

# Ohio State University Horticulture and Crop Science

## Corn Optimization Trial

Title No. 2:  
 Trial ID: 10OPTIMIZE Protocol ID: 10OPTIMIZE  
 Location: WESTERN BRANCH BIG E Study Director: Anthony F. Dobbels  
 Project ID: Investigator: Dr. Mark M. Loux  
 Sponsor Contact:

### General Trial Information

**Study Director:** Anthony F. Dobbels **Title:** Research Specialist  
**Investigator:** Dr. Mark M. Loux **Title:** Professor

### Trial Location

**City:** South Charleston **Latitude of LL Corner °:** 39.85801 N  
**State/Prov.:** Ohio **Longitude of LL Corner °:** 83.66996 W  
**Postal Code:** 45368 **Altitude of LL Corner, Unit:** 1087.00 FT  
**Country:** USA

### Personnel

**Study Director:** Anthony F. Dobbels **Title:** Research Specialist  
**Affiliation:** The Ohio State University  
**Address:** 7721 South Charleston Pike  
**Location:** South Charleston OH  
**Postal Code:** 45368 **E-mail:** dobbels.1@osu.edu  
**Investigator:** Dr. Mark M. Loux **Title:** Professor  
**Affiliation:** The Ohio State University  
**Address:** 222 Kottman Hall, 2021 Coffey Road  
**Location:** Columbus OH  
**Postal Code:** 43210 **E-mail:** loux.1@osu.edu

### Crop Description

**Crop 1:** ZEAMX Zea mays Corn  
**Variety:** DEKALB DKC 60-51 **Description:** RR  
**BBCH Scale:** BCOR **Planting Date:** 4/30/10  
**Planting Method:** SEEDED seeded **Rate, Unit:** 32097 S/A  
**Depth, Unit:** 2 IN  
**Row Spacing, Unit:** 30 IN  
**Seed Bed:** MEDIUM medium **Soil Temperature, Unit:** 58 F  
**Soil Moisture:** DRY dry **Emergence Date:** 5/8/10  
**Harvested Width, Unit:** 5 FT **Harvested Length, Unit:** 30 FT

**Crop 2:** TRZAW Triticum aestivum (winter) Winter wheat  
**Variety:** PIONEER 25R47  
**BBCH Scale:** BCER **Planting Date:** 4/30/10  
**Planting Method:** DRILLE drilled **Rate, Unit:** 100 LB/A  
**Depth, Unit:** 1 IN  
**Row Spacing, Unit:** 7.5 IN  
**Seed Bed:** MEDIUM medium **Soil Temperature, Unit:** 58 F  
**Soil Moisture:** DRY dry **Emergence Date:** 5/6/10

### Pest Description

**Pest 1 Type:** W **Code:** SETFA *Setaria faberi*  
**Common Name:** Giant foxtail

**Pest 2 Type:** W **Code:** AMBTR *Ambrosia trifida*  
**Common Name:** Giant ragweed

**Pest 3 Type:** W **Code:** CHEAL *Chenopodium album*  
**Common Name:** Common lambsquarters

**Pest 4 Type:** W **Code:** ABUTH *Abutilon theophrasti*  
**Common Name:** Velvetleaf

### Site and Design

**Plot Width, Unit:** 10 FT **Site Type:** FIELD field  
**Plot Length, Unit:** 30 FT **Experimental Unit:** 1 PLOT plot  
**Plot Area, Unit:** 300 FT2 **Tillage Type:** CONTIL conventional-till  
**Replications:** 6 **Study Design:** RACOB� Randomized Complete Block (RCB)  
**Untreated Arrangement:** INCLUDED single control randomized in each block

### Soil Description

**Description Name:** Big E South  
**% OM:** 2.2 **Texture:** SICL silty clay loam  
**pH:** 6.1 **Soil Name:** Kokomo  
**CEC:** 14

# Ohio State University Horticulture and Crop Science

## Application Description

	A	B	C	D	E
Application Date:	5/1/10	5/16/10	5/24/10	5/31/10	6/17/10
Time of Day:	6:00 A.M.	8:30 A.M.	8:00 A.M.	10:00 A.M.	9:00 A.M.
Application Method:	SPRAY	SPRAY	SPRAY	SPRAY	SPRAY
Application Timing:	PRE	1 LF	3 LF	5 LF	10 LF
Application Placement:	BROSOI	BROFO	BROFO	BROFO	BROFO
Applied By:	Dobbels	Dobbels	Reeb	Loux	Dobbels
Air Temperature, Unit:	66 F	56 F	77 F	78 F	75 F
% Relative Humidity:	60	73	65	72	72
Wind Velocity, Unit:	7 MPH	6 MPH	3 MPH	6 MPH	1 MPH
Wind Direction:	W	NE	E	WSW	NW
Dew Presence (Y/N):	N no	N no	N no	N no	Y yes
Soil Temperature, Unit:	58 F	59 F	64 F	74 F	70 F
Soil Moisture:	DRY	NORMAL	NORMAL	SLIDRY	SLIWET
% Cloud Cover:	100	100	0	15	0
Next Rain Occurred On:	5/1/10	5/17/10	6/2/10	6/2/10	6/18/10

## Crop Stage At Each Application

	A		B		C		D		E	
Crop 1 Code, BBCH Scale:	ZEAMX	BCOR	ZEAMX	BCOR	ZEAMX	BCOR	ZEAMX	BCOR	ZEAMX	BCOR
Stage Scale Used:	BBCH		BBCH		BBCH		BBCH		BBCH	
Stage Majority, Percent:	12	100	14	100	15	100	19	100	19	100
Height, Unit:	3	IN	5	IN	13	IN	35	IN		
Height Minimum, Maximum:	3	4	5	5	12	14	30	36		
Crop 2 Code, BBCH Scale:	TRZAW	BCER	TRZAW	BCER	TRZAW	BCER	TRZAW	BCER	TRZAW	BCER
Stage Scale Used:	BBCH		BBCH		BBCH		BBCH		BBCH	
Stage Majority, Percent:	13	100	14	100	16	100	19	100		
Height, Unit:	4	IN	5	IN	6	IN	13	IN		
Height Minimum, Maximum:	4	5	2	5	4	6	12	14		

## Pest Stage At Each Application

	A		B		C		D		E	
Pest 1 Code, Type, Scale:	SETFA	W	SETFA	W	SETFA	W	SETFA	W	SETFA	W
Stage Majority, Percent:	11	100	12	100	13	100	19	100		
Height, Unit:	0.5	IN	1	IN	3	IN	16	IN		
Height Minimum, Maximum:	0.5	1	1	1	2	3	12	18		
Pest 2 Code, Type, Scale:	AMBTR	W	AMBTR	W	AMBTR	W	AMBTR	W	AMBTR	W
Stage Majority, Percent:	12	100	14	80	16	80	19	100		
Stage Minimum, Percent:			12	20	16	80				
Stage Maximum, Percent:			14	80	18	20				
Diameter, Unit:	1	IN								
Height, Unit:	2	IN	2	IN	7	IN	22	IN		
Height Minimum, Maximum:	2	3	2	3	6	8	20	24		
Pest 3 Code, Type, Scale:	CHEAL	W	CHEAL	W	CHEAL	W	CHEAL	W	CHEAL	W
Stage Majority, Percent:	11	100	12	80	14	100	19	100		
Stage Minimum, Percent:			12	80						
Stage Maximum, Percent:			14	20						
Height, Unit:	0.25	IN	1	IN	3	IN	13	IN		
Height Minimum, Maximum:	0.25	0.25	0.5	1	2	4	12	15		
Pest 4 Code, Type, Scale:	ABUTH	W	ABUTH	W	ABUTH	W	ABUTH	W	ABUTH	W
Stage Majority, Percent:			14	100	14	100	19	100		
Height, Unit:			1	IN	2	IN	14	IN		
Height Minimum, Maximum:			0.5	1	2	3	12	14		

## Application Equipment

	A		B		C		D		E	
Appl. Equipment:	BACKPACK	BACKPACK	BACKPACK	BACKPACK	BACKPACK	BACKPACK	BACKPACK	BACKPACK	BACKPACK	BACKPACK
Equipment Type:	SPRBAC	SPRBAC	SPRBAC	SPRBAC	SPRBAC	SPRBAC	SPRBAC	SPRBAC	SPRBAC	SPRBAC
Operating Pressure, Unit:	53	PSI	53	PSI	53	PSI	53	PSI	53	PSI
Nozzle Type:	TEEJET	DG	TEEJET	DG	TEEJET	DG	TEEJET	DG	TEEJET	DG
Nozzle Size:	11002		11002		11002		11002		11002	
Nozzle Spacing, Unit:	18	IN	18	IN	18	IN	18	IN	18	IN
Boom Length, Unit:	10	FT	10	FT	10	FT	10	FT	10	FT
Boom Height, Unit:	20	IN	20	IN	20	IN	20	IN	20	IN
Ground Speed, Unit:	3	MPH	3	MPH	3	MPH	3	MPH	3	MPH
Carrier:	WATER		WATER		WATER		WATER		WATER	
Spray Volume, Unit:	20	GPA	20	GPA	20	GPA	20	GPA	20	GPA
Mix Size, Unit:	3	Liters	3	Liters	3	Liters	3	Liters	3	Liters
Propellant:	CO2		CO2		CO2		CO2		CO2	

Date	By	Notes
5/7/10	Dobbels	Sprayed weed free with Gramoxone to get rid of wheat before corn emergence. Corn almost ready to spike wheat up.
5/16/10	Dobbels	Sprayed weed free with roundup and hoed 2 hours later.