-9-2020	Jul-9-2020	Jul-27-2020	Jul-27-2020			
Days After First/Last Applic.	56 14	56 14	56 14	70 28	70 28			
Trt-Eval Interval	14 DA-B	14 DA-B	14 DA-B	28 DA-B	28 DA-B			
Plant-Eval Interval	56 DP-1	56 DP-1	56 DP-1	70 DP-1	70 DP-1			
Days After Emergence	44 DE-1	44 DE-1	44 DE-1	58 DE-1	58 DE-1			
Number of Decimals	0	0	0	0	0			
Trt Treatment No. Name	Rate	Other Other Rate Rate	Appl Unit Code	11*	12*	13*	14*	15*
1 UTC				0 c	0 b	0 c	0 d	0 e
2 Tavium	1.49 lb ai/a	3.53 pt/a	A	100 a	95 a	95 ab	85 bc	90 bcd
2 Intact	0.5 % v/v	0.5 % v/v	A					
2 Tavium	1.49 lb ai/a	3.53 pt/a	B					
2 Roundup Powermax	0.91 lb ae/a	26 oz/a	B					
2 Class Act Ridion	1 % v/v	1 % v/v	B					
2 Intact	0.5 % v/v	0.5 % v/v	B					
3 Tavium	1.49 lb ai/a	3.53 pt/a	A	100 a	100 a	100 a	90 ab	96 ab
3 Tricor	0.28 lb ai/a	6 oz/a	A					
3 Intact	0.5 % v/v	0.5 % v/v	A					
3 Tavium	1.49 lb ai/a	3.53 pt/a	B					
3 Roundup Powermax	0.91 lb ae/a	26 oz/a	B					
3 Class Act Ridion	1 % v/v	1 % v/v	B					
3 Intact	0.5 % v/v	0.5 % v/v	B					
4 Tavium	1.49 lb ai/a	3.53 pt/a	A	100 a	100 a	91 b	95 ab	100 a
4 Tricor	0.28 lb ai/a	6 oz/a	A					
4 Intact	0.5 % v/v	0.5 % v/v	A					
4 Sequence	2.3 lb ai/a	3.5 pt/a	B					
4 N Pak AMS	2.5 % v/v	2.5 % v/v	B					

The Ohio State University

Tavium Tank mix Pre and Post Options

Trial ID: 20TAVIUM Location: Western Branch F-9 East Trial Year: 2020
 Protocol ID: 20TAVIUM Investigator: Dr. Mark M. Loux
 Project ID: H058SMAD2020US Study Director: Anthony Dobbels
 Sponsor Contact: Dain Bruns, Syngenta

Pest Type	W Weed	W Weed	W Weed	W Weed	W Weed
Pest Code	AMARE	ABUTH	CHEAL	SETFA	ECHCG
Pest Scientific Name	Amaranthus ret>	Abutilon theop>	Chenopodium al>	Setaria faberi	Echinochloa cr>
Pest Name	pigweed, redro>	velvetleaf	lambsquarters,>	foxtail, giant	barnyardgrass
Crop Type, Code					
BBCH Scale					
Crop Scientific Name					
Crop Name					
Rating Date	Jul-8-2020	Jul-8-2020	Jul-8-2020	Jul-22-2020	Jul-22-2020
Rating Type	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO
Rating Unit	%	%	%	%	%
Number of Subsamples	1	1	1	1	1
Assessed By					
Data Entry Date	Jul-9-2020	Jul-9-2020	Jul-9-2020	Jul-27-2020	Jul-27-2020
Days After First/Last Applic.	56 14	56 14	56 14	70 28	70 28
Trt-Eval Interval	14 DA-B	14 DA-B	14 DA-B	28 DA-B	28 DA-B
Plant-Eval Interval	56 DP-1	56 DP-1	56 DP-1	70 DP-1	70 DP-1
Days After Emergence	44 DE-1	44 DE-1	44 DE-1	58 DE-1	58 DE-1
Number of Decimals	0	0	0	0	0

Trt No.	Treatment Name	Rate	Unit	Other Rate	Other Unit	Appl Code	11*	12*	13*	14*	15*
5	Tavium	1.49 lb ai/a		3.53 pt/a		A	100 a	95 a	100 a	95 ab	96 ab
5	Tricor	0.28 lb ai/a		6 oz/a		A					
5	Intact	0.5 % v/v		0.5 % v/v		A					
5	Prefix	1.32 lb ai/a		2 pt/a		B					
5	Roundup Powermax	0.91 lb ae/a		26 oz/a		B					
5	N Pak AMS	2.5 % v/v		2.5 % v/v		B					
6	Tavium	1.49 lb ai/a		3.53 pt/a		A	100 a	95 a	100 a	79 c	86 cd
6	Canopy Blend	0.106 lb ai/a		2.9 oz/a		A					
6	Intact	0.5 % v/v		0.5 % v/v		A					
6	Tavium	1.49 lb ai/a		3.53 pt/a		B					
6	Roundup Powermax	0.91 lb ae/a		26 oz/a		B					
6	Class Act Ridion	1 % v/v		1 % v/v		B					
6	Intact	0.5 % v/v		0.5 % v/v		B					
7	Tavium	1.49 lb ai/a		3.53 pt/a		A	100 a	100 a	93 ab	95 ab	95 ab
7	Prefix	1.32 lb ai/a		2 pt/a		A					
7	Intact	0.5 % v/v		0.5 % v/v		A					
7	Sequence	2.3 lb ai/a		3.5 pt/a		B					
7	N Pak AMS	2.5 % v/v		2.5 % v/v		B					
8	Xtendimax	0.5 lb ae/a		22 oz/a		A	98 b	100 a	98 ab	89 abc	81 d
8	Intact	0.5 % v/v		0.5 % v/v		A					
8	Tavium	1.49 lb ai/a		3.53 pt/a		B					
8	Roundup Powermax	0.91 lb ae/a		26 oz/a		B					
8	Class Act Ridion	1 % v/v		1 % v/v		B					
8	Intact	0.5 % v/v		0.5 % v/v		B					
9	Boundary	1.63 lb ai/a		2 pt/a		A	100 a	100 a	100 a	89 abc	100 a
9	Firstrate	0.0263 lb ai/a		0.5 oz/a		A					
9	Tavium	1.49 lb ai/a		3.53 pt/a		B					
9	Roundup Powermax	0.91 lb ae/a		26 oz/a		B					
9	Class Act Ridion	1 % v/v		1 % v/v		B					
9	Intact	0.5 % v/v		0.5 % v/v		B					

The Ohio State University

Tavium Tank mix Pre and Post Options

Trial ID: 20TAVIUM Location: Western Branch F-9 East Trial Year: 2020
 Protocol ID: 20TAVIUM Investigator: Dr. Mark M. Loux
 Project ID: H058SMAD2020US Study Director: Anthony Dobbels
 Sponsor Contact: Dain Bruns, Syngenta

Pest Type	W Weed	W Weed	W Weed	W Weed	W Weed
Pest Code	AMARE	ABUTH	CHEAL	SETFA	ECHCG
Pest Scientific Name	Amaranthus ret>	Abutilon theop>	Chenopodium al>	Setaria faberi	Echinochloa cr>
Pest Name	pigweed, redro>	velvetleaf	lambsquarters,>	foxtail, giant	barnyardgrass
Crop Type, Code					
BBCH Scale					
Crop Scientific Name					
Crop Name					
Rating Date	Jul-8-2020	Jul-8-2020	Jul-8-2020	Jul-22-2020	Jul-22-2020
Rating Type	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO
Rating Unit	%	%	%	%	%
Number of Subsamples	1	1	1	1	1
Assessed By					
Data Entry Date	Jul-9-2020	Jul-9-2020	Jul-9-2020	Jul-27-2020	Jul-27-2020
Days After First/Last Applic.	56 14	56 14	56 14	70 28	70 28
Trt-Eval Interval	14 DA-B	14 DA-B	14 DA-B	28 DA-B	28 DA-B
Plant-Eval Interval	56 DP-1	56 DP-1	56 DP-1	70 DP-1	70 DP-1
Days After Emergence	44 DE-1	44 DE-1	44 DE-1	58 DE-1	58 DE-1
Number of Decimals	0	0	0	0	0

Trt Treatment No. Name	Rate	Other Rate	Other Rate	Appl Unit Code	11*	12*	13*	14*	15*
10 Prefix	1.32 lb ai/a	2 pt/a		A	100 a	100 a	100 a	96 a	93 abc
10 Tricor	0.28 lb ai/a	6 oz/a		A					
10 Tavium	1.49 lb ai/a	3.53 pt/a		B					
10 Roundup Powermax	0.91 lb ae/a	26 oz/a		B					
10 Class Act Ridion	1 % v/v	1 % v/v		B					
10 Intact	0.5 % v/v	0.5 % v/v		B					
LSD P=.05					2.3	7.3	8.0	11.2	8.5
Standard Deviation					1.6	5.0	5.5	7.7	5.8
CV					1.76	5.65	6.27	9.52	6.96
Grand Mean					89.8	88.5	87.6	81.2	83.7
Levene's F					1.00	1.037	5.629	0.321	1.713
Levene's Prob(F)					0.461	0.435	0.001*	0.962	0.13
Rank X2					.	.	.	.	.
P(Rank X2)					.	.	.	.	.
Skewness					-2.7585*	-2.6489*	-2.6026*	-2.2681*	-2.3722*
Kurtosis					5.9303*	5.5039*	5.3429*	4.251*	4.5722*
Replicate F					1.000	1.000	0.428	3.868	5.862
Replicate Prob(F)					0.4079	0.4079	0.7345	0.0201	0.0032
Treatment F					1592.111	155.600	127.302	56.421	106.134
Treatment Prob(F)					0.0001	0.0001	0.0001	0.0001	0.0001

The Ohio State University

Tavium Tank mix Pre and Post Options

Trial ID: 20TAVIUM Location: Western Branch F-9 East Trial Year: 2020
 Protocol ID: 20TAVIUM Investigator: Dr. Mark M. Loux
 Project ID: H058SMAD2020US Study Director: Anthony Dobbels
 Sponsor Contact: Dain Bruns, Syngenta

Pest Type	W Weed	W Weed	W Weed	W Weed	W Weed
Pest Code	AMBTR	AMARE	IPOHE	CHEAL	SETFA
Pest Scientific Name	Ambrosia trifida	Amaranthus retrofractus	Ipomoea hederacea	Chenopodium album	Setaria faberii
Pest Name	ragweed, giant	pigweed, redtop	morningglory, >	lambsquarters, >	foxtail, giant
Crop Type, Code					
BBCH Scale					
Crop Scientific Name					
Crop Name					
Rating Date	Jul-22-2020	Jul-22-2020	Jul-22-2020	Jul-22-2020	Aug-5-2020
Rating Type	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO
Rating Unit	%	%	%	%	%
Number of Subsamples	1	1	1	1	1
Assessed By					
Data Entry Date	Jul-27-2020	Jul-27-2020	Jul-27-2020	Jul-27-2020	Aug-10-2020
Days After First/Last Applic.	70 28	70 28	70 28	70 28	84 42
Trt-Eval Interval	28 DA-B	28 DA-B	28 DA-B	28 DA-B	42 DA-B
Plant-Eval Interval	70 DP-1	70 DP-1	70 DP-1	70 DP-1	84 DP-1
Days After Emergence	58 DE-1	58 DE-1	58 DE-1	58 DE-1	72 DE-1
Number of Decimals	0	0	0	0	0

Trt Treatment	Rate	Other	Other	Appl	16*	17*	18*	19*	20*	
No. Name	Rate	Unit	Rate	Unit	Code					
1 UTC					A	0 e	0 c	0 c	0 c	0 e
2 Tavium	1.49 lb ai/a		3.53 pt/a		A	80 ab	100 a	100 a	100 a	80 d
2 Intact	0.5 % v/v		0.5 % v/v		A					
2 Tavium	1.49 lb ai/a		3.53 pt/a		B					
2 Roundup Powermax	0.91 lb ae/a		26 oz/a		B					
2 Class Act Ridion	1 % v/v		1 % v/v		B					
2 Intact	0.5 % v/v		0.5 % v/v		B					
3 Tavium	1.49 lb ai/a		3.53 pt/a		A	76 b	100 a	91 ab	100 a	88 bcd
3 Tricor	0.28 lb ai/a		6 oz/a		A					
3 Intact	0.5 % v/v		0.5 % v/v		A					
3 Tavium	1.49 lb ai/a		3.53 pt/a		B					
3 Roundup Powermax	0.91 lb ae/a		26 oz/a		B					
3 Class Act Ridion	1 % v/v		1 % v/v		B					
3 Intact	0.5 % v/v		0.5 % v/v		B					
4 Tavium	1.49 lb ai/a		3.53 pt/a		A	63 c	100 a	100 a	100 a	91 abc
4 Tricor	0.28 lb ai/a		6 oz/a		A					
4 Intact	0.5 % v/v		0.5 % v/v		A					
4 Sequence	2.3 lb ai/a		3.5 pt/a		B					
4 N Pak AMS	2.5 % v/v		2.5 % v/v		B					

The Ohio State University

Tavium Tank mix Pre and Post Options

Trial ID: 20TAVIUM Location: Western Branch F-9 East Trial Year: 2020
 Protocol ID: 20TAVIUM Investigator: Dr. Mark M. Loux
 Project ID: H058SMAD2020US Study Director: Anthony Dobbels
 Sponsor Contact: Dain Bruns, Syngenta

Pest Type	W Weed	W Weed	W Weed	W Weed	W Weed
Pest Code	AMBTR	AMARE	IPOHE	CHEAL	SETFA
Pest Scientific Name	Ambrosia trifida	Amaranthus retrofractus	Ipomoea hederifolia	Chenopodium album	Setaria faberii
Pest Name	ragweed, giant	pigweed, redtop	morningglory, >	lambsquarters, >	foxtail, giant
Crop Type, Code					
BBCH Scale					
Crop Scientific Name					
Crop Name					
Rating Date	Jul-22-2020	Jul-22-2020	Jul-22-2020	Jul-22-2020	Aug-5-2020
Rating Type	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO
Rating Unit	%	%	%	%	%
Number of Subsamples	1	1	1	1	1
Assessed By					
Data Entry Date	Jul-27-2020	Jul-27-2020	Jul-27-2020	Jul-27-2020	Aug-10-2020
Days After First/Last Applic.	70 28	70 28	70 28	70 28	84 42
Trt-Eval Interval	28 DA-B	28 DA-B	28 DA-B	28 DA-B	42 DA-B
Plant-Eval Interval	70 DP-1	70 DP-1	70 DP-1	70 DP-1	84 DP-1
Days After Emergence	58 DE-1	58 DE-1	58 DE-1	58 DE-1	72 DE-1
Number of Decimals	0	0	0	0	0

Trt No.	Treatment Name	Rate	Unit	Other Rate	Other Unit	Appl Code	16*	17*	18*	19*	20*
5	Tavium	1.49 lb ai/a		3.53 pt/a		A	55 d	100 a	90 ab	100 a	98 a
5	Tricor	0.28 lb ai/a		6 oz/a		A					
5	Intact	0.5 % v/v		0.5 % v/v		A					
5	Prefix	1.32 lb ai/a		2 pt/a		B					
5	Roundup Powermax	0.91 lb ae/a		26 oz/a		B					
5	N Pak AMS	2.5 % v/v		2.5 % v/v		B					
6	Tavium	1.49 lb ai/a		3.53 pt/a		A	74 b	100 a	95 a	100 a	81 cd
6	Canopy Blend	0.106 lb ai/a		2.9 oz/a		A					
6	Intact	0.5 % v/v		0.5 % v/v		A					
6	Tavium	1.49 lb ai/a		3.53 pt/a		B					
6	Roundup Powermax	0.91 lb ae/a		26 oz/a		B					
6	Class Act Ridion	1 % v/v		1 % v/v		B					
6	Intact	0.5 % v/v		0.5 % v/v		B					
7	Tavium	1.49 lb ai/a		3.53 pt/a		A	64 c	100 a	81 b	93 b	95 ab
7	Prefix	1.32 lb ai/a		2 pt/a		A					
7	Intact	0.5 % v/v		0.5 % v/v		A					
7	Sequence	2.3 lb ai/a		3.5 pt/a		B					
7	N Pak AMS	2.5 % v/v		2.5 % v/v		B					
8	Xtendimax	0.5 lb ae/a		22 oz/a		A	85 a	100 b	96 a	98 a	81 cd
8	Intact	0.5 % v/v		0.5 % v/v		A					
8	Tavium	1.49 lb ai/a		3.53 pt/a		B					
8	Roundup Powermax	0.91 lb ae/a		26 oz/a		B					
8	Class Act Ridion	1 % v/v		1 % v/v		B					
8	Intact	0.5 % v/v		0.5 % v/v		B					
9	Boundary	1.63 lb ai/a		2 pt/a		A	79 ab	100 a	100 a	100 a	90 abc
9	Firstrate	0.0263 lb ai/a		0.5 oz/a		A					
9	Tavium	1.49 lb ai/a		3.53 pt/a		B					
9	Roundup Powermax	0.91 lb ae/a		26 oz/a		B					
9	Class Act Ridion	1 % v/v		1 % v/v		B					
9	Intact	0.5 % v/v		0.5 % v/v		B					

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Tavium Tank mix Pre and Post Options

Trial ID: 20TAVIUM Location: Western Branch F-9 East Trial Year: 2020
 Protocol ID: 20TAVIUM Investigator: Dr. Mark M. Loux
 Project ID: H058SMAD2020US Study Director: Anthony Dobbels
 Sponsor Contact: Dain Bruns, Syngenta

Pest Type	W Weed	W Weed	W Weed	W Weed	W Weed
Pest Code	AMBTR	AMARE	IPOHE	CHEAL	SETFA
Pest Scientific Name	Ambrosia trifida	Amaranthus retrofractus	Ipomoea hederacea	Chenopodium album	Setaria faberii
Pest Name	ragweed, giant	pigweed, redtop	morningglory, >	lambsquarters, >	foxtail, giant
Crop Type, Code					
BBCH Scale					
Crop Scientific Name					
Crop Name					
Rating Date	Jul-22-2020	Jul-22-2020	Jul-22-2020	Jul-22-2020	Aug-5-2020
Rating Type	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO
Rating Unit	%	%	%	%	%
Number of Subsamples	1	1	1	1	1
Assessed By					
Data Entry Date	Jul-27-2020	Jul-27-2020	Jul-27-2020	Jul-27-2020	Aug-10-2020
Days After First/Last Applic.	70 28	70 28	70 28	70 28	84 42
Trt-Eval Interval	28 DA-B	28 DA-B	28 DA-B	28 DA-B	42 DA-B
Plant-Eval Interval	70 DP-1	70 DP-1	70 DP-1	70 DP-1	84 DP-1
Days After Emergence	58 DE-1	58 DE-1	58 DE-1	58 DE-1	72 DE-1
Number of Decimals	0	0	0	0	0

Trt No.	Treatment Name	Rate	Unit	Other Rate	Other Unit	Appl Code	16*	17*	18*	19*	20*
10	Prefix	1.32 lb ai/a		2 pt/a		A	80 ab	100 a	93 a	100 a	89 a-d
10	Tricor	0.28 lb ai/a		6 oz/a		A					
10	Tavium	1.49 lb ai/a		3.53 pt/a		B					
10	Roundup Powermax	0.91 lb ae/a		26 oz/a		B					
10	Class Act Ridion	1 % v/v		1 % v/v		B					
10	Intact	0.5 % v/v		0.5 % v/v		B					
LSD P=.05							7.0	0.5	11.1	4.5	9.7
Standard Deviation							4.8	0.3	7.7	3.1	6.7
CV							7.37	0.35	9.05	3.48	8.47
Grand Mean							65.5	90.0	84.6	88.9	79.2
Levene's F							1.206	1.00	2.769	8.379	1.238
Levene's Prob(F)							0.328	0.461	0.017*	0.001*	0.31
Rank X2							.	.	.	.	.
P(Rank X2)							.	.	.	.	.
Skewness							-1.9123*	-2.7712*	-2.3501*	-2.7042*	-2.245*
Kurtosis							3.2046*	5.9772*	4.4401*	5.725*	4.2374*
Replicate F							3.857	1.000	1.970	1.650	6.131
Replicate Prob(F)							0.0203	0.4079	0.1422	0.2013	0.0026
Treatment F							106.143	39956.560	62.557	409.787	71.853
Treatment Prob(F)							0.0001	0.0001	0.0001	0.0001	0.0001

The Ohio State University

Tavium Tank mix Pre and Post Options

Trial ID: 20TAVIUM Location: Western Branch F-9 East Trial Year: 2020
 Protocol ID: 20TAVIUM Investigator: Dr. Mark M. Loux
 Project ID: H058SMAD2020US Study Director: Anthony Dobbels
 Sponsor Contact: Dain Bruns, Syngenta

Pest Type	W Weed	W Weed	W Weed	W Weed	W Weed
Pest Code	ECHCG	AMBTR	AMARE	IPOHE	CHEAL
Pest Scientific Name	Echinochloa cr>	Ambrosia trifi>	Amaranthus ret>	Ipomoea hederata>	Chenopodium al>
Pest Name	barnyardgrass	ragweed, giant	pigweed, redro>	morningglory, >	lambsquarters,>
Crop Type, Code					
BBCH Scale					
Crop Scientific Name					
Crop Name					
Rating Date	Aug-5-2020	Aug-5-2020	Aug-5-2020	Aug-5-2020	Aug-5-2020
Rating Type	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO
Rating Unit	%	%	%	%	%
Number of Subsamples	1	1	1	1	1
Assessed By					
Data Entry Date	Aug-10-2020	Aug-10-2020	Aug-10-2020	Aug-10-2020	Aug-10-2020
Days After First/Last Applic.	84 42	84 42	84 42	84 42	84 42
Trt-Eval Interval	42 DA-B	42 DA-B	42 DA-B	42 DA-B	42 DA-B
Plant-Eval Interval	84 DP-1	84 DP-1	84 DP-1	84 DP-1	84 DP-1
Days After Emergence	72 DE-1	72 DE-1	72 DE-1	72 DE-1	72 DE-1
Number of Decimals	0	0	0	0	0

Trt No.	Treatment Name	Rate	Unit	Other Rate	Other Unit	Appl Code	21*	22*	23*	24*	25*
1	UTC						0 c	0 e	0 c	0 c	0 b
2	Tavium	1.49 lb ai/a		3.53 pt/a		A	100 a	88 a	100 a	95 a	98 a
	2 Intact	0.5 % v/v		0.5 % v/v		A					
	2 Tavium	1.49 lb ai/a		3.53 pt/a		B					
	2 Roundup Powermax	0.91 lb ae/a		26 oz/a		B					
	2 Class Act Ridion	1 % v/v		1 % v/v		B					
	2 Intact	0.5 % v/v		0.5 % v/v		B					
3	Tavium	1.49 lb ai/a		3.53 pt/a		A	100 a	76 b	100 a	90 ab	100 a
	3 Tricor	0.28 lb ai/a		6 oz/a		A					
	3 Intact	0.5 % v/v		0.5 % v/v		A					
	3 Tavium	1.49 lb ai/a		3.53 pt/a		B					
	3 Roundup Powermax	0.91 lb ae/a		26 oz/a		B					
	3 Class Act Ridion	1 % v/v		1 % v/v		B					
	3 Intact	0.5 % v/v		0.5 % v/v		B					
4	Tavium	1.49 lb ai/a		3.53 pt/a		A	100 a	65 cd	100 a	96 a	96 a
	4 Tricor	0.28 lb ai/a		6 oz/a		A					
	4 Intact	0.5 % v/v		0.5 % v/v		A					
	4 Sequence	2.3 lb ai/a		3.5 pt/a		B					
	4 N Pak AMS	2.5 % v/v		2.5 % v/v		B					

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Tavium Tank mix Pre and Post Options

Trial ID: 20TAVIUM Location: Western Branch F-9 East Trial Year: 2020
 Protocol ID: 20TAVIUM Investigator: Dr. Mark M. Loux
 Project ID: H058SMAD2020US Study Director: Anthony Dobbels
 Sponsor Contact: Dain Bruns, Syngenta

Pest Type	W Weed	W Weed	W Weed	W Weed	W Weed
Pest Code	ECHCG	AMBTR	AMARE	IPOHE	CHEAL
Pest Scientific Name	Echinochloa cr>	Ambrosia trifi>	Amaranthus ret>	Ipomoea hederata>	Chenopodium al>
Pest Name	barnyardgrass	ragweed, giant	pigweed, redro>	morningglory, >	lambsquarters,>
Crop Type, Code					
BBCH Scale					
Crop Scientific Name					
Crop Name					
Rating Date	Aug-5-2020	Aug-5-2020	Aug-5-2020	Aug-5-2020	Aug-5-2020
Rating Type	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO
Rating Unit	%	%	%	%	%
Number of Subsamples	1	1	1	1	1
Assessed By					
Data Entry Date	Aug-10-2020	Aug-10-2020	Aug-10-2020	Aug-10-2020	Aug-10-2020
Days After First/Last Applic.	84 42	84 42	84 42	84 42	84 42
Trt-Eval Interval	42 DA-B	42 DA-B	42 DA-B	42 DA-B	42 DA-B
Plant-Eval Interval	84 DP-1	84 DP-1	84 DP-1	84 DP-1	84 DP-1
Days After Emergence	72 DE-1	72 DE-1	72 DE-1	72 DE-1	72 DE-1
Number of Decimals	0	0	0	0	0

Trt Treatment No. Name	Rate	Rate Unit	Other Rate	Other Rate Unit	Appl Code	21*	22*	23*	24*	25*
5 Tavium	1.49 lb ai/a		3.53 pt/a		A	100 a	55 d	100 a	95 a	100 a
5 Tricor	0.28 lb ai/a		6 oz/a		A					
5 Intact	0.5 % v/v		0.5 % v/v		A					
5 Prefix	1.32 lb ai/a		2 pt/a		B					
5 Roundup Powermax	0.91 lb ae/a		26 oz/a		B					
5 N Pak AMS	2.5 % v/v		2.5 % v/v		B					
6 Tavium	1.49 lb ai/a		3.53 pt/a		A	100 a	75 bc	100 a	100 a	100 a
6 Canopy Blend	0.106 lb ai/a		2.9 oz/a		A					
6 Intact	0.5 % v/v		0.5 % v/v		A					
6 Tavium	1.49 lb ai/a		3.53 pt/a		B					
6 Roundup Powermax	0.91 lb ae/a		26 oz/a		B					
6 Class Act Ridion	1 % v/v		1 % v/v		B					
6 Intact	0.5 % v/v		0.5 % v/v		B					
7 Tavium	1.49 lb ai/a		3.53 pt/a		A	95 ab	58 d	100 a	81 b	95 a
7 Prefix	1.32 lb ai/a		2 pt/a		A					
7 Intact	0.5 % v/v		0.5 % v/v		A					
7 Sequence	2.3 lb ai/a		3.5 pt/a		B					
7 N Pak AMS	2.5 % v/v		2.5 % v/v		B					
8 Xtendimax	0.5 lb ae/a		22 oz/a		A	91 b	84 ab	95 b	100 a	98 a
8 Intact	0.5 % v/v		0.5 % v/v		A					
8 Tavium	1.49 lb ai/a		3.53 pt/a		B					
8 Roundup Powermax	0.91 lb ae/a		26 oz/a		B					
8 Class Act Ridion	1 % v/v		1 % v/v		B					
8 Intact	0.5 % v/v		0.5 % v/v		B					
9 Boundary	1.63 lb ai/a		2 pt/a		A	100 a	79 ab	100 a	100 a	100 a
9 Firstrate	0.0263 lb ai/a		0.5 oz/a		A					
9 Tavium	1.49 lb ai/a		3.53 pt/a		B					
9 Roundup Powermax	0.91 lb ae/a		26 oz/a		B					
9 Class Act Ridion	1 % v/v		1 % v/v		B					
9 Intact	0.5 % v/v		0.5 % v/v		B					

The Ohio State University

Tavium Tank mix Pre and Post Options

Trial ID: 20TAVIUM Location: Western Branch F-9 East Trial Year: 2020
 Protocol ID: 20TAVIUM Investigator: Dr. Mark M. Loux
 Project ID: H058SMAD2020US Study Director: Anthony Dobbels
 Sponsor Contact: Dain Bruns, Syngenta

Pest Type	W Weed	W Weed	W Weed	W Weed	W Weed
Pest Code	ECHCG	AMBTR	AMARE	IPOHE	CHEAL
Pest Scientific Name	Echinochloa cr>	Ambrosia trifi>	Amaranthus ret>	Ipomoea hederata>	Chenopodium al>
Pest Name	barnyardgrass	ragweed, giant	pigweed, redro>	morningglory, >	lambsquarters,>
Crop Type, Code					
BBCH Scale					
Crop Scientific Name					
Crop Name					
Rating Date	Aug-5-2020	Aug-5-2020	Aug-5-2020	Aug-5-2020	Aug-5-2020
Rating Type	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO
Rating Unit	%	%	%	%	%
Number of Subsamples Assessed By	1	1	1	1	1
Data Entry Date	Aug-10-2020	Aug-10-2020	Aug-10-2020	Aug-10-2020	Aug-10-2020
Days After First/Last Applic.	84 42	84 42	84 42	84 42	84 42
Trt-Eval Interval	42 DA-B	42 DA-B	42 DA-B	42 DA-B	42 DA-B
Plant-Eval Interval	84 DP-1	84 DP-1	84 DP-1	84 DP-1	84 DP-1
Days After Emergence	72 DE-1	72 DE-1	72 DE-1	72 DE-1	72 DE-1
Number of Decimals	0	0	0	0	0

Trt Treatment No. Name	Rate	Unit	Other Rate	Other Rate	Unit Code	21*	22*	23*	24*	25*
10 Prefix	1.32 lb ai/a		2 pt/a		A	100 a	84 ab	100 a	95 a	100 a
10 Tricor	0.28 lb ai/a		6 oz/a		A					
10 Tavium	1.49 lb ai/a		3.53 pt/a		B					
10 Roundup Powermax	0.91 lb ae/a		26 oz/a		B					
10 Class Act Ridion	1 % v/v		1 % v/v		B					
10 Intact	0.5 % v/v		0.5 % v/v		B					
LSD P=.05						6.3	11.1	4.6	11.4	6.1
Standard Deviation						4.4	7.7	3.2	7.9	4.2
CV						4.91	11.56	3.53	9.25	4.77
Grand Mean						88.6	66.3	89.5	85.3	88.6
Levene's F						3.458	1.956	1.00	1.246	0.704
Levene's Prob(F)						0.005*	0.082	0.461	0.306	0.701
Rank X2						.	.	.	.	.
P(Rank X2)						.	.	.	.	.
Skewness						-2.6508*	-1.5732*	-2.7228*	-2.3611*	-2.674*
Kurtosis						5.5092*	2.4252*	5.7837*	4.4521*	5.6069*
Replicate F						1.879	1.379	1.000	1.647	2.556
Replicate Prob(F)						0.1569	0.2704	0.4079	0.2018	0.0761
Treatment F						206.480	45.427	396.556	59.750	218.090
Treatment Prob(F)						0.0001	0.0001	0.0001	0.0001	0.0001

The Ohio State University

Tavium Tank mix Pre and Post Options

Trial ID: 20TAVIUM Location: Western Branch F-9 East Trial Year: 2020
Protocol ID: 20TAVIUM Investigator: Dr. Mark M. Loux
Project ID: H058SMAD2020US Study Director: Anthony Dobbels
Sponsor Contact: Dain Bruns, Syngenta

Pest Type

W, Weed = Weed or volunteer crop

Pest Code

SETFA, Setaria faberi, foxtail, giant = US
ECHCG, Echinochloa crus-galli, barnyardgrass = US
AMBTR, Ambrosia trifida, ragweed, giant = US
AMARE, Amaranthus retroflexus, pigweed, redroot = US
ABUTH, Abutilon theophrasti, velvetleaf = US
CHEAL, Chenopodium album, lambsquarters, common = US
IPOHE, Ipomoea hederacea, morningglory, ivyleaf = US

Crop Type, Code

C = EPPO species (Bayer) codes
GLXMA, BSOY, Glycine max, Soybean = US

Rating Type

CONTRO = control / burndown or knockdown
PHYNEC = phytotoxicity - necrosis /burn

Rating Unit

% = percent

Plant-Eval Interval

42 DP-1 = 1 GLXMA May-13-2020
49 DP-1 = 1 GLXMA May-13-2020
56 DP-1 = 1 GLXMA May-13-2020
70 DP-1 = 1 GLXMA May-13-2020
84 DP-1 = 1 GLXMA May-13-2020