

# University of Nebraska

## Liberty Link Corn

Trial ID: L0721  
Location: Havelock

Study Dir.: Kevin Horky  
Investigator: Dr. Mark Bernards

### GENERAL TRIAL INFORMATION

**Study Director:** Kevin Horky **Title:** Research Technician  
**Affiliation:** University of Nebraska Lincoln  
**Postal Code:** 68583  
**Investigator:** Dr. Mark Bernards **Title:** Ext. Weed Specialist  
**Affiliation:** University of Nebraska Lincoln  
**Postal Code:** 68583

### TRIAL LOCATION

**City:** Lincoln  
**State/Prov.:** NE  
**Postal Code:** 68583

**Conducted Under GLP (Y/N):** N

**Conducted Under GEP (Y/N):** N

### CROP AND WEED DESCRIPTION

Weed	Code	Common Name	Scientific Name
1.	HELAN	Common sunflower	Helianthus annuus
2.	AMAPA	Amaranth, Palmer	Amaranthus palmeri
3.	ABUTH	Velvetleaf	Abutilon theophrasti
4.	SETVI	Green foxtail	Setaria viridis

**Crop 1:** ZEAMX CORN, FIELD **Variety:** Pioneer 35Y62  
**Planting Date:** 1/May/2007 **Planting Method:** planted  
**Rate:** 22000 seeds/acre **Depth:** 1.5 in  
**Row Spacing:** 30 in **Seed Bed:** medium  
**Soil Temperature:** 11 c **Soil Moisture:** good **Emergence Date:** 8/May/2007

### SITE AND DESIGN

**Plot Width, Unit:** 10 FT **Plot Length, Unit:** 30 FT **Reps:** 3  
**Site Type:** field  
**Tillage Type:** conventional **Study Design:** RANDOMIZED COMPLETE BLOCK

### MAINTENANCE

**Field Prep./Maintenance:** Field was disked once, Anhydrous Ammonia was applied at rate of 120 lbs Nitrogen/acre, field was then field cultivated once.

### SOIL DESCRIPTION

**% Sand:** 7 **% OM:** 2.7 **Texture:** Silt loam  
**% Silt:** 69 **pH:** 6.8 **Soil Name:** Sharpesburg  
**% Clay:** 23 **CEC:** 26 **Fert. Level:** good

### APPLICATION DESCRIPTION

	A	B	C
<b>Application Date:</b>	2/May/2007	29/May/2007	4/Jun/2007
<b>Time of Day:</b>	7:00 pm	10:30 am	2:30 pm
<b>Application Method:</b>	Spray	Spray	Spray
<b>Application Timing:</b>	pre	epost	mpost
<b>Applic. Placement:</b>	BROSOI	BROFOL	BROFOL
<b>Air Temp., Unit:</b>	72 F	72 F	82 F
<b>% Relative Humidity:</b>	25	60	26
<b>Wind Velocity, Unit:</b>	7 mph	7 mph	8 mph
<b>Dew Presence (Y/N):</b>	n	n	n
<b>Soil Temp., Unit:</b>	11 c	16 C	15 C
<b>Soil Moisture:</b>	good	good	good
<b>% Cloud Cover:</b>	45	100	35

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## CROP STAGE AT EACH APPLICATION

	A	B	C
<b>Crop 1 Code, Stage:</b>	ZEAMX	ZEAMX	ZEAMX
<b>Stage Scale:</b>	pre	V4	V5
<b>Height, Unit:</b>		12 in	15 in

## WEED STAGE AT EACH APPLICATION

	A	B	C
<b>Weed 1 Code, Stage:</b>	HELAN	HELAN	HELAN
<b>Stage Scale:</b>	pre	5 in	9 in
<b>Density, Unit:</b>		10 m2	10 m2
<b>Weed 2 Code, Stage:</b>	AMAPA	AMAPA	AMAPA
<b>Stage Scale:</b>	pre	3 in	8 in
<b>Density, Unit:</b>		10 m2	15 m2
<b>Weed 3 Code, Stage:</b>	ABUTH	ABUTH	ABUTH
<b>Stage Scale:</b>	pre	3 in	8 in
<b>Density, Unit:</b>		5 m2	5 m2
<b>Weed 4 Code, Stage:</b>	SETVI	SETVI	SETVI
<b>Stage Scale:</b>	pre	2 in	5 in
<b>Density, Unit:</b>		5 m2	5 m2

## APPLICATION EQUIPMENT

	A	B	C
<b>Appl. Equipment:</b>	IH cub	IH cub	IH cub
<b>Operating Pressure:</b>	30	30	30
<b>Nozzle Type:</b>	Turbo Tee	Turbo Tee	Turbo Tee
<b>Nozzle Size:</b>	110015	110015	110015
<b>Nozzle Spacing, Unit:</b>	15 in	15 in	15 in
<b>Nozzles/Row:</b>	2	2	2
<b>Boom Length, Unit:</b>	10 ft	10 ft	10 ft
<b>Boom Height, Unit:</b>	18 in	24 in	30 in
<b>Ground Speed, Unit:</b>	3 mph	3 mph	3 mph
<b>Carrier:</b>	water	water	water
<b>Spray Volume, Unit:</b>	15 gpa	15 gpa	15 gpa
<b>Propellant:</b>	air	air	air

## Trial Comments

Bayer protocol MRC

Data requested

Crop Injury 7, 14, 21 DAT

Weed Control 14, 28, 56 DAT

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Trial ID: L0721

Study Dir.: Kevin Horky

Location: Havelock

Investigator: Dr. Mark Bernards

Weed Code					AMAPA	HELAN	ABUTH	SETVI	ZEAMX	HELAN	
Crop Code					ZEAMX	ZEAMX	ZEAMX	ZEAMX	ZEAMX	ZEAMX	
Rating Data Type					CONTROL	CONTROL	CONTROL	CONTROL	PHYCHL	CONTROL	
Rating Unit					%	%	%	%	%	%	
Rating Date					4/Jun/2007	4/Jun/2007	4/Jun/2007	4/Jun/2007	5/Jun/2007	18/Jun/2007	
Trt	Treatment	Rate	Unit	Grow							
No.	Name			Stg	Plot	1	2	3	4	5	6
1	Aatrex	1 lb ai/a		pre	101	99	95	90	80		99
	Liberty	22 oz/a		mpost	207	90	99	95	95		99
	Laudis	2 oz/a		mpost	305	95	95	95	99		99
	AMS	8.5 lb/100 gal		mpost							
				Mean =		95	96	93	91	.	99
2	Balance Pro	1 oz/a		pre	102	99	95	95	90		99
	Aatrex	0.5 lb ai/a		pre	201	99	90	99	95		99
	Liberty	22 oz/a		mpost	303	95	90	95	95		99
	Laudis	2 oz/a		mpost							
	AMS	8.5 lb/100 gal		mpost							
				Mean =		98	92	96	93	.	99
3	Balance Pro	1.5 oz/a		pre	103	80	99	99	95		99
	Liberty	22 oz/a		mpost	202	95	90	95	70		99
	Laudis	2 oz/a		mpost	304	90	99	95	99		99
	AMS	8.5 lb/100 gal		mpost							
				Mean =		88	96	96	88	.	99
4	Aatrex	1 lb ai/a		pre	104	95	99	95	60		99
	Liberty	22 oz/a		mpost	203	95	99	90	60		99
	Callisto	2 oz/a		mpost	307	99	90	90	95		99
	AMS	8.5 lb/100 gal		mpost							
				Mean =		96	96	92	72	.	99
5	Liberty	22 oz/a		epost	105					5	99
	Lumax	2 qt/a		epost	206					5	99
	AMS	8.5 lb/100 gal		epost	301					10	99
				Mean =		.	.	.	.	7	99
6	Liberty	22 oz/a		epost	106					5	99
	Laudis	2 oz/a		epost	204					5	99
	Define	6 oz/a		epost	302					15	99
	Aatrex	0.5 lb ai/a		epost							
	AMS	8.5 lb/100 gal		epost							
				Mean =		.	.	.	.	8	99
7	Check				107						0
					205						0
					306						0
				Mean =		.	.	.	.	.	0

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Weed Code					AMAPA	ABUTH	SETVI	HELAN	AMAPA	ABUTH	
Crop Code					ZEAMX	ZEAMX	ZEAMX	ZEAMX	ZEAMX	ZEAMX	
Rating Data Type					CONTROL	CONTROL	CONTROL	CONTROL	CONTROL	CONTROL	
Rating Unit					%	%	%	%	%	%	
Rating Date					18/Jun/2007	18/Jun/2007	18/Jun/2007	3/Jul/2007	3/Jul/2007	3/Jul/2007	
Trt No.	Treatment Name	Rate	Unit	Grow Stg	Plot	7	8	9	10	11	12
1	Aatrex	1 lb ai/a		pre	101	99	99	90	99	99	99
	Liberty	22 oz/a		mpost	207	99	99	99	99	99	99
	Laudis	2 oz/a		mpost	305	99	99	99	99	99	99
	AMS	8.5 lb/100 gal		mpost							
	Mean =					99	99	96	99	99	99
2	Balance Pro	1 oz/a		pre	102	99	99	90	99	99	99
	Aatrex	0.5 lb ai/a		pre	201	99	99	95	99	99	99
	Liberty	22 oz/a		mpost	303	99	99	95	99	99	99
	Laudis	2 oz/a		mpost							
	AMS	8.5 lb/100 gal		mpost							
	Mean =					99	99	93	99	99	99
3	Balance Pro	1.5 oz/a		pre	103	95	99	95	99	90	99
	Liberty	22 oz/a		mpost	202	99	99	95	99	99	99
	Laudis	2 oz/a		mpost	304	99	99	95	99	99	99
	AMS	8.5 lb/100 gal		mpost							
	Mean =					98	99	95	99	96	99
4	Aatrex	1 lb ai/a		pre	104	99	99	90	99	99	99
	Liberty	22 oz/a		mpost	203	99	99	99	99	99	99
	Callisto	2 oz/a		mpost	307	99	99	95	99	99	99
	AMS	8.5 lb/100 gal		mpost							
	Mean =					99	99	95	99	99	99
5	Liberty	22 oz/a		epost	105	99	99	99	99	99	99
	Lumax	2 qt/a		epost	206	99	99	99	99	99	99
	AMS	8.5 lb/100 gal		epost	301	99	99	95	99	99	99
	Mean =					99	99	98	99	99	99
6	Liberty	22 oz/a		epost	106	99	99	99	99	95	99
	Laudis	2 oz/a		epost	204	99	99	99	99	99	99
	Define	6 oz/a		epost	302	99	99	95	95	99	99
	Aatrex	0.5 lb ai/a		epost							
	AMS	8.5 lb/100 gal		epost							
	Mean =					99	99	98	98	98	99
7	Check				107	0	0	0	0	0	0
					205	0	0	0	0	0	0
					306	0	0	0	0	0	0
	Mean =					0	0	0	0	0	0

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Weed Code					SETVI	HELAN	AMAPA	ABUTH	SETVI	
Crop Code					ZEAMX	ZEAMX	ZEAMX	ZEAMX	ZEAMX	
Rating Data Type					CONTROL	CONTROL	CONTROL	CONTROL	CONTROL	
Rating Unit					%	%	%	%	%	
Rating Date					3/Jul/2007	2/Aug/2007	2/Aug/2007	2/Aug/2007	2/Aug/2007	
Trt No.	Treatment Name	Rate	Unit	Grow Stg	Plot	13	14	15	16	17
1	Aatrex	1 lb ai/a		pre	101	85	99	99	99	85
	Liberty	22 oz/a		mpost	207	99	99	99	99	95
	Laudis	2 oz/a		mpost	305	99	99	99	99	95
	AMS	8.5 lb/100 gal		mpost						
				Mean =		94	99	99	99	92
2	Balance Pro	1 oz/a		pre	102	85	99	99	99	95
	Aatrex	0.5 lb ai/a		pre	201	90	99	99	99	95
	Liberty	22 oz/a		mpost	303	90	99	99	99	95
	Laudis	2 oz/a		mpost						
	AMS	8.5 lb/100 gal		mpost						
				Mean =		88	99	99	99	95
3	Balance Pro	1.5 oz/a		pre	103	90	99	95	95	95
	Liberty	22 oz/a		mpost	202	90	99	95	99	95
	Laudis	2 oz/a		mpost	304	90	99	95	99	95
	AMS	8.5 lb/100 gal		mpost						
				Mean =		90	99	95	98	95
4	Aatrex	1 lb ai/a		pre	104	85	99	99	99	95
	Liberty	22 oz/a		mpost	203	95	99	99	99	95
	Callisto	2 oz/a		mpost	307	90	99	99	99	95
	AMS	8.5 lb/100 gal		mpost						
				Mean =		90	99	99	99	95
5	Liberty	22 oz/a		epost	105	99	99	99	99	99
	Lumax	2 qt/a		epost	206	99	99	99	99	99
	AMS	8.5 lb/100 gal		epost	301	95	99	99	99	99
				Mean =		98	99	99	99	99
6	Liberty	22 oz/a		epost	106	99	99	95	95	99
	Laudis	2 oz/a		epost	204	99	99	99	99	99
	Define	6 oz/a		epost	302	90	99	99	99	95
	Aatrex	0.5 lb ai/a		epost						
	AMS	8.5 lb/100 gal		epost						
				Mean =		96	99	98	98	98
7	Check				107	0	0	0	0	0
					205	0	0	0	0	0
					306	0	0	0	0	0
				Mean =		0	0	0	0	0

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## Liberty Link Corn

Trial ID: L0721

Study Dir.: Kevin Horkey

Location: Havelock

Investigator: Dr. Mark Bernards

Weed Code	AMAPA ZEAMX CONTROL	HELAN ZEAMX CONTROL	ABUTH ZEAMX CONTROL	SETVI ZEAMX CONTROL	ZEAMX PHYCHL	HELAN ZEAMX CONTROL				
Rating Data Type	%	%	%	%	%	%				
Rating Unit	4/Jun/2007	4/Jun/2007	4/Jun/2007	4/Jun/2007	5/Jun/2007	18/Jun/2007				
Rating Date	4/Jun/2007	4/Jun/2007	4/Jun/2007	4/Jun/2007	5/Jun/2007	18/Jun/2007				
Trt No.	Treatment Name	Rate	Unit	Grow Stg	1	2	3	4	5	6
1	Aatrex	1	lb ai/a	pre	95 a	96 a	93 a	91 a		99 a
	Liberty	22	oz/a	mpost						
	Laudis	2	oz/a	mpost						
	AMS	8.5	lb/100 gal	mpost						
2	Balance Pro	1	oz/a	pre	98 a	92 a	96 a	93 a		99 a
	Aatrex	0.5	lb ai/a	pre						
	Liberty	22	oz/a	mpost						
	Laudis	2	oz/a	mpost						
	AMS	8.5	lb/100 gal	mpost						
3	Balance Pro	1.5	oz/a	pre	88 a	96 a	96 a	88 a		99 a
	Liberty	22	oz/a	mpost						
	Laudis	2	oz/a	mpost						
	AMS	8.5	lb/100 gal	mpost						
4	Aatrex	1	lb ai/a	pre	96 a	96 a	92 a	72 a		99 a
	Liberty	22	oz/a	mpost						
	Callisto	2	oz/a	mpost						
	AMS	8.5	lb/100 gal	mpost						
5	Liberty	22	oz/a	epost					7 a	99 a
	Lumax	2	qt/a	epost						
	AMS	8.5	lb/100 gal	epost						
6	Liberty	22	oz/a	epost					8 a	99 a
	Laudis	2	oz/a	epost						
	Define	6	oz/a	epost						
	Aatrex	0.5	lb ai/a	epost						
	AMS	8.5	lb/100 gal	epost						
7	Check									0 b
LSD (P=.05)					10.7	8.5	5.9	23.2	7.2	0.0
Standard Deviation					5.4	4.3	2.9	11.6	2.0	0.0
CV					5.69	4.49	3.12	13.5	27.22	0.0
Grand Mean					94.25	95.0	94.42	86.08	7.5	84.86
Bartlett's X2					3.668	1.703	0.181	5.065	0.862	0.0
P(Bartlett's X2)					0.30	0.636	0.981	0.167	0.353	.
Replicate F					0.104	0.713	0.154	2.660	9.000	0.000
Replicate Prob(F)					0.9026	0.5273	0.8607	0.1489	0.1000	1.0000
Treatment F					1.779	0.817	1.856	2.161	1.000	0.000
Treatment Prob(F)					0.2510	0.5298	0.2379	0.1938	0.4226	1.0000

Means followed by same letter do not significantly differ (P=.05, Student-Newman-Keuls)

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

# University of Nebraska

Weed Code				AMAPA	ABUTH	SETVI	HELAN	AMAPA	ABUTH	
Crop Code				ZEAMX	ZEAMX	ZEAMX	ZEAMX	ZEAMX	ZEAMX	
Rating Data Type				CONTROL	CONTROL	CONTROL	CONTROL	CONTROL	CONTROL	
Rating Unit				%	%	%	%	%	%	
Rating Date				18/Jun/2007	18/Jun/2007	18/Jun/2007	3/Jul/2007	3/Jul/2007	3/Jul/2007	
Trt No.	Treatment Name	Rate	Unit	Grow Stg	7	8	9	10	11	12
1	Aatrex	1 lb ai/a	pre		99 a	99 a	96 a	99 a	99 a	99 a
	Liberty	22 oz/a	mpost							
	Laudis	2 oz/a	mpost							
	AMS	8.5 lb/100 gal	mpost							
2	Balance Pro	1 oz/a	pre		99 a	99 a	93 a	99 a	99 a	99 a
	Aatrex	0.5 lb ai/a	pre							
	Liberty	22 oz/a	mpost							
	Laudis	2 oz/a	mpost							
	AMS	8.5 lb/100 gal	mpost							
3	Balance Pro	1.5 oz/a	pre		98 a	99 a	95 a	99 a	96 a	99 a
	Liberty	22 oz/a	mpost							
	Laudis	2 oz/a	mpost							
	AMS	8.5 lb/100 gal	mpost							
4	Aatrex	1 lb ai/a	pre		99 a	99 a	95 a	99 a	99 a	99 a
	Liberty	22 oz/a	mpost							
	Callisto	2 oz/a	mpost							
	AMS	8.5 lb/100 gal	mpost							
5	Liberty	22 oz/a	epost		99 a	99 a	98 a	99 a	99 a	99 a
	Lumax	2 qt/a	epost							
	AMS	8.5 lb/100 gal	epost							
6	Liberty	22 oz/a	epost		99 a	99 a	98 a	98 a	98 a	99 a
	Laudis	2 oz/a	epost							
	Define	6 oz/a	epost							
	Aatrex	0.5 lb ai/a	epost							
	AMS	8.5 lb/100 gal	epost							
7	Check				0 b	0 b	0 b	0 b	0 b	0 b
LSD (P=.05)					1.6	0.0	5.0	1.6	3.6	0.0
Standard Deviation					0.9	0.0	2.8	0.9	2.0	0.0
CV					1.03	0.0	3.43	1.03	2.39	0.0
Grand Mean					84.67	84.86	82.05	84.67	84.24	84.86
Bartlett's X2					0.0	0.0	2.064	0.0	1.151	0.0
P(Bartlett's X2)					.	.	0.724	.	0.283	.
Replicate F					1.000	0.000	2.392	1.000	1.988	0.000
Replicate Prob(F)					0.3966	1.0000	0.1336	0.3966	0.1796	1.0000
Treatment F					5489.313	0.000	497.723	5489.313	1023.612	0.000
Treatment Prob(F)					0.0001	1.0000	0.0001	0.0001	0.0001	1.0000

Means followed by same letter do not significantly differ (P=.05, Student-Newman-Keuls)

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

# University of Nebraska

Weed Code				SETVI	HELAN	AMAPA	ABUTH	SETVI	
Crop Code				ZEAMX	ZEAMX	ZEAMX	ZEAMX	ZEAMX	
Rating Data Type				CONTROL	CONTROL	CONTROL	CONTROL	CONTROL	
Rating Unit				%	%	%	%	%	
Rating Date				3/Jul/2007	2/Aug/2007	2/Aug/2007	2/Aug/2007	2/Aug/2007	
Trt No.	Treatment Name	Rate	Unit	Grow Stg	13	14	15	16	17
1	Aatrex	1 lb ai/a	pre		94 a	99 a	99 a	99 a	92 b
	Liberty	22 oz/a	mpost						
	Laudis	2 oz/a	mpost						
	AMS	8.5 lb/100 gal	mpost						
2	Balance Pro	1 oz/a	pre		88 a	99 a	99 a	99 a	95 ab
	Aatrex	0.5 lb ai/a	pre						
	Liberty	22 oz/a	mpost						
	Laudis	2 oz/a	mpost						
	AMS	8.5 lb/100 gal	mpost						
3	Balance Pro	1.5 oz/a	pre		90 a	99 a	95 b	98 a	95 ab
	Liberty	22 oz/a	mpost						
	Laudis	2 oz/a	mpost						
	AMS	8.5 lb/100 gal	mpost						
4	Aatrex	1 lb ai/a	pre		90 a	99 a	99 a	99 a	95 ab
	Liberty	22 oz/a	mpost						
	Callisto	2 oz/a	mpost						
	AMS	8.5 lb/100 gal	mpost						
5	Liberty	22 oz/a	epost		98 a	99 a	99 a	99 a	99 a
	Lumax	2 qt/a	epost						
	AMS	8.5 lb/100 gal	epost						
6	Liberty	22 oz/a	epost		96 a	99 a	98 a	98 a	98 ab
	Laudis	2 oz/a	epost						
	Define	6 oz/a	epost						
	Aatrex	0.5 lb ai/a	epost						
	AMS	8.5 lb/100 gal	epost						
7	Check				0 b	0 b	0 c	0 b	0 c
LSD (P=.05)					7.3	0.0	1.6	2.0	4.3
Standard Deviation					4.1	0.0	0.9	1.1	2.4
CV					5.15	0.0	1.04	1.33	2.95
Grand Mean					79.48	84.86	84.1	84.48	81.9
Bartlett's X2					3.303	0.0	0.0	0.0	1.435
P(Bartlett's X2)					0.508	.	.	1.00	0.231
Replicate F					1.830	0.000	1.000	2.400	0.620
Replicate Prob(F)					0.2024	1.0000	0.3966	0.1328	0.5545
Treatment F					222.385	0.000	5423.063	3279.138	672.698
Treatment Prob(F)					0.0001	1.0000	0.0001	0.0001	0.0001

Means followed by same letter do not significantly differ (P=.05, Student-Newman-Keuls)

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.