

North Carolina State University

COVERCROP EFFECTS ON BROADLEAF WEED GERMINATION AND GROWTH

Trial ID: 02-GH6 Study Dir.: L.S. WARREN
 Location: NCSU GREENHOUSE Investigator: Crop Science Department

GENERAL TRIAL INFORMATION

Study Director: L.S. WARREN **Title:** RESEARCH ASSOCIATE
Affiliation: NORTH CAROLINA STATE UNIVERSITY
Postal Code: 27695
Investigator: Crop Science Department

TRIAL LOCATION

City: RALEIGH **Trial Status:** COMPLETED
State/Prov.: NC
Postal Code: 27607 **Initiation Date:** 02-18-02
Country: USA **Angle y-axis to North °:** 0.00

COOPERATOR/LANDOWNER

Cooperator: DEREK SMITH AND DON LEE **Country:** USA
Org: NORTH CAROLINA DOT **Phone No:** 919/733-2920
Address 1: P.O. BOX 25201 **Fax No:** 919/733-9810
City: RALEIGH
State/Prov: NC
Postal Code: 27611-5201

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

Objective: TO EVALUATE THE EFFECTS OF COVER CROPS VS. NO COVER CROP ON BROADLEAF WEED SEED GERMINATION AND GROWTH

CROP AND WEED DESCRIPTION

Weed	Code	Common Name	Scientific Name
1.	CHEAL	LAMBSQUARTERS, COMMON	CHENOPODIUM ALBUM L.
2.	TRFRE	CLOVER, WHITE	TRIFOLIUM REPENS L.
3.	VICVI	VETCH, HAIRY	VICIA VILLOSA ROTH SSP.VILLOSA
4.	RUMCR	DOCK, CURLY	RUMEX CRISPUS L.
5.	AMBEL	RAGWEED, COMMON	AMBROSIA ELATIOR L.
6.	SIDSP	SIDA, PRICKLY	SIDA SPINOSA L.
7.	AMARE	PIGWEEED, REDROOT	AMARANTHUS RETROFLEXUS L.
8.	LEPVI	PEPPERWEED, VIRGINIA	LEPIDIUM VIRGINICUM L.
9.	CAPBP	SHEPHERDSPURSE	CAPSELLA BURSA-PASTORIS (L.) MEDIK.
10.	SINAR	MUSTARD, WILD	SINAPIS ARVENSIS L.
11.	SONAR	SOWTHISTLE, PERENNIAL	SONCHUS ARVENSIS L.
12.	GERCA	GERANIUM, CAROLINA	GERANIUM CAROLINIANUM L.

Crop 1: TRZAW WHEAT, WINTER **Variety:** PIONEER 2684
Planting Date: 02-18-02 **Planting Method:** BROADCAST
Rate: 50 FT2 **Depth:** 1 IN
Seed Bed: SMOOTH
Soil Temperature: 75 F **Soil Moisture:** MOIST **Emergence Date:** 02-22-02

Crop 2: AVESA OAT, COMMON **Variety:** NC HULLESS
Planting Date: 02-18-02 **Planting Method:** BROADCAST
Rate: 50 FT2 **Depth:** 1 IN
Seed Bed: SMOOTH
Soil Temperature: 75 F **Soil Moisture:** MOIST **Emergence Date:** 02-22-02

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RYE, CEREAL

Variety: ABRUZZY

Planting Date: 02-18-02

Planting Method: BROADCAST

Rate: 40 FT2

Depth: 1 IN

Seed Bed: SMOOTH

Soil Temperature: 75 F

Soil Moisture: MOIST

Emergence Date: 02-22-02

SITE AND DESIGN

Plot Width, Unit: 1 FT

Plot Length, Unit: 2 FT

Reps: 4

Site Type: GREENHOUSE

Tillage Type: NA

Study Design: RANDOMIZED COMPLETE BLOCK

SOIL DESCRIPTION

Texture: GREENHOUSE MIX (50% SAND / 50% SOIL)

Fert. Level: GOOD

Overall Moisture Conditions: IRRIGATED 2X DAILY AT 3 MIN INTERVALS & HANDWATERED

CROP STAGE AT EACH APPLICATION

	A
Crop 1 Code, Stage:	TRZAW 3-4 LEAF
Stage Scale:	SEEDLING
Height, Unit:	8 IN
Crop 2 Code, Stage:	AVESA 3-4 LEAF
Stage Scale:	SEEDLING
Height, Unit:	8 IN
	3-4 LEAF
Stage Scale:	SEEDLING
Height, Unit:	8 IN

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WEED STAGE AT EACH APPLICATION

	A
Weed 1 Code, Stage:	CHEAL 6+ LEAF
Stage Scale:	1.5-2 IN
Density, Unit:	20+ ROWFT
Weed 2 Code, Stage:	TRFRE 1-2 TRIF
Stage Scale:	0.5 IN
Density, Unit:	10+ ROWFT
Weed 3 Code, Stage:	VICVI VINING
Stage Scale:	8 IN
Density, Unit:	5+ ROWFT
Weed 4 Code, Stage:	RUMCR 2-4 LEAF
Stage Scale:	1.5 IN
Density, Unit:	5+ ROWFT
Weed 5 Code, Stage:	AMBEL COT-2LEAF
Stage Scale:	0.5-1 IN
Density, Unit:	1-2 ROWFT
Weed 6 Code, Stage:	SIDSP 2-3 LEAF
Stage Scale:	1-1.5 IN
Density, Unit:	10+ ROWFT
Weed 7 Code, Stage:	AMARE 4-6 LEAF
Stage Scale:	1-1.25 IN
Density, Unit:	20+ ROWFT
Weed 8 Code, Stage:	LEPVI 2-6 LEAF
Stage Scale:	0.5-1 IN
Density, Unit:	10+ ROWFT
Weed 9 Code, Stage:	CAPBP 2-4 LEAF
Stage Scale:	0.25 IN
Density, Unit:	10+ ROWFT
Weed10 Code, Stage:	SINAR 2-4 LEAF
Stage Scale:	1-3 IN
Density, Unit:	5+ ROWFT
Weed11 Code, Stage:	SONAR 1-2 LEAF
Stage Scale:	0.25 IN
Density, Unit:	5+ ROWFT
Weed12 Code, Stage:	GERCA COT-2LEAF
Stage Scale:	0.5-1 IN
Density, Unit:	1-3 ROWFT

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							CHEAL	TRFRE
							P-HEIGHT	P-HEIGHT
							MM	MM
							03-21-02	03-21-02
							SEEDLING	SEEDLING
							8 INCH	8 INCH
							31 DAP	31 DAP
Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate	Product Unit	Product Rate	Grow Stg	Appl Code
1	PIONEER 2684 WHEAT (A)						29.0 b	18.8 a
2	PIONEER 2684 WHEAT (B)							
3	NC HULLESS OATS (A)						30.5 b	22.0 a
4	NC HULLESS OATS (B)							
5	ABRUZZY RYE (A)						29.3 b	18.3 a
6	ABRUZZY RYE (B)							
7	NO COVER CROP (A)						53.0 a	21.0 a
8	NO COVER CROP (B)							
LSD (P=.05)							19.42	11.75
Standard Deviation							12.14	7.34
CV							34.26	36.72
Bartlett's X2							5.751	9.004
P(Bartlett's X2)							0.124	0.029*
Replicate F							0.953	0.148
Replicate Prob(F)							0.4557	0.9282
Treatment F							3.732	0.238
Treatment Prob(F)							0.0542	0.8678

Means followed by same letter do not significantly differ (P=.05, LSD)

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							VICVI	AMBEL
							P-HEIGHT	P-HEIGHT
							MM	MM
							03-21-02	03-21-02
							SEEDLING	SEEDLING
							8 INCH	8 INCH
							31 DAP	31 DAP
Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate	Product Unit	Product Rate	Grow Stg	Appl Code
1	PIONEER 2684 WHEAT (A)						246.3 a	47.3 a
2	PIONEER 2684 WHEAT (B)							
3	NC HULLESS OATS (A)						216.3 ab	30.0 c
4	NC HULLESS OATS (B)							
5	ABRUZZY RYE (A)						188.8 b	35.8 bc
6	ABRUZZY RYE (B)							
7	NO COVER CROP (A)						227.5 ab	42.0 ab
8	NO COVER CROP (B)							
LSD (P=.05)							54.54	9.11
Standard Deviation							34.10	5.59
CV							15.52	14.41
Bartlett's X2							4.937	1.448
P(Bartlett's X2)							0.176	0.694
Replicate F							1.682	2.606
Replicate Prob(F)							0.2396	0.1240
Treatment F							1.990	7.257
Treatment Prob(F)							0.1860	0.0114

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Weed Code		RUMCR	SIDSP
Rating Data Type		P-HEIGHT	P-HEIGHT
Rating Unit		MM	MM
Rating Date		03-21-02	03-21-02
Crop Stage		SEEDLING	SEEDLING
Crop Stage Scale		8 INCH	8 INCH
Trt-Eval Interval		31 DAP	31 DAP
Trt No.	Treatment Name	Form Conc	Form Type
		Rate	Unit
		Product Rate	Product Unit
		Grow Stg	Appl Code
1	PIONEER 2684 WHEAT (A)	13.3 a	38.5 a
2	PIONEER 2684 WHEAT (B)		
3	NC HULLESS OATS (A)	17.5 a	33.5 a
4	NC HULLESS OATS (B)		
5	ABRUZZY RYE (A)	11.5 a	34.0 a
6	ABRUZZY RYE (B)		
7	NO COVER CROP (A)	22.5 a	38.3 a
8	NO COVER CROP (B)		
LSD (P=.05)		15.87	16.65
Standard Deviation		9.92	10.41
CV		61.3	28.87
Bartlett's X2		3.789	2.576
P(Bartlett's X2)		0.285	0.462
Replicate F		0.392	1.172
Replicate Prob(F)		0.7620	0.3732
Treatment F		0.977	0.265
Treatment Prob(F)		0.4454	0.8490

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Weed Code		AMARE	LEPVI
Rating Data Type		P-HEIGHT	P-HEIGHT
Rating Unit		MM	MM
Rating Date		03-21-02	03-21-02
Crop Stage		SEEDLING	SEEDLING
Crop Stage Scale		8 INCH	8 INCH
Trt-Eval Interval		31 DAP	31 DAP
Trt No.	Treatment Name	Form Conc	Form Type
		Rate	Product
		Unit	Rate
		Stg	Code
1	PIONEER 2684 WHEAT (A)		
2	PIONEER 2684 WHEAT (B)	28.3 b	6.5 b
3	NC HULLESS OATS (A)		
4	NC HULLESS OATS (B)	20.8 b	5.5 b
5	ABRUZZY RYE (A)		
6	ABRUZZY RYE (B)	24.3 b	11.3 b
7	NO COVER CROP (A)		
8	NO COVER CROP (B)	47.5 a	23.3 a
LSD (P=.05)		13.45	10.20
Standard Deviation		8.41	6.38
CV		27.86	54.88
Bartlett's X2		6.831	2.868
P(Bartlett's X2)		0.077	0.412
Replicate F		1.040	0.453
Replicate Prob(F)		0.4206	0.7218
Treatment F		8.065	6.522
Treatment Prob(F)		0.0064	0.0123

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Investigator: Crop Science Department

Weed Code		CAPBP	SINAR
Rating Data Type		P-HEIGHT	P-HEIGHT
Rating Unit		MM	MM
Rating Date		03-21-02	03-21-02
Crop Stage		SEEDLING	SEEDLING
Crop Stage Scale		8 INCH	8 INCH
Trt-Eval Interval		31 DAP	31 DAP
Trt No.	Treatment Name	Form Conc	Form Type
		Rate	Product
		Unit	Rate
		Stg	Unit
		Code	Stg
1	PIONEER 2684 WHEAT (A)		
2	PIONEER 2684 WHEAT (B)	6.0 b	28.8 a
3	NC HULLESS OATS (A)		
4	NC HULLESS OATS (B)	10.8 ab	37.0 a
5	ABRUZZY RYE (A)		
6	ABRUZZY RYE (B)	11.5 ab	35.8 a
7	NO COVER CROP (A)		
8	NO COVER CROP (B)	26.5 a	49.3 a
LSD (P=.05)		18.63	23.40
Standard Deviation		11.65	14.63
CV		85.08	38.81
Bartlett's X2		6.489	1.216
P(Bartlett's X2)		0.09	0.749
Replicate F		0.241	0.702
Replicate Prob(F)		0.8654	0.5742
Treatment F		2.327	1.357
Treatment Prob(F)		0.1430	0.3167

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Investigator: Crop Science Department

Weed Code		SONAR	GERCA
Rating Data Type		P-HEIGHT	P-HEIGHT
Rating Unit		MM	MM
Rating Date		03-21-02	03-21-02
Crop Stage		SEEDLING	SEEDLING
Crop Stage Scale		8 INCH	8 INCH
Trt-Eval Interval		31 DAP	31 DAP
Trt No.	Treatment Name	Form Conc	Form Type
		Rate	Product
		Unit	Rate
		Stg	Unit
		Code	Stg
1	PIONEER 2684 WHEAT (A)		
2	PIONEER 2684 WHEAT (B)	3.3 b	7.3 a
3	NC HULLESS OATS (A)		
4	NC HULLESS OATS (B)	5.3 ab	6.5 a
5	ABRUZZY RYE (A)		
6	ABRUZZY RYE (B)	5.0 ab	5.5 a
7	NO COVER CROP (A)		
8	NO COVER CROP (B)	5.5 a	17.5 a
LSD (P=.05)		2.20	14.83
Standard Deviation		1.37	9.27
CV		28.93	100.91
Bartlett's X2		2.0	7.408
P(Bartlett's X2)		0.572	0.06
Replicate F		0.265	0.707
Replicate Prob(F)		0.8492	0.5719
Treatment F		2.206	1.453
Treatment Prob(F)		0.1569	0.2913

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							CHEAL	TRFRE
							P-CONTROL	P-CONTROL
							PERCENT	PERCENT
							03-21-02	03-21-02
							SEEDLING	SEEDLING
							8 INCH	8 INCH
							31 DAP	31 DAP
Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate	Product Unit	Product Rate	Grow Stg	Appl Code
1	PIONEER 2684 WHEAT (A)						20.0 a	5.0 ab
2	PIONEER 2684 WHEAT (B)							
3	NC HULLESS OATS (A)						6.3 ab	0.0 b
4	NC HULLESS OATS (B)							
5	ABRUZZY RYE (A)						13.8 ab	7.5 a
6	ABRUZZY RYE (B)							
7	NO COVER CROP (A)						0.0 b	0.0 b
8	NO COVER CROP (B)							
LSD (P=.05)							14.96	7.42
Standard Deviation							9.35	4.64
CV							93.54	148.47
Bartlett's X2							3.17	0.47
P(Bartlett's X2)							0.205	0.493
Replicate F							1.714	2.032
Replicate Prob(F)							0.2332	0.1799
Treatment F							3.476	2.613
Treatment Prob(F)							0.0638	0.1155

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								VICVI	AMBEL	
								P-CONTROL	P-CONTROL	
								PERCENT	PERCENT	
								03-21-02	03-21-02	
								SEEDLING	SEEDLING	
								8 INCH	8 INCH	
								31 DAP	31 DAP	
Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate	Product Unit	Product Rate	Grow Stg	Appl Code		
1	PIONEER 2684 WHEAT (A)								7.5 a	0.0 a
2	PIONEER 2684 WHEAT (B)									
3	NC HULLESS OATS (A)								2.5 a	6.3 a
4	NC HULLESS OATS (B)									
5	ABRUZZY RYE (A)								8.8 a	0.0 a
6	ABRUZZY RYE (B)									
7	NO COVER CROP (A)								0.0 a	0.0 a
8	NO COVER CROP (B)									
LSD (P=.05)								10.85	10.00	
Standard Deviation								6.78	6.25	
CV								144.7	400.0	
Bartlett's X2								1.193	0.0	
P(Bartlett's X2)								0.551	0.00*	
Replicate F								1.121	1.000	
Replicate Prob(F)								0.3909	0.4363	
Treatment F								1.483	1.000	
Treatment Prob(F)								0.2838	0.4363	

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								RUMCR	SIDSP	
								P-CONTROL	P-CONTROL	
								PERCENT	PERCENT	
								03-21-02	03-21-02	
								SEEDLING	SEEDLING	
								8 INCH	8 INCH	
								31 DAP	31 DAP	
Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate	Product Unit	Product Rate	Grow Stg	Appl Code		
1	PIONEER 2684 WHEAT (A)								17.5 ab	8.8 a
2	PIONEER 2684 WHEAT (B)									
3	NC HULLESS OATS (A)								11.3 ab	1.3 ab
4	NC HULLESS OATS (B)									
5	ABRUZZY RYE (A)								27.5 a	5.0 ab
6	ABRUZZY RYE (B)									
7	NO COVER CROP (A)								0.0 b	0.0 b
8	NO COVER CROP (B)									
LSD (P=.05)								26.40	7.54	
Standard Deviation								16.50	4.71	
CV								117.36	125.71	
Bartlett's X2								2.312	5.715	
P(Bartlett's X2)								0.315	0.057	
Replicate F								0.143	2.813	
Replicate Prob(F)								0.9313	0.1000	
Treatment F								1.948	2.813	
Treatment Prob(F)								0.1924	0.1000	

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Weed Code		AMARE	LEPVI
Rating Data Type		P-CONTROL	P-CONTROL
Rating Unit		PERCENT	PERCENT
Rating Date		03-21-02	03-21-02
Crop Stage		SEEDLING	SEEDLING
Crop Stage Scale		8 INCH	8 INCH
Trt-Eval Interval		31 DAP	31 DAP
Trt No.	Treatment Name	Form Conc	Form Type
		Rate	Unit
Product Rate	Product Rate	Unit	Stg
Grow Stg	Appl Code		
1	PIONEER 2684 WHEAT (A)		
2	PIONEER 2684 WHEAT (B)	20.0	ab
3	NC HULLESS OATS (A)		
4	NC HULLESS OATS (B)	22.5	ab
5	ABRUZZY RYE (A)		
6	ABRUZZY RYE (B)	27.5	a
7	NO COVER CROP (A)		
8	NO COVER CROP (B)	0.0	b
LSD (P=.05)		26.66	49.15
Standard Deviation		16.67	30.73
CV		95.24	81.95
Bartlett's X2		2.34	0.638
P(Bartlett's X2)		0.31	0.727
Replicate F		0.780	1.231
Replicate Prob(F)		0.5343	0.3541
Treatment F		2.100	2.916
Treatment Prob(F)		0.1705	0.0930

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Weed Code		CAPBP	SINAR
Rating Data Type		P-CONTROL	P-CONTROL
Rating Unit		PERCENT	PERCENT
Rating Date		03-21-02	03-21-02
Crop Stage		SEEDLING	SEEDLING
Crop Stage Scale		8 INCH	8 INCH
Trt-Eval Interval		31 DAP	31 DAP
Trt No.	Treatment Name	Form Conc	Form Type
		Rate	Unit
Product Rate	Product Rate	Unit	Stg
Grow Stg	Appl Code		
1	PIONEER 2684 WHEAT (A)		
2	PIONEER 2684 WHEAT (B)	62.5 a	27.5 a
3	NC HULLESS OATS (A)		
4	NC HULLESS OATS (B)	51.3 a	7.5 ab
5	ABRUZZY RYE (A)		
6	ABRUZZY RYE (B)	51.3 a	25.0 ab
7	NO COVER CROP (A)		
8	NO COVER CROP (B)	0.0 b	0.0 b
LSD (P=.05)		48.86	26.86
Standard Deviation		30.55	16.79
CV		74.06	111.94
Bartlett's X2		0.323	2.213
P(Bartlett's X2)		0.851	0.331
Replicate F		0.951	0.901
Replicate Prob(F)		0.4564	0.4776
Treatment F		3.362	2.542
Treatment Prob(F)		0.0687	0.1217

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								SONAR	GERCA
								P-CONTROL	P-CONTROL
								PERCENT	PERCENT
								03-21-02	03-21-02
								SEEDLING	SEEDLING
								8 INCH	8 INCH
								31 DAP	31 DAP
Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate	Product Unit	Product Rate	Grow Stg	Appl Code	
1	PIONEER 2684 WHEAT (A)								
2	PIONEER 2684 WHEAT (B)							50.0 a	75.0 a
3	NC HULLESS OATS (A)								
4	NC HULLESS OATS (B)							10.0 b	52.5 a
5	ABRUZZY RYE (A)								
6	ABRUZZY RYE (B)							15.0 b	52.5 a
7	NO COVER CROP (A)								
8	NO COVER CROP (B)							0.0 b	0.0 a
LSD (P=.05)								26.52	81.73
Standard Deviation								16.58	51.10
CV								88.44	113.55
Bartlett's X2								1.488	0.034
P(Bartlett's X2)								0.475	0.983
Replicate F								0.515	0.274
Replicate Prob(F)								0.6820	0.8424
Treatment F								6.879	1.551
Treatment Prob(F)								0.0105	0.2677

Means followed by same letter do not significantly differ (P=.05, LSD)

North Carolina State University

COVERCROP EFFECTS ON BROADLEAF WEED GERMINATION AND GROWTH

Trial ID: 02-GH6

Study Dir.: L.S. WARREN

Location: NCSU GREENHOUSE

Investigator: Crop Science Department

							CHEAL	TRFRE
							P-GREEN WT	P-GREEN WT
							GRAMS/PT	GRAMS/PT
							03-21-02	03-21-02
							SEEDLING	SEEDLING
							8 INCH	8 INCH
							31 DAP	31 DAP
Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate	Product Unit	Product Rate	Grow Stg	Appl Code
1	PIONEER 2684 WHEAT (A)						0.0252 b	0.0150 b
2	PIONEER 2684 WHEAT (B)							
3	NC HULLESS OATS (A)						0.0318 b	0.0215 ab
4	NC HULLESS OATS (B)							
5	ABRUZZY RYE (A)						0.0328 b	0.0268 ab
6	ABRUZZY RYE (B)							
7	NO COVER CROP (A)						0.1010 a	0.0313 a
8	NO COVER CROP (B)							
LSD (P=.05)							0.06236	0.01449
Standard Deviation							0.03899	0.00906
CV							81.75	38.34
Bartlett's X2							18.413	2.164
P(Bartlett's X2)							0.001*	0.539
Replicate F							0.738	0.269
Replicate Prob(F)							0.5556	0.8461
Treatment F							3.354	2.386
Treatment Prob(F)							0.0691	0.1367

Means followed by same letter do not significantly differ (P=.05, LSD)

North Carolina State University

COVERCROP EFFECTS ON BROADLEAF WEED GERMINATION AND GROWTH

Trial ID: 02-GH6

Study Dir.: L.S. WARREN

Location: NCSU GREENHOUSE

Investigator: Crop Science Department

							VICVI	AMBEL
							P-GREEN WT	P-GREEN WT
							GRAMS/PT	GRAMS/PT
							03-21-02	03-21-02
							SEEDLING	SEEDLING
							8 INCH	8 INCH
							31 DAP	31 DAP
Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate	Product Unit	Product Rate	Grow Stg	Appl Code
1	PIONEER 2684 WHEAT (A)						0.1590 b	0.0893 a
2	PIONEER 2684 WHEAT (B)							
3	NC HULLESS OATS (A)						0.1640 b	0.0525 b
4	NC HULLESS OATS (B)							
5	ABRUZZY RYE (A)						0.1025 b	0.0690 ab
6	ABRUZZY RYE (B)							
7	NO COVER CROP (A)						0.2560 a	0.0508 b
8	NO COVER CROP (B)							
LSD (P=.05)							0.06982	0.03299
Standard Deviation							0.04365	0.02023
CV							25.62	30.94
Bartlett's X2							3.445	2.33
P(Bartlett's X2)							0.328	0.507
Replicate F							1.793	0.177
Replicate Prob(F)							0.2184	0.9091
Treatment F							8.473	3.149
Treatment Prob(F)							0.0055	0.0864

Means followed by same letter do not significantly differ (P=.05, LSD)

North Carolina State University

COVERCROP EFFECTS ON BROADLEAF WEED GERMINATION AND GROWTH

Trial ID: 02-GH6

Study Dir.: L.S. WARREN

Location: NCSU GREENHOUSE

Investigator: Crop Science Department

								RUMCR	SIDSP	
								P-GREEN WT	P-GREEN WT	
								GRAMS/PT	GRAMS/PT	
								03-21-02	03-21-02	
								SEEDLING	SEEDLING	
								8 INCH	8 INCH	
								31 DAP	31 DAP	
Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate	Product Unit	Product Rate	Grow Stg	Appl Code		
1	PIONEER 2684 WHEAT (A)								0.0402 a	0.0340 a
2	PIONEER 2684 WHEAT (B)									
3	NC HULLESS OATS (A)								0.0550 a	0.0495 a
4	NC HULLESS OATS (B)									
5	ABRUZZY RYE (A)								0.0575 a	0.0323 a
6	ABRUZZY RYE (B)									
7	NO COVER CROP (A)								0.0962 a	0.0470 a
8	NO COVER CROP (B)									
LSD (P=.05)								0.06058	0.02055	
Standard Deviation								0.03788	0.01285	
CV								60.85	31.57	
Bartlett's X2								4.118	7.924	
P(Bartlett's X2)								0.249	0.048*	
Replicate F								1.072	1.662	
Replicate Prob(F)								0.4088	0.2437	
Treatment F								1.594	1.886	
Treatment Prob(F)								0.2581	0.2024	

Means followed by same letter do not significantly differ (P=.05, LSD)

North Carolina State University

COVERCROP EFFECTS ON BROADLEAF WEED GERMINATION AND GROWTH

Trial ID: 02-GH6

Study Dir.: L.S. WARREN

Location: NCSU GREENHOUSE

Investigator: Crop Science Department

Weed Code		AMARE	LEPVI								
Rating Data Type		P-GREEN WT	P-GREEN WT								
Rating Unit		GRAMS/PT	GRAMS/PT								
Rating Date		03-21-02	03-21-02								
Crop Stage		SEEDLING	SEEDLING								
Crop Stage Scale		8 INCH	8 INCH								
Trt-Eval Interval		31 DAP	31 DAP								
Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate	Product Unit	Product Rate	Grow Stg	Appl Code			
1	PIONEER 2684 WHEAT (A)										
2	PIONEER 2684 WHEAT (B)			0.0235	ab					0.0228	b
3	NC HULLESS OATS (A)										
4	NC HULLESS OATS (B)			0.0157	b					0.0172	b
5	ABRUZZY RYE (A)										
6	ABRUZZY RYE (B)			0.0177	b					0.0445	ab
7	NO COVER CROP (A)										
8	NO COVER CROP (B)			0.0410	a					0.0630	a
LSD (P=.05)				0.02204						0.02736	
Standard Deviation				0.01378						0.01711	
CV				56.24						46.39	
Bartlett's X2				1.287						2.542	
P(Bartlett's X2)				0.732						0.468	
Replicate F				1.524						0.295	
Replicate Prob(F)				0.2740						0.8284	
Treatment F				2.777						6.038	
Treatment Prob(F)				0.1026						0.0154	

Means followed by same letter do not significantly differ (P=.05, LSD)

North Carolina State University

COVERCROP EFFECTS ON BROADLEAF WEED GERMINATION AND GROWTH

Trial ID: 02-GH6

Study Dir.: L.S. WARREN

Location: NCSU GREENHOUSE

Investigator: Crop Science Department

Weed Code		CAPBP		SINAR					
Rating Data Type		P-GREEN WT		P-GREEN WT					
Rating Unit		GRAMS/PT		GRAMS/PT					
Rating Date		03-21-02		03-21-02					
Crop Stage		SEEDLING		SEEDLING					
Crop Stage Scale		8 INCH		8 INCH					
Trt-Eval Interval		31 DAP		31 DAP					
Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate	Product Unit	Product Rate	Grow Stg	Appl Code	
1	PIONEER 2684 WHEAT (A)								
2	PIONEER 2684 WHEAT (B)			0.0195	b	0.0707	b		
3	NC HULLESS OATS (A)								
4	NC HULLESS OATS (B)			0.0197	b	0.1603	ab		
5	ABRUZZY RYE (A)								
6	ABRUZZY RYE (B)			0.0400	ab	0.1083	b		
7	NO COVER CROP (A)								
8	NO COVER CROP (B)			0.0902	a	0.2100	a		
LSD (P=.05)				0.06660		0.09438			
Standard Deviation				0.04164		0.05901			
CV				98.26		42.97			
Bartlett's X2				9.591		2.75			
P(Bartlett's X2)				0.022*		0.432			
Replicate F				0.633		1.445			
Replicate Prob(F)				0.6118		0.2933			
Treatment F				2.563		4.245			
Treatment Prob(F)				0.1198		0.0398			

Means followed by same letter do not significantly differ (P=.05, LSD)

North Carolina State University

COVERCROP EFFECTS ON BROADLEAF WEED GERMINATION AND GROWTH

Trial ID: 02-GH6

Study Dir.: L.S. WARREN

Location: NCSU GREENHOUSE

Investigator: Crop Science Department

Weed Code		SONAR	GERCA
Rating Data Type		P-GREEN WT	P-GREEN WT
Rating Unit		GRAMS/PT	GRAMS/PT
Rating Date		03-21-02	03-21-02
Crop Stage		SEEDLING	SEEDLING
Crop Stage Scale		8 INCH	8 INCH
Trt-Eval Interval		31 DAP	31 DAP
Trt No.	Treatment Name	Form Conc	Form Type
		Rate	Product
		Unit	Rate
		Stg	Code
1	PIONEER 2684 WHEAT (A)		
2	PIONEER 2684 WHEAT (B)	0.0145 b	0.0225 b
3	NC HULLESS OATS (A)		
4	NC HULLESS OATS (B)	0.0150 b	0.0200 b
5	ABRUZZY RYE (A)		
6	ABRUZZY RYE (B)	0.0155 b	0.0200 b
7	NO COVER CROP (A)		
8	NO COVER CROP (B)	0.0303 a	0.0795 a
LSD (P=.05)		0.01377	0.05597
Standard Deviation		0.00861	0.03499
CV		45.75	98.56
Bartlett's X2		9.414	2.409
P(Bartlett's X2)		0.024*	0.492
Replicate F		1.675	0.084
Replicate Prob(F)		0.2410	0.9669
Treatment F		3.149	2.816
Treatment Prob(F)		0.0792	0.0998

Means followed by same letter do not significantly differ (P=.05, LSD)

North Carolina State University

COVERCROP EFFECTS ON BROADLEAF WEED GERMINATION AND GROWTH

Trial ID: 02-GH6

Study Dir.: L.S. WARREN

Location: NCSU GREENHOUSE

Investigator: Crop Science Department

							CHEAL	TRFRE
							P-DRY WT	P-DRY WT
							GRAMS/PT	GRAMS/PT
							04-16-02	04-16-02
							57 DAP	57 DAP
Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate	Product Unit	Product Rate	Grow Stg	Appl Code
1	PIONEER 2684 WHEAT (A)						0.0037 b	0.0057 a
2	PIONEER 2684 WHEAT (B)							
3	NC HULLESS OATS (A)						0.0035 b	0.0053 a
4	NC HULLESS OATS (B)							
5	ABRUZZY RYE (A)						0.0055 ab	0.0077 a
6	ABRUZZY RYE (B)							
7	NO COVER CROP (A)						0.0107 a	0.0073 a
8	NO COVER CROP (B)							
LSD (P=.05)							0.00580	0.00339
Standard Deviation							0.00362	0.00212
CV							61.7	32.64
Bartlett's X2							12.92	0.862
P(Bartlett's X2)							0.005*	0.834
Replicate F							1.808	1.222
Replicate Prob(F)							0.2158	0.3569
Treatment F							3.457	1.259
Treatment Prob(F)							0.0646	0.3453

Means followed by same letter do not significantly differ (P=.05, LSD)

North Carolina State University

COVERCROP EFFECTS ON BROADLEAF WEED GERMINATION AND GROWTH

Trial ID: 02-GH6

Study Dir.: L.S. WARREN

Location: NCSU GREENHOUSE

Investigator: Crop Science Department

							VICVI	AMBEL
							P-DRY WT	P-DRY WT
							GRAMS/PT	GRAMS/PT
							04-16-02	04-16-02
							57 DAP	57 DAP
Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate	Product Unit	Product Rate	Grow Stg	Appl Code
1	PIONEER 2684 WHEAT (A)						0.0293 b	0.0090 a
2	PIONEER 2684 WHEAT (B)							
3	NC HULLESS OATS (A)						0.0240 b	0.0027 a
4	NC HULLESS OATS (B)							
5	ABRUZZY RYE (A)						0.0168 b	0.0047 a
6	ABRUZZY RYE (B)							
7	NO COVER CROP (A)						0.0548 a	0.0090 a
8	NO COVER CROP (B)							
LSD (P=.05)							0.01683	0.00630
Standard Deviation							0.01052	0.00386
CV							33.74	60.56
Bartlett's X2							2.317	8.509
P(Bartlett's X2)							0.509	0.037*
Replicate F							1.077	1.437
Replicate Prob(F)							0.4068	0.3024
Treatment F							9.862	2.644
Treatment Prob(F)							0.0033	0.1207

Means followed by same letter do not significantly differ (P=.05, LSD)

North Carolina State University

COVERCROP EFFECTS ON BROADLEAF WEED GERMINATION AND GROWTH

Trial ID: 02-GH6

Study Dir.: L.S. WARREN

Location: NCSU GREENHOUSE

Investigator: Crop Science Department

Weed Code		RUMCR	SIDSP
Rating Data Type		P-DRY WT	P-DRY WT
Rating Unit		GRAMS/PT	GRAMS/PT
Rating Date		04-16-02	04-16-02
Crop Stage			
Crop Stage Scale			
Trt-Eval Interval		57 DAP	57 DAP
Trt No.	Treatment Name	Form Conc	Form Type
		Rate	Product Unit
		Rate	Product Unit
		Stg	Appl Code
1	PIONEER 2684 WHEAT (A)	0.0085 a	0.0075 a
2	PIONEER 2684 WHEAT (B)		
3	NC HULLESS OATS (A)	0.0050 a	0.0078 a
4	NC HULLESS OATS (B)		
5	ABRUZZY RYE (A)	0.0060 a	0.0067 a
6	ABRUZZY RYE (B)		
7	NO COVER CROP (A)	0.0127 a	0.0105 a
8	NO COVER CROP (B)		
LSD (P=.05)		0.00937	0.00450
Standard Deviation		0.00586	0.00281
CV		72.68	34.63
Bartlett's X2		0.103	1.572
P(Bartlett's X2)		0.991	0.666
Replicate F		1.851	0.768
Replicate Prob(F)		0.2083	0.5400
Treatment F		1.390	1.358
Treatment Prob(F)		0.3077	0.3165

Means followed by same letter do not significantly differ (P=.05, LSD)

North Carolina State University

COVERCROP EFFECTS ON BROADLEAF WEED GERMINATION AND GROWTH

Trial ID: 02-GH6

Study Dir.: L.S. WARREN

Location: NCSU GREENHOUSE

Investigator: Crop Science Department

Weed Code		AMARE	LEPVI
Rating Data Type		P-DRY WT	P-DRY WT
Rating Unit		GRAMS/PT	GRAMS/PT
Rating Date		04-16-02	04-16-02
Crop Stage			
Crop Stage Scale			
Trt-Eval Interval		57 DAP	57 DAP
Trt No.	Treatment Name	Form Conc	Form Type
		Rate	Product Unit
		Rate	Product Unit
		Stg	Appl Code
1	PIONEER 2684 WHEAT (A)		
2	PIONEER 2684 WHEAT (B)	0.00275 a	0.01895 a
3	NC HULLESS OATS (A)		
4	NC HULLESS OATS (B)	0.00750 a	0.00375 a
5	ABRUZZY RYE (A)		
6	ABRUZZY RYE (B)	0.00358 a	0.00675 a
7	NO COVER CROP (A)		
8	NO COVER CROP (B)	0.00525 a	0.01075 a
LSD (P=.05)		0.008494	0.022176
Standard Deviation		0.005310	0.013865
CV		111.36	137.96
Bartlett's X2		14.338	17.354
P(Bartlett's X2)		0.002*	0.001*
Replicate F		2.455	1.404
Replicate Prob(F)		0.1298	0.3041
Treatment F		0.624	0.904
Treatment Prob(F)		0.6174	0.4766

Means followed by same letter do not significantly differ (P=.05, LSD)

North Carolina State University

COVERCROP EFFECTS ON BROADLEAF WEED GERMINATION AND GROWTH

Trial ID: 02-GH6

Study Dir.: L.S. WARREN

Location: NCSU GREENHOUSE

Investigator: Crop Science Department

Weed Code							CAPBP	SINAR
Rating Data Type							P-DRY WT	P-DRY WT
Rating Unit							GRAMS/PT	GRAMS/PT
Rating Date							04-16-02	04-16-02
Crop Stage								
Crop Stage Scale								
Trt-Eval Interval								
Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate	Product Unit	Product Rate	Grow Stg	Appl Code
1	PIONEER 2684 WHEAT (A)							
2	PIONEER 2684 WHEAT (B)					0.00412 b	0.0115 b	
3	NC HULLESS OATS (A)							
4	NC HULLESS OATS (B)					0.00225 b	0.0243 ab	
5	ABRUZZY RYE (A)							
6	ABRUZZY RYE (B)					0.00420 b	0.0145 ab	
7	NO COVER CROP (A)							
8	NO COVER CROP (B)					0.01875 a	0.0262 a	
LSD (P=.05)							0.013939	0.01284
Standard Deviation							0.008715	0.00803
CV							118.87	41.98
Bartlett's X2							7.171	5.985
P(Bartlett's X2)							0.067	0.112
Replicate F							0.580	0.575
Replicate Prob(F)							0.6426	0.6456
Treatment F							3.095	3.238
Treatment Prob(F)							0.0822	0.0746

Means followed by same letter do not significantly differ (P=.05, LSD)

North Carolina State University

COVERCROP EFFECTS ON BROADLEAF WEED GERMINATION AND GROWTH

Trial ID: 02-GH6

Study Dir.: L.S. WARREN

Location: NCSU GREENHOUSE

Investigator: Crop Science Department

Weed Code		SONAR	GERCA
Rating Data Type		P-DRY WT	P-DRY WT
Rating Unit		GRAMS/PT	GRAMS/PT
Rating Date		04-16-02	04-16-02
Crop Stage			
Crop Stage Scale			
Trt-Eval Interval			
Trt No.	Treatment Name	Form Conc	Form Type
		Rate	Product
		Unit	Rate
		Stg	Code
1	PIONEER 2684 WHEAT (A)		
2	PIONEER 2684 WHEAT (B)	0.00078 b	0.0012 b
3	NC HULLESS OATS (A)		
4	NC HULLESS OATS (B)	0.00080 b	0.0025 b
5	ABRUZZY RYE (A)		
6	ABRUZZY RYE (B)	0.00077 b	0.0025 b
7	NO COVER CROP (A)		
8	NO COVER CROP (B)	0.00375 a	0.0105 a
LSD (P=.05)		0.001858	0.00620
Standard Deviation		0.001161	0.00387
CV		76.16	92.51
Bartlett's X2		19.4	2.156
P(Bartlett's X2)		0.001*	0.541
Replicate F		0.990	0.371
Replicate Prob(F)		0.4404	0.7762
Treatment F		6.525	4.813
Treatment Prob(F)		0.0123	0.0288

Means followed by same letter do not significantly differ (P=.05, LSD)

North Carolina State University

COVERCROP EFFECTS ON BROADLEAF WEED GERMINATION AND GROWTH

Trial ID: 02-GH6

Study Dir.: L.S. WARREN

Location: NCSU GREENHOUSE

Investigator: Crop Science Department

Trial Comments

02-18-02: BROADCAST PIONEER 2684 WHEAT, NC HULLESS OATS AND ABRUZZY RYE IN 10 X 20 INCH GREENHOUSE TRAYS CONTAINING 50% SAND 50% SOIL MIX AT RATES OF 50 , 50 AND 40 SEEDS/FT², RESPECTIVELY; COVER CROP SEEDS WERE TILLED / MIXED INTO SOIL BY HAND; ONE GROUP OF TRAYS CONSISTED OF SOIL ONLY

- WEED SEEDS SPRINKLED INTO FURROWS THEN LIGHTLY COVERED BY HAND AND HAND WATERED; WEED SEEDS WERE SORTED AS FOLLOWS:

GROUP A INCLUDED COMMON LAMBSQUARTER, WHITE CLOVER, HAIRY VETCH, CURLY DOCK, COMMON RAGWEED AND PRICKLY SIDA

GROUP B INCLUDED REDROOT PIGWEED, VIRGINIA PEPPERWEED, SHEPHERD'S-PURSE, WILD MUSTARD, SPINY SOWTHISTLE AND CAROLINA GERANIUM

- 3.1 GRAMS OF OSMOCOTE 14-14-14 BROADCAST TO ALL TRAYS WHICH WAS EQUIVALENT TO 150 LB/A OR 21 LB/A OF ACTUAL N

03-08-02: 3.1 GRAMS OF OSMOCOTE 14-14-14 BROADCAST TO ALL TRAYS WHICH WAS EQUIVALENT TO 150 LB/A OR 21 LB/A OF ACTUAL N

03-20-02: PHOTOGRAPHED ALL TRAYS

03-21-02: WEEDS IN ALL TRAYS WERE MEASURED FOR HEIGHT (MM) AND RATED VISUALLY FOR CONTROL ON A 0-100 SCALE

- 6 INCH LINEAR SECTION OF EACH TRAY WAS HARVESTED AND WEIGHED FOR EACH WEED SPECIES, THEN DRIED IN OVEN AT 120-130F

04-16-02: WEED SPECIES DRY WEIGHTS WERE RECORDED