

Wild Garlic Control and Winter Wheat Tolerance with Spring Applications
of Powerflex and Competitive Standards.

Trial ID: 11-HRC-H6-Dow Location: Horticulture Res. Ctr.

Investigator: Bryan Young, Professor, Southern Illinois University, bgyoung@siu.edu
 City State Zip Country: Carbondale IL 62901 USA
 Trial Status: FINAL Initiation Date: 10-5-10

Objectives: Evaluate the efficacy of spring applied PowerFlex alone and in a tank-mix with a reduced rate of Harmony Extra SG or Osprey on wild garlic in winter wheat.

Crop 1: TRZAW Winter wheat Variety: FS 637
 Planting Method: SEEDED Planting Date: 10-5-10
 Rate, Unit: 1.45 mil. S/A Depth, Unit: 1.5 IN
 Row Spacing, Unit: 7.5 IN

Pest 1 Type: W Code: ALLVI Allium vineale L. garlic, wild
 Pest 2 Type: W Code: LAMAM Lamium amplexicaule L. henbit

Plot Width, Unit: 15 FT Site Type: FIELD
 Plot Length, Unit: 30 FT Tillage Type: NO-TILL
 Replications: 4 Study Design: Randomized Complete Block

Prior Crops, Year
 1. ZEAMD 2010

Field Prep./Maintenance: Fall: N 27 LB/A, P205 69 LB/A, K20 200 LB/A
 Spring: N 95 LB/A, P205 0 LB/A, K20 0 LB/A as 32% UAN

% OM: 1.5 Texture: SILT LOAM
 pH: 6.5 Soil Name: HOSMER
 CEC: 7.2 Fert. Level: P1: 46 LB/A, K: 153 LB/A

Application Description

A
 Application Date: 3-22-11
 Time of Day: 9:15
 Application Method: Spray
 Application Timing: 2-4"NG
 Application Placement: BROFOL
 Applied By: NRJ
 Air Temperature, Unit: 66 F
 % Relative Humidity: 70
 Wind Velocity, Unit: 4 MPH
 Wind Direction: S
 Dew Presence (Y/N): N
 Soil Temperature, Unit: 54 F
 Soil Moisture: NORMAL
 % Cloud Cover: 70

22-3-11
 Crop stage at application: FK
 Height Min, Max (inch): 3 5

Pest Stage At Each Application

Application Date: 3-22-11
 Weed Code: ALLVI
 Stage Majority (leaves): 2
 Stage Min, Max: 2 3
 Height Majority: 4 IN
 Height Min, Max: 3 6
 Density, Unit: 8 FT2
 Weed Code: LAMAM
 Stage Majority (leaves): 25
 Stage Min, Max: 20 30
 Height Majority: 3 IN
 Height Min, Max: 3 4
 Density, Unit: 7 FT2

Application Equipment

Appl. Equipment: CO2 sprayer
 Operating Pressure: 30 PSI
 Nozzle Type: Flat fan
 Nozzle Size: XR 8002
 Boom Length, Unit: 7.5 FT
 Spray Volume, Unit: 15 GPA

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Pest Code									TRZAW	TRZAW	TRZAW	TRZAW	TRZAW	TRZAW	TRZAW	
Crop Code									3-25-11	3-29-11	4-5-11	4-19-11	5-3-11	6-10-11	6-10-11	
Rating Date									Injury	Injury	Injury	Injury	Injury	Head injury	Greenness	
Rating Data Type									Percent	Percent	Percent	Percent	Percent	Percent	Percent	
Rating Unit																
Rating Timing																
Trt-Eval Interval									3 DA-A	3 DA-A	14 DA-A	28 DA-A	42 DA-A	80 DA-A	80 DA-A	
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Other Rate	Other Rate Unit	Growth Stage	Appl Code							
1	POWERFLEX	7.5	WG	0.0164	lb ai/a	3.5	oz/a	2-4"NG	A	0 a	0 a	0 b	0 a	0 a	0 a	4 b
1	NIS (ACTIVATOR 90)	100	SL	0.5	% v/v	0.5	% v/v	2-4"NG	A							
1	AMS	100	SG	1.52	lb/a	1.52	lb/a	2-4"NG	A							
2	HARMONY EXTRA SG	50	SG	0.0141	lb ai/a	0.45	oz/a	2-4"NG	A	0 a	0 a	0 b	0 a	0 a	0 a	5 ab
2	NIS (ACTIVATOR 90)	100	SL	0.5	% v/v	0.5	% v/v	2-4"NG	A							
2	AMS	100	SG	2	lb/a	2	lb/a	2-4"NG	A							
3	POWERFLEX	7.5	WG	0.0164	lb ai/a	3.5	oz/a	2-4"NG	A	0 a	0 a	0 b	0 a	0 a	0 a	5 a
3	HARMONY EXTRA SG	50	SG	0.0141	lb ai/a	0.45	oz/a	2-4"NG	A							
3	NIS (ACTIVATOR 90)	100	SL	0.5	% v/v	0.5	% v/v	2-4"NG	A							
3	AMS	100	SG	2	lb/a	2	lb/a	2-4"NG	A							
4	HARMONY EXTRA SG	50	SG	0.0234	lb ai/a	0.75	oz/a	2-4"NG	A	0 a	0 a	0 b	0 a	0 a	0 a	5 ab
4	NIS (ACTIVATOR 90)	100	SL	0.5	% v/v	0.5	% v/v	2-4"NG	A							
4	AMS	100	SG	2	lb/a	2	lb/a	2-4"NG	A							
5	POWERFLEX	7.5	WG	0.0164	lb ai/a	3.5	oz/a	2-4"NG	A	0 a	0 a	0 b	0 a	0 a	0 a	5 ab
5	HARMONY EXTRA SG	50	SG	0.0234	lb ai/a	0.75	oz/a	2-4"NG	A							
5	NIS (ACTIVATOR 90)	100	SL	0.5	% v/v	0.5	% v/v	2-4"NG	A							
5	AMS	100	SG	2	lb/a	2	lb/a	2-4"NG	A							
6	OSPREY	4.5	WG	0.0134	lb ai/a	4.76	oz/a	2-4"NG	A	0 a	0 a	0 b	0 a	0 a	0 a	5 ab
6	NIS (ACTIVATOR 90)	100	SL	0.5	% v/v	0.5	% v/v	2-4"NG	A							
6	AMS	100	SG	1.52	lb/a	1.52	lb/a	2-4"NG	A							
7	OSPREY	4.5	WG	0.0134	lb ai/a	4.76	oz/a	2-4"NG	A	0 a	0 a	1 b	0 a	0 a	0 a	5 ab
7	HARMONY EXTRA SG	50	SG	0.0141	lb ai/a	0.45	oz/a	2-4"NG	A							
7	NIS (ACTIVATOR 90)	100	SL	0.5	% v/v	0.5	% v/v	2-4"NG	A							
7	AMS	100	SG	2	lb/a	2	lb/a	2-4"NG	A							
8	OSPREY	4.5	WG	0.0134	lb ai/a	4.76	oz/a	2-4"NG	A	0 a	0 a	5 a	0 a	0 a	0 a	5 a
8	HARMONY EXTRA SG	50	SG	0.0234	lb ai/a	0.75	oz/a	2-4"NG	A							
8	NIS (ACTIVATOR 90)	100	SL	0.5	% v/v	0.5	% v/v	2-4"NG	A							
8	AMS	100	SG	2	lb/a	2	lb/a	2-4"NG	A							
9	HARMONY EXTRA SG	50	SG	0.028	lb ai/a	0.9	oz/a	2-4"NG	A	0 a	0 a	3 a	0 a	0 a	0 a	5 ab
9	NIS (ACTIVATOR 90)	100	SL	0.5	% v/v	0.5	% v/v	2-4"NG	A							
9	AMS	100	SG	2	lb/a	2	lb/a	2-4"NG	A							
10	NONTREATED									0 a	0 a	0 b	0 a	0 a	0 a	5 ab
LSD (P=.05)										0.0	0.0	1.5	0.0	0.0	0.0	0.8
Replicate F										0.000	0.000	1.884	0.000	0.000	0.000	1.556
Replicate Prob(F)										1.0000	1.0000	0.1561	1.0000	1.0000	1.0000	0.2231
Treatment F										0.000	0.000	10.461	0.000	0.000	0.000	1.074
Treatment Prob(F)										1.0000	1.0000	0.0001	1.0000	1.0000	1.0000	0.4123

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

Wild Garlic Control and Winter Wheat Tolerance with Spring Applications of Powerflex and Competitive Standards.

Trial ID: 11-HRC-H6-Dow Location: Horticulture Res. Ctr.

Pest Code					TRZAW	TRZAW	TRZAW	ALLVI	ALLVI	ALLVI	ALLVI	ALLVI					
Crop Code					6-16-11	6-16-11	6-16-11	4-5-11	4-19-11	5-3-11	6-10-11	6-10-11					
Rating Date					Moisture	Test wt.	Yield	Control	Control	Control	Bulb count	Bulb ODW					
Rating Data Type					Percent	lb/bu	bu/A	Percent	Percent	Percent	1.0 m2	gram					
Rating Unit																	
Rating Timing																	
Trt-Eval Interval																	
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Other Rate	Other Rate Unit	Growth Stage	Appl Code	14 DA-A	28 DA-A	42 DA-A	42 DA-A	80 DA-A			
1	POWERFLEX	7.5	WG	0.0164	lb ai/a	3.5	oz/a	2-4"NG	A	15.2 b	52.1 a	37 a	10 a	74 a	71 bc	0.0 b	0.00 b
1	NIS (ACTIVATOR 90)	100	SL	0.5	% v/v	0.5	% v/v	2-4"NG	A								
1	AMS	100	SG	1.52	lb/a	1.52	lb/a	2-4"NG	A								
2	HARMONY EXTRA SG	50	SG	0.0141	lb ai/a	0.45	oz/a	2-4"NG	A	15.3 b	53.2 a	36 a	10 a	68 ab	83 ab	0.0 b	0.00 b
2	NIS (ACTIVATOR 90)	100	SL	0.5	% v/v	0.5	% v/v	2-4"NG	A								
2	AMS	100	SG	2	lb/a	2	lb/a	2-4"NG	A								
3	POWERFLEX	7.5	WG	0.0164	lb ai/a	3.5	oz/a	2-4"NG	A	15.1 b	50.9 a	34 a	10 a	68 ab	84 a	0.0 b	0.00 b
3	HARMONY EXTRA SG	50	SG	0.0141	lb ai/a	0.45	oz/a	2-4"NG	A								
3	NIS (ACTIVATOR 90)	100	SL	0.5	% v/v	0.5	% v/v	2-4"NG	A								
3	AMS	100	SG	2	lb/a	2	lb/a	2-4"NG	A								
4	HARMONY EXTRA SG	50	SG	0.0234	lb ai/a	0.75	oz/a	2-4"NG	A	15.2 b	50.9 a	29 a	10 a	73 a	86 a	0.0 b	0.00 b
4	NIS (ACTIVATOR 90)	100	SL	0.5	% v/v	0.5	% v/v	2-4"NG	A								
4	AMS	100	SG	2	lb/a	2	lb/a	2-4"NG	A								
5	POWERFLEX	7.5	WG	0.0164	lb ai/a	3.5	oz/a	2-4"NG	A	15.0 b	52.7 a	35 a	10 a	78 a	83 ab	0.0 b	0.00 b
5	HARMONY EXTRA SG	50	SG	0.0234	lb ai/a	0.75	oz/a	2-4"NG	A								
5	NIS (ACTIVATOR 90)	100	SL	0.5	% v/v	0.5	% v/v	2-4"NG	A								
5	AMS	100	SG	2	lb/a	2	lb/a	2-4"NG	A								
6	OSPREY	4.5	WG	0.0134	lb ai/a	4.76	oz/a	2-4"NG	A	15.6 b	51.9 a	34 a	10 a	60 b	69 c	2.3 b	0.45 b
6	NIS (ACTIVATOR 90)	100	SL	0.5	% v/v	0.5	% v/v	2-4"NG	A								
6	AMS	100	SG	1.52	lb/a	1.52	lb/a	2-4"NG	A								
7	OSPREY	4.5	WG	0.0134	lb ai/a	4.76	oz/a	2-4"NG	A	15.6 b	52.7 a	33 a	10 a	75 a	81 ab	0.0 b	0.00 b
7	HARMONY EXTRA SG	50	SG	0.0141	lb ai/a	0.45	oz/a	2-4"NG	A								
7	NIS (ACTIVATOR 90)	100	SL	0.5	% v/v	0.5	% v/v	2-4"NG	A								
7	AMS	100	SG	2	lb/a	2	lb/a	2-4"NG	A								
8	OSPREY	4.5	WG	0.0134	lb ai/a	4.76	oz/a	2-4"NG	A	15.6 b	51.7 a	31 a	10 a	71 a	89 a	0.0 b	0.00 b
8	HARMONY EXTRA SG	50	SG	0.0234	lb ai/a	0.75	oz/a	2-4"NG	A								
8	NIS (ACTIVATOR 90)	100	SL	0.5	% v/v	0.5	% v/v	2-4"NG	A								
8	AMS	100	SG	2	lb/a	2	lb/a	2-4"NG	A								
9	HARMONY EXTRA SG	50	SG	0.028	lb ai/a	0.9	oz/a	2-4"NG	A	15.3 b	53.7 a	36 a	10 a	76 a	79 abc	0.0 b	0.00 b
9	NIS (ACTIVATOR 90)	100	SL	0.5	% v/v	0.5	% v/v	2-4"NG	A								
9	AMS	100	SG	2	lb/a	2	lb/a	2-4"NG	A								
10	NONTREATED									18.4 a	51.4 a	31 a	0 b	0 c	0 d	11.5 a	4.68 a
LSD (P=.05)										2.25	4.09	13.1	0.0	10.7	11.6	4.37	2.253
Replicate F										0.658	0.438	0.653	0.000	1.110	2.941	1.519	1.021
Replicate Prob(F)										0.5850	0.7276	0.5883	1.0000	0.3622	0.0510	0.2320	0.3987
Treatment F										1.687	0.455	0.314	0.000	39.145	43.041	5.812	3.594
Treatment Prob(F)										0.1411	0.8919	0.9635	1.0000	0.0001	0.0001	0.0002	0.0047

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

Wild Garlic Control and Winter Wheat Tolerance with Spring Applications of Powerflex and Competitive Standards.

Trial ID: 11-HRC-H6-Dow Location: Horticulture Res. Ctr.

Pest Code	LAMAM	LAMAM	LAMAM
Crop Code			
Rating Date	4-5-11	4-19-11	5-3-11
Rating Data Type	Control	Control	Control
Rating Unit	Percent	Percent	Percent
Rating Timing			
Trt-Eval Interval	14 DA-A	28 DA-A	42 DA-A

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Other Rate	Other Rate Unit	Growth Stage	Appl Code						
1	POWERFLEX	7.5	WG	0.0164	lb ai/a	3.5	oz/a	2-4"NG	A	29	ab	95	ab	99	a
1	NIS (ACTIVATOR 90)	100	SL	0.5	% v/v	0.5	% v/v	2-4"NG	A						
1	AMS	100	SG	1.52	lb/a	1.52	lb/a	2-4"NG	A						
2	HARMONY EXTRA SG	50	SG	0.0141	lb ai/a	0.45	oz/a	2-4"NG	A	29	ab	90	c	99	a
2	NIS (ACTIVATOR 90)	100	SL	0.5	% v/v	0.5	% v/v	2-4"NG	A						
2	AMS	100	SG	2	lb/a	2	lb/a	2-4"NG	A						
3	POWERFLEX	7.5	WG	0.0164	lb ai/a	3.5	oz/a	2-4"NG	A	29	ab	96	ab	99	a
3	HARMONY EXTRA SG	50	SG	0.0141	lb ai/a	0.45	oz/a	2-4"NG	A						
3	NIS (ACTIVATOR 90)	100	SL	0.5	% v/v	0.5	% v/v	2-4"NG	A						
3	AMS	100	SG	2	lb/a	2	lb/a	2-4"NG	A						
4	HARMONY EXTRA SG	50	SG	0.0234	lb ai/a	0.75	oz/a	2-4"NG	A	25	b	94	b	99	a
4	NIS (ACTIVATOR 90)	100	SL	0.5	% v/v	0.5	% v/v	2-4"NG	A						
4	AMS	100	SG	2	lb/a	2	lb/a	2-4"NG	A						
5	POWERFLEX	7.5	WG	0.0164	lb ai/a	3.5	oz/a	2-4"NG	A	30	ab	97	ab	99	a
5	HARMONY EXTRA SG	50	SG	0.0234	lb ai/a	0.75	oz/a	2-4"NG	A						
5	NIS (ACTIVATOR 90)	100	SL	0.5	% v/v	0.5	% v/v	2-4"NG	A						
5	AMS	100	SG	2	lb/a	2	lb/a	2-4"NG	A						
6	OSPREY	4.5	WG	0.0134	lb ai/a	4.76	oz/a	2-4"NG	A	29	ab	90	c	99	a
6	NIS (ACTIVATOR 90)	100	SL	0.5	% v/v	0.5	% v/v	2-4"NG	A						
6	AMS	100	SG	1.52	lb/a	1.52	lb/a	2-4"NG	A						
7	OSPREY	4.5	WG	0.0134	lb ai/a	4.76	oz/a	2-4"NG	A	29	ab	96	ab	99	a
7	HARMONY EXTRA SG	50	SG	0.0141	lb ai/a	0.45	oz/a	2-4"NG	A						
7	NIS (ACTIVATOR 90)	100	SL	0.5	% v/v	0.5	% v/v	2-4"NG	A						
7	AMS	100	SG	2	lb/a	2	lb/a	2-4"NG	A						
8	OSPREY	4.5	WG	0.0134	lb ai/a	4.76	oz/a	2-4"NG	A	30	ab	98	a	99	a
8	HARMONY EXTRA SG	50	SG	0.0234	lb ai/a	0.75	oz/a	2-4"NG	A						
8	NIS (ACTIVATOR 90)	100	SL	0.5	% v/v	0.5	% v/v	2-4"NG	A						
8	AMS	100	SG	2	lb/a	2	lb/a	2-4"NG	A						
9	HARMONY EXTRA SG	50	SG	0.028	lb ai/a	0.9	oz/a	2-4"NG	A	33	a	96	ab	99	a
9	NIS (ACTIVATOR 90)	100	SL	0.5	% v/v	0.5	% v/v	2-4"NG	A						
9	AMS	100	SG	2	lb/a	2	lb/a	2-4"NG	A						
10	NONTREATED									0	c	0	d	0	b
LSD (P=.05)										5.7		3.2		0.0	
Replicate F										1.000		2.045		0.000	
Replicate Prob(F)										0.4079		0.1312		1.0000	
Treatment F										22.440		747.054		0.000	
Treatment Prob(F)										0.0001		0.0001		1.0000	

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

Trial Comments

- Protocol: Dow (NA11C2B008).
- Ratings: CI 3, 7, 14, 28 + 42-56 DAT.
Specify type of injury (growth reduction, chlorosis, malformation) and rate separately if needed.
Evaluate wheat head size and fill and check for delayed maturity.
Wild garlic control at 14, 28 + 42-56 DAT.
Prior to harvest collect and counts aerial bulblets in (2) 0.5 m2 quads per plot and report as per 1.0 m2.
Oven dry weight of collected aerial bulblets reported as per 1.0 m2.
- Yield.
- If Lolium is present, overspray entire area with Axial.
- Application timing: Wild garlic with 2-4 inch of new growth in the spring but less than 12 inch in total height.
Apply to wheat from 3 leaf to jointing stage.

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6. Head injury = reduction in head length and fill.

Greenness = Delayed maturity (more greenness is less mature).

1.0 m² = One square meter. ODW = Oven dry weight per one square meter.

7. Harvested 6-16-11, (8) 7.5 inch rows by 27 ft.