

Iowa State University

Evaluation of various herbicide programs in combination with cultivation

Trial ID: KC-tillage-01 Study Dir.: Pringnitz
 Location: Kanawha - E10 Investigator: Owen/Hartzler/Pringnitz

CROP AND WEED DESCRIPTION

Weed	Code	Common Name	Scientific Name
1.	CHEAL	LAMBSQUARTERS, COMMON	CHENOPODIUM ALBUM L.
2.	ABUTH	VELVETLEAF	ABUTILON THEOPHRASTI MEDIK.
3.	SETFA	FOXTAIL, GIANT	SETARIA FABERI HERRM.
4.	AMATU	WATERHEMP, TALL	AMARANTHUS TUBERCULATOS (MOQ.) J.SAUER

Crop 1: corn **Variety:** Golden Harvest 8562
Planting Date: May-14-01 **Planting Method:** DIRECT DRILLED
Rate: 29900 S/A **Depth:** 1.75 in
Row Spacing: 30 in
Soil Temperature: 67 F **Soil Moisture:** dry

SITE AND DESIGN

Plot Width, Unit: 15 FT **Plot Length, Unit:** 40 FT **Reps:** 4
Tillage Type: conventional **Study Design:** SPLIT-PLOT

	Previous Crops	Previous Pesticides	Year
1.	soybeans	Roundup Ultra	2000

MAINTENANCE

Field Prep./Maintenance: 2 passes field cultivator, Spring 2001.
Fertility: received 250 lbs of 18-46-0 and 249 lbs 82-0-0 in Fall of 2000.

SOIL DESCRIPTION

% OM: 6.4 **Texture:** clay loam
pH: 6.95 **Soil Name:** Canisteo, Nicollet

Closest Weather Station: Kanawha S Farm **Distance:** 1 **Unit:** mi

APPLICATION DESCRIPTION

	A	B	C
Application Date:	May-14-01	Jun-20-01	Jun-27-01
Time of Day:	2 pm	2 pm	1pm
Application Method:	SPRAY	SPRAY	tillage
Application Timing:	PRE	POST	POST
Applic. Placement:	broadcast	broadcast	
Air Temp., Unit:	87 F	77 F	
% Relative Humidity:	30	31	
Wind Velocity, Unit:	17 mph	4 mph	
Dew Presence (Y/N):	n	n	
Soil Temp., Unit:	67 F	79 F	
Soil Moisture:	ADEQUATE	ADEQUATE	
% Cloud Cover:	0	40	

CROP STAGE AT EACH APPLICATION

	A	B	C
Crop 1 Code, Stage:	corn planting	corn V5-V6	corn
Stage Scale:	DESC		
Height, Unit:	0 inch	16 inch	26 inch

Iowa State University

WEED STAGE AT EACH APPLICATION

	A	B	C
Weed 1 Code, Stage:	CHEAL 0	CHEAL 3	CHEAL 5
Stage Scale:	inch	inch	inch
Density, Unit:		40 FT2	
Weed 2 Code, Stage:	ABUTH 0	ABUTH 4	ABUTH 5
Stage Scale:	inch	inch	inch
Density, Unit:		2 FT2	2 FT2
Weed 3 Code, Stage:	SETFA 0	SETFA 5	SETFA 7
Stage Scale:	inch	inch	inch
Density, Unit:		4 FT2	4 FT2
Weed 4 Code, Stage:	AMATU 0	AMATU	AMATU
Stage Scale:	height		

APPLICATION EQUIPMENT

	A	B	C
Appl. Equipment:	TerraPro	TerraPro	cultivate
Operating Pressure:	32	32	
Nozzle Type:	flat-fan	flat-fan	
Nozzle Size:	TT11002	TT11002	
Nozzle Spacing, Unit:	20 inch	20 inch	
Boom Length, Unit:	15 ft	10 ft	
Boom Height, Unit:	15 in	30 in	
Ground Speed, Unit:	2.6 mph	2.6 mph	
Carrier:	water	water	
Spray Volume, Unit:	20	20	
Propellant:	CO2	CO2	
Tank Mix (Y/N):	Y	Y	

Iowa State University

Evaluation of various herbicide programs in combination with cultivation

Trial ID: KC-tillage-01
Location: Kanawha - E10

Study Dir.: Pringnitz
Investigator: Owen/Hartzler/Pringnitz

Weed Code					SETFA	CHEAL	ABUTH	SETFA	CHEAL	ABUTH	Corn yield bu/acre Oct-27-01	
Rating Data Type					control	control	control	control	control	control		
Rating Unit					%	%	%	%	%	%		
Rating Date					Jun-20-01	Jun-20-01	Jun-20-01	Jul-10-01	Jul-10-01	Jul-10-01		
Trt No.	Treatment Name	Rate	Grow Unit	Appl Stg Code								
1	Balance Pro Surpass Atrazine No cultivation	2.25 40 1	FL OZ/A FL OZ/A LB A/A	pre pre pre	A A A	99.0 a	99.0 a	99.0 a	90.8 ab	99.0 a	98.0 a	145.75 cd
2	Balance Pro Surpass Atrazine Cultivation	2.25 40 1	FL OZ/A FL OZ/A LB A/A	pre pre pre	A A A	97.0 a	99.0 a	99.0 a	93.5 a	98.0 a	99.0 a	151.25 bcd
3	Balance Pro Surpass Atrazine No cultivation	1.13 20 0.5	FL OZ/A FL OZ/A LB A/A	pre pre pre	A A A	92.3 ab	98.0 a	98.0 a	89.8 ab	94.3 a	94.5 a	159.77 a-d
4	Balance Pro Surpass Atrazine Cultivation	1.13 20 0.5	FL OZ/A FL OZ/A LB A/A	pre pre pre	A A A	98.0 a	98.0 a	96.8 a	98.5 a	99.0 a	99.0 a	164.15 abc
5	Leadoff Steadfast Clarity COC 28% UAN No cultivation	30 0.5 4 1 2	FL OZ/A OZ/A FL OZ/A QT/A QT/A	pre post post post post	A B B B B	83.8 b	96.0 a	87.5 ab	94.5 a	98.0 a	94.5 a	182.58 a
6	Leadoff Steadfast Clarity COC 28% UAN Cultivation	30 0.5 4 1 2	FL OZ/A OZ/A FL OZ/A QT/A QT/A	pre post post post post	A B B B B	90.0 ab	91.3 a	82.5 bc	99.0 a	99.0 a	98.0 a	175.60 a
7	Leadoff Steadfast Clarity COC 28% UAN No cultivation	15 0.25 2 1 2	FL OZ/A OZ/A FL OZ/A QT/A QT/A	pre post post post post	A B B B B	75.0 c	81.3 b	73.8 c	92.3 a	97.0 a	89.8 a	183.80 a
8	Leadoff Steadfast Clarity COC 28% UAN Cultivation	15 0.25 2 1 2	FL OZ/A OZ/A FL OZ/A QT/A QT/A	pre post post post post	A B B B B	73.8 c	77.5 bc	75.0 bc	99.0 a	98.0 a	96.8 a	178.25 a
9	Dual II Magnum Northstar NIS AMS No cultivation	2 5 0.25 3	PT/A OZ/A % V/V LB/A	pre post post post	A B B B	93.5 ab	83.8 b	83.8 bc	88.5 ab	98.0 a	99.0 a	172.10 ab
10	Dual II Magnum Northstar NIS AMS Cultivation	2 5 0.25 3	PT/A OZ/A % V/V LB/A	pre post post post	A B B B	92.3 ab	77.5 bc	86.3 bc	93.3 a	99.0 a	99.0 a	169.95 ab
11	Dual II Magnum Northstar NIS AMS No cultivation	1 2.5 0.25 3	PT/A OZ/A % V/V LB/A	pre post post post	A B B B	91.3 ab	63.8 d	75.0 bc	81.3 b	88.8 b	92.3 a	174.42 a

Iowa State University

Weed Code						SETFA	CHEAL	ABUTH	SETFA	CHEAL	ABUTH	Corn
Rating Data Type						control	control	control	control	control	control	yield
Rating Unit						%	%	%	%	%	%	bu/acre
Rating Date						Jun-20-01	Jun-20-01	Jun-20-01	Jul-10-01	Jul-10-01	Jul-10-01	Oct-27-01
Trt No.	Treatment Name	Rate	Unit	Grow Stg	Appl Code							
12	Dual II Magnum Northstar NIS AMS Cultivation	1 2.5 0.25 3	PT/A OZ/A % V/V LB/A	pre post post post	A B B B	87.5 ab	70.0 cd	76.3 bc	92.5 a	99.0 a	99.0 a	183.88 a
13	Weedy check					0.0	0.0	0.0	0.0	0.0	0.0	141.23
LSD (P=.05)						7.24	6.91	8.33	7.25	5.07	5.57	14.647
Friedman's X2						8.36	9.39	9.20	8.47	4.47	5.14	21.763
Standard Deviation						4.88	4.65	5.61	4.88	3.41	3.75	9.859
CV						5.91	5.84	7.06	5.7	3.8	4.21	5.87

Means followed by same letter do not significantly differ (P=.05, Student-Newman-Keuls)
Mean separations are based on the complete error term.