

Greetings and Acknowledgements

Hello and welcome to the 28th Annual Roadside Vegetation Management Conference and Field Day.

We would like to take a moment to thank everyone involved with making this Field Day possible. There are many that deserve a warm round of applause for helping in this effort. We would like to especially thank Joe Demko from PennDOT's central office for his continued contribution and support. Also, Michael Heitzenrater from the PennDOT District 2-0 office deserves special thanks for his assistance with demonstration sites and planning traffic control. We are grateful to Andrew Dulude and Russ Peck (OESCO, Inc.) for traveling from Massachusetts to demonstrate the Fischer Mowing Unit. Special thanks also goes to District 2-0, Centre Co. for providing traffic control, demonstrating the remote control mower, and working with us throughout the year to avoid the numerous research sites found throughout the area. Additionally, Jim Savage and Greg Hoover of Penn State were kind enough to take the time to create and assist with interactive stations during the afternoon of the field day. The Russell E. Larson Agricultural Research Center is the home of the interactive stations and we would like to thank Scott Harkcom (Farm Manager) for providing the space and facilities for this event.

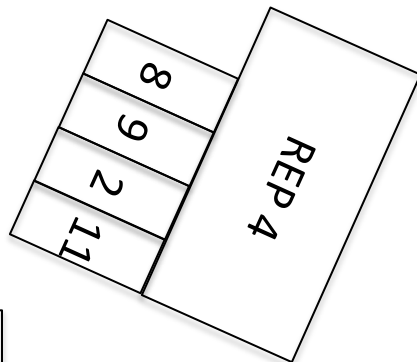
Last, but not least, we would like to thank all of the herbicide industry representatives who provided the research project with technical support and assistance throughout the year. Their continuing commitment allows us to expand our scope of research to the benefit of all.

May everyone have both an educational and enjoyable time during today's tour.

List of site visits in sequence:

- Poison hemlock control
- Cable guiderail mower demonstration (OESCO, Inc.)
- Remote control mower demonstration
- Controlling common teasel
- Warm-season grass seeding
- Bareground herbicide chemistry
- Plant growth regulator demonstration
- LUNCH (provided)
- Demonstration and Interactive Stations (45 minutes/each)
 - (1) *Herbicide symptoms, what to look for (Jon Johnson, Penn State)*
 - (2) *Tree risk assessment and tree valuation (Jim Savage, Penn State)*
 - (3) *Plant identification (Dave Despot, Penn State)*
 - (4) *Insect pests of interest (Greg Hoover, Emeritus Penn State)*
- Tree ID Challenge (throughout field day tour)

Map 1 Poison Hemlock Control SR322/SR26 Interchange



REP 3							
3	6	10	4	7	5	X	X
1							

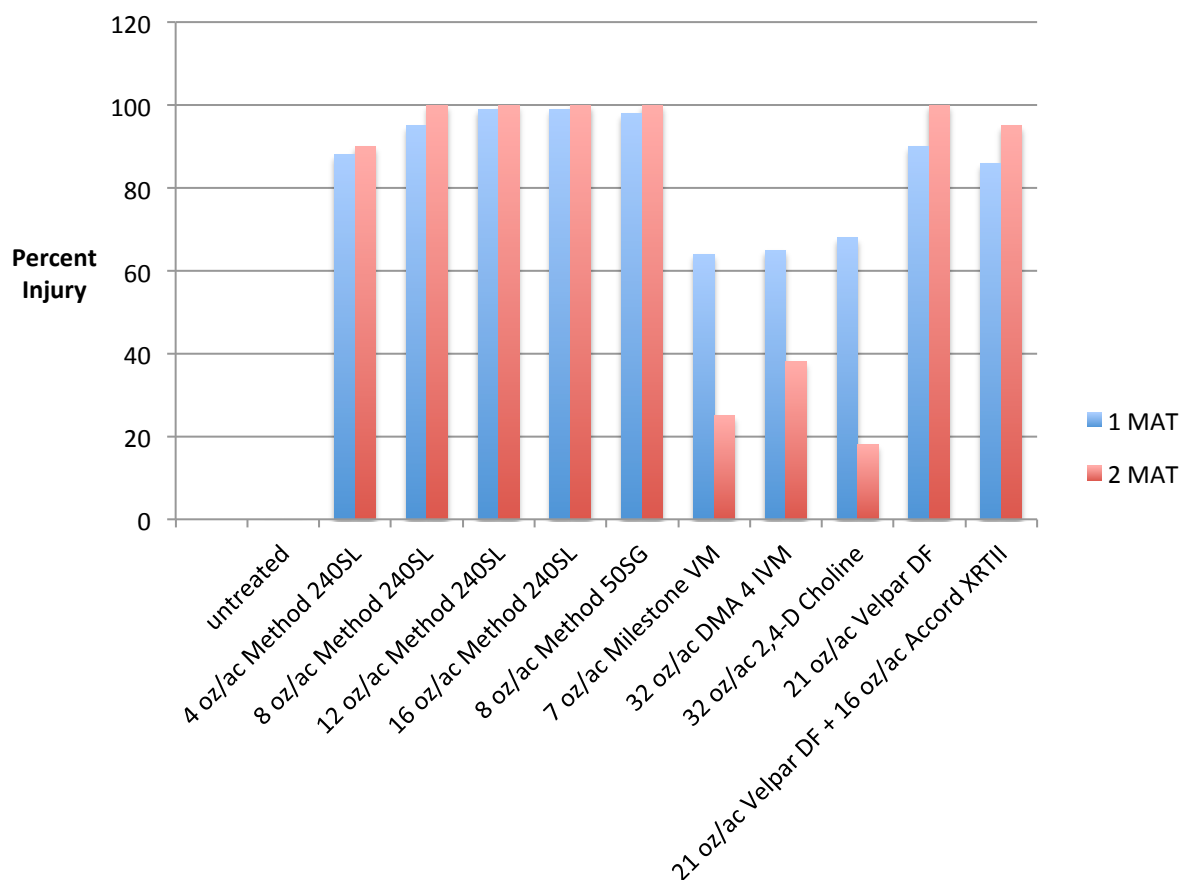
8	3	9	2	1	7	6	5	4	11	10
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treatment	product	rate (oz/ac)
1	untreated	---
2	Method 240SL	4
3	Method 240SL	8
4	Method 240SL	12
5	Method 240SL	16
6	Method 50SG	8
7	Milestone VM	7
8	DMA 4 IVM	32
9	2,4-D choline	32
10	Velpar DF	21
11	Velpar DF Accord XRTII	21 16

Poison Hemlock Control SR322/SR26 Interchange (continued)

- Treatments applied April 27, 2016
- Induce non-ionic surfactant added to all treatments @ 0.25% v/v.
- Applied with CO₂ backpack sprayer equipped with 6 ft. boom and (4) 8003VS tips
- 6 by 20 ft. plots; 30 GPA
- Poison hemlock varied from 3 to 21 inches tall, averaged 9 inches at time of application. Vegetative only.

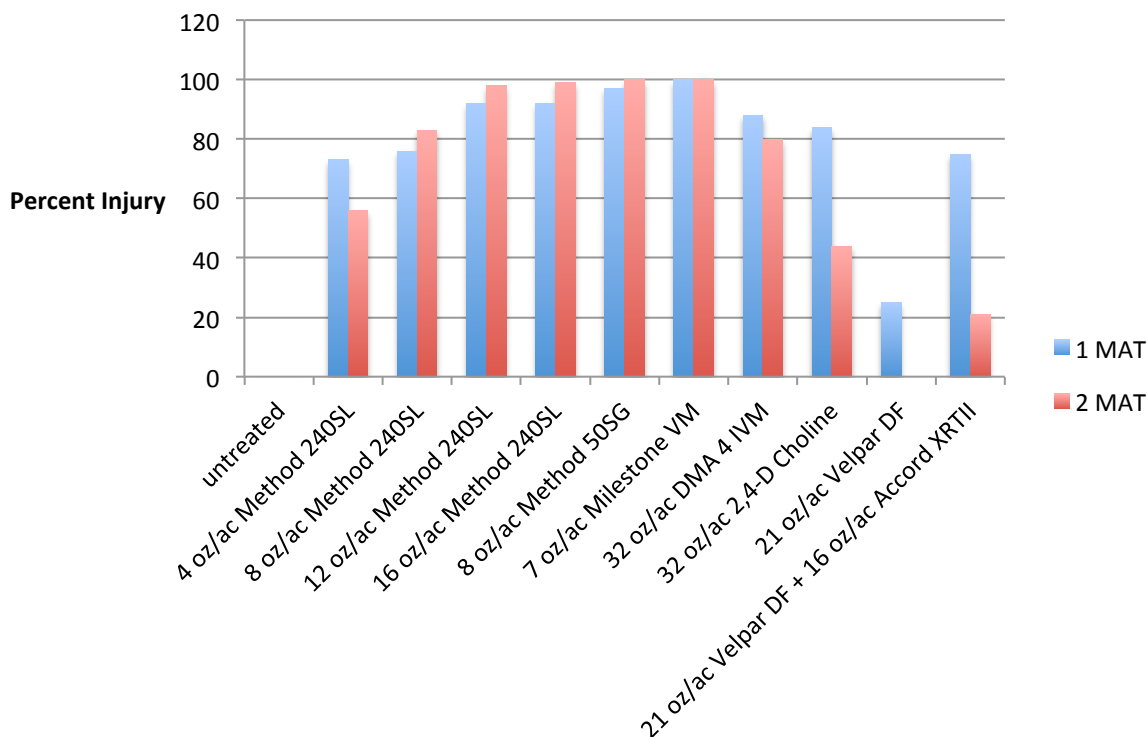
Poison Hemlock Injury



Poison Hemlock Control SR322/SR26 Interchange (continued)

- Crownvetch just coming out of dormancy at time of application. Height ranged from 1 to 5 inches, averaged 3 inches.

Crownvetch Injury



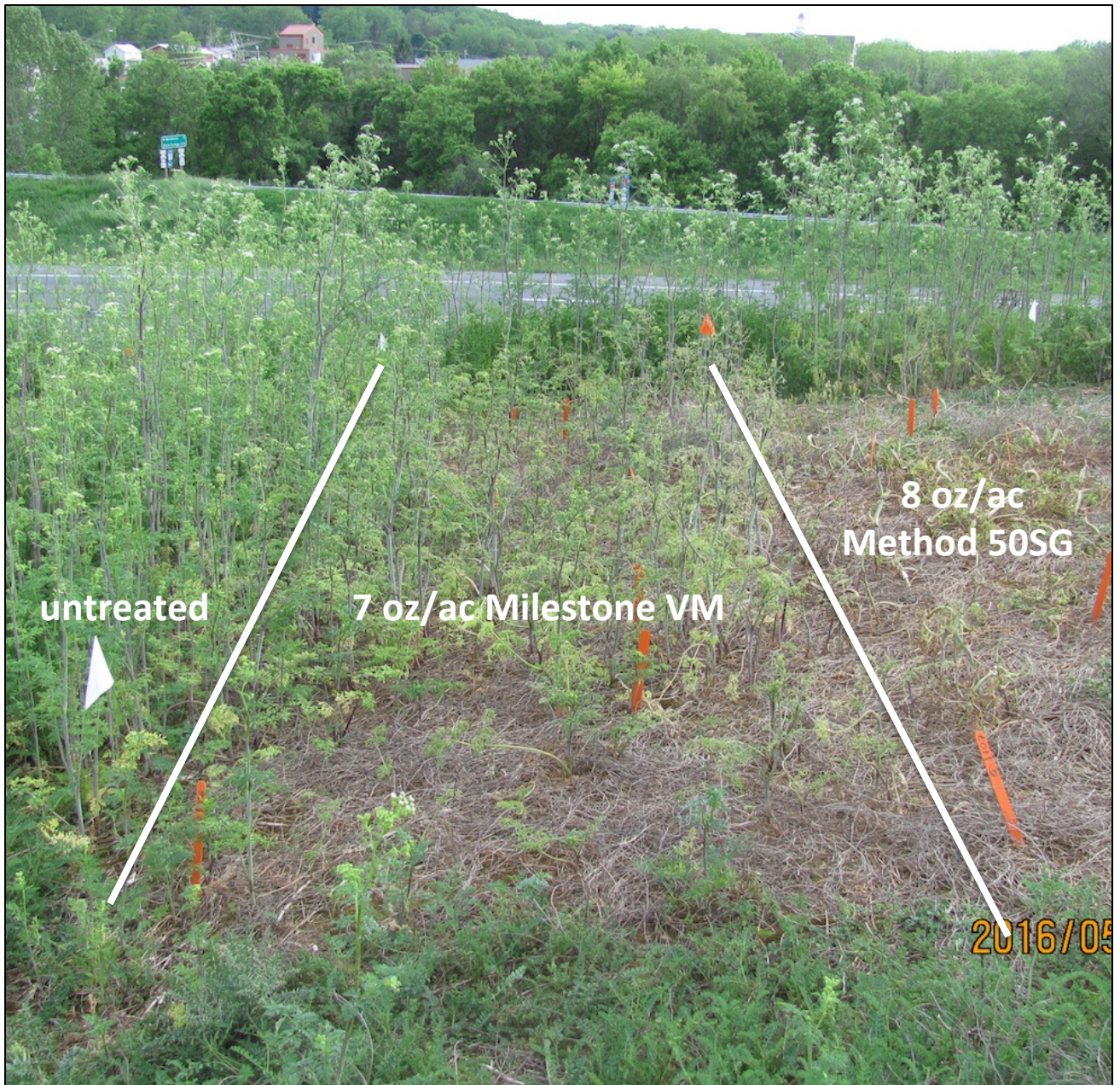
Poison Hemlock

Day of Treatment, Apr 27



Poison Hemlock

1 Month After Treatment



Equipment Demonstrations

Fischer Orchard Mower

The Fischer Orchard Mower is manufactured by Fischer Mowers, Italy. It is designed to mow around fixed obstacles such as fruit trees and within vineyards, but may provide a unique option for mowing beneath and around cable guiderails. It mows completely around posts. The unit can mow to the left and/or right depending upon the choice of model. The mowing unit can be mounted on a three-point hitch. A precision sensor allows the mowing deck to more gently pivot around obstacles. All hydraulics are self-contained and height is adjustable. OESCO, Inc. of Conway, MA is a distributor for this machine and is providing today's demonstration.

Tiger Prowler SlopePro Mower

This mowing unit is manufactured by Tiger Corp. It is a remote controlled mower capable of cutting on steep slopes up to 50 degrees. The mower is a tracked machine with a zero turn radius and equipped with a 29 hp Kohler Command PRO engine. This mower can be operated from up to 300 feet away and can handle cutting both grass and light brush. PennDOT, Centre Co., purchased one of these units two years ago and will offer a demonstration for today's field tour.

2013 RVMC



Tiger Prowler SlopePro



Map 2
Controlling Common Teasel
I-99N, near Gray's Woods Exit

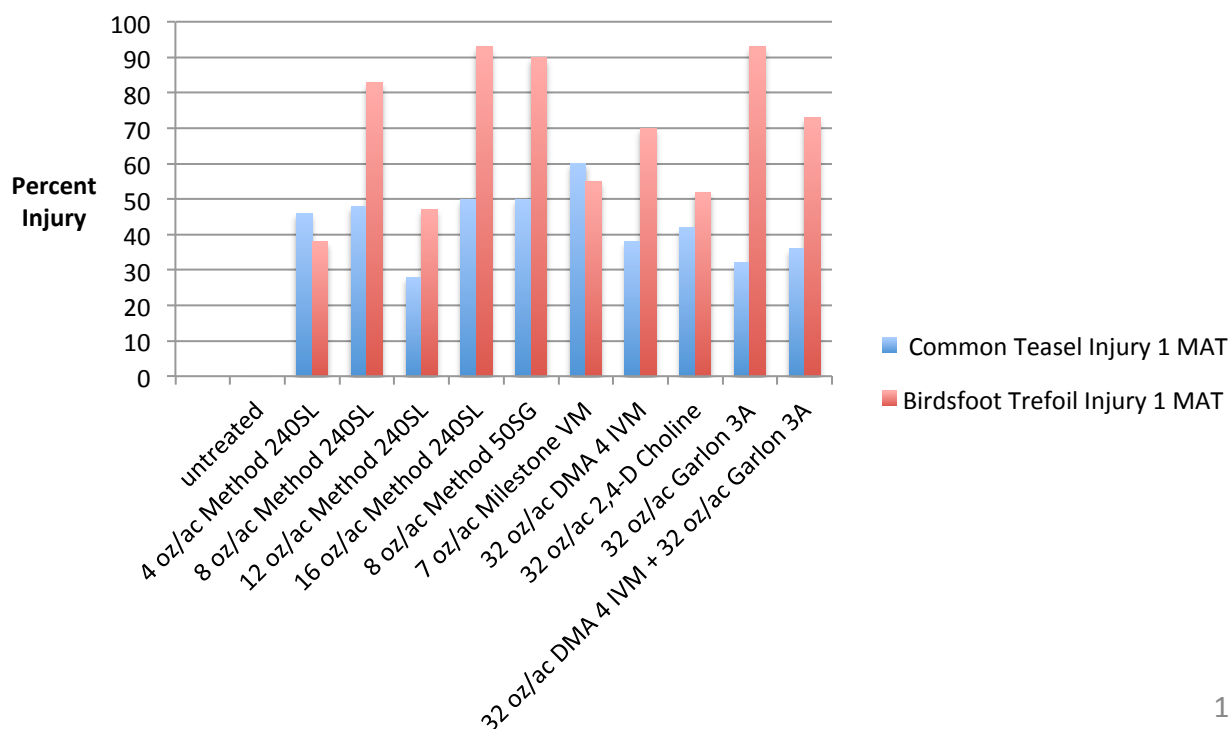
2	10	7	9	4	8	5	11	1	6	3
1	5	9	11	6	10	3	2	7	4	8

treatment	product	rate (oz/ac)
1	untreated	---
2	Method 240SL	4
3	Method 240SL	8
4	Method 240SL	12
5	Method 240SL	16
6	Method 50SG	8
7	Milestone VM	7
8	DMA 4 IVM	32
9	2,4-D choline	32
10	Garlon 3A	32
11	DMA 4 IVM	32
	Garlon 3A	32

Controlling Common Teasel I-99N, near Gray's Woods Exit (continued)

- Treatments applied June 15, 2016
 - Induce non-ionic surfactant added to all treatments @ 0.25% v/v.
 - Applied with CO₂ backpack sprayer equipped with 6 ft. boom and (4) 8002VS tips
 - 6 by 20 ft. plots, 30 GPA
-
- Common teasel varied from 6 to 50 inches tall, averaged 30 inches at time of application. Vegetative only.
 - Birdsfoot trefoil was in flower at time of application. Height ranged from 9 to 26 inches, averaged 18 inches.

Common Teasel & Birdsfoot Trefoil Injury



Common Teasel Control



Map 3

Warm Season Grass Timing Study

I-99 North, State College

8	5	1	2	7	4	6	3
8	3	4	7	5	1	2	6
3	2	4	5	1	6	8	7

← I-99 North

Treatment #	Mix	Timing
1	Native	February
2	Native	April
3	Native	July
4	Native	August
5	Crownvetch	February
6	Crownvetch	April
7	Crownvetch	July
8	Crownvetch	August

- Plot size 20 X 24 ft.
- Site Prep: ripped and graded on 10-16-08
- Seed broadcast on: 2-13-09, 4-23-09, 7-7-09, 8-21-09
- Mowed with string trimmer on 7-18-2012
- Sprayed broadleaf herbicide on 7-11-13
 - 6 oz/ac Panoramic 2SL on crownvetch plots
 - 64 oz/ac Triplet LO on native plots

Warm-season Grass Seeding Timing, Established 2008



Map 4
Seeding Rate Comparison of Formula L
Fall 2013 Seeding

ShF	2X	Fox	1X	Orc	2X	Orc	ShF	Fox	1X
2X	1X	ShF	Orc	Fox	1X	ShF	Orc	2X	Fox

← SR 322 →

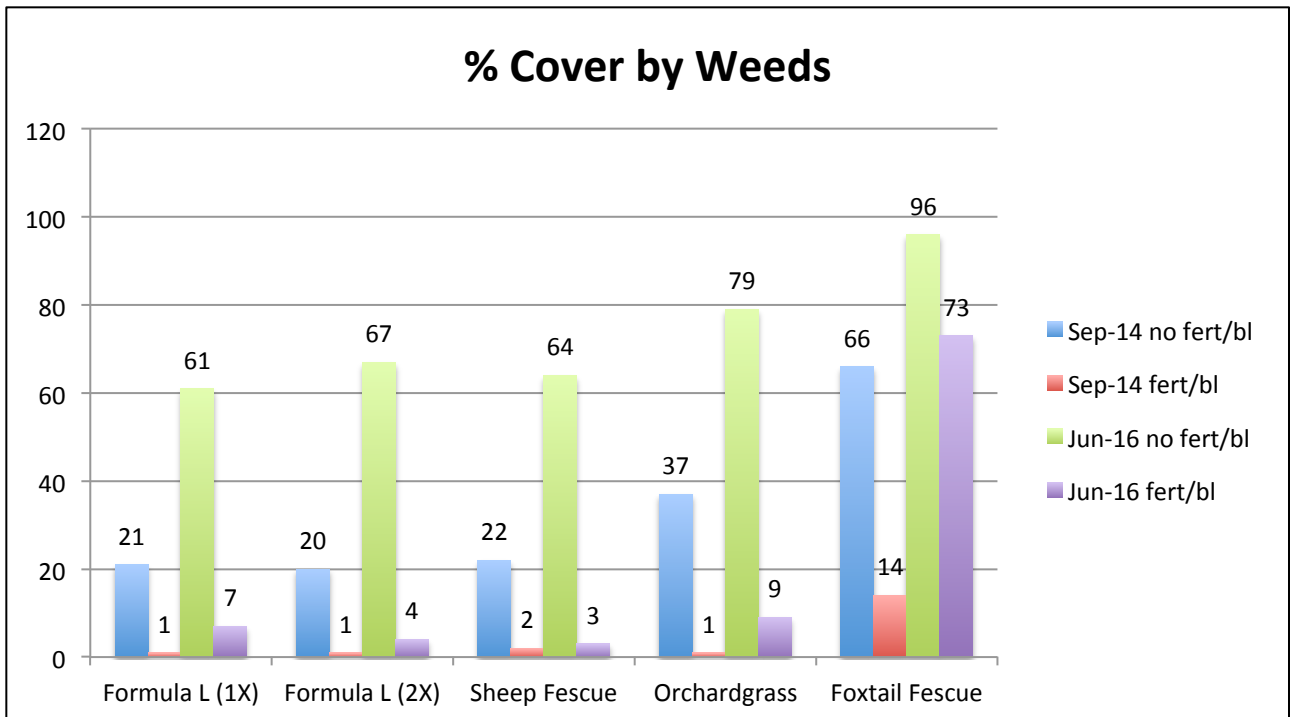
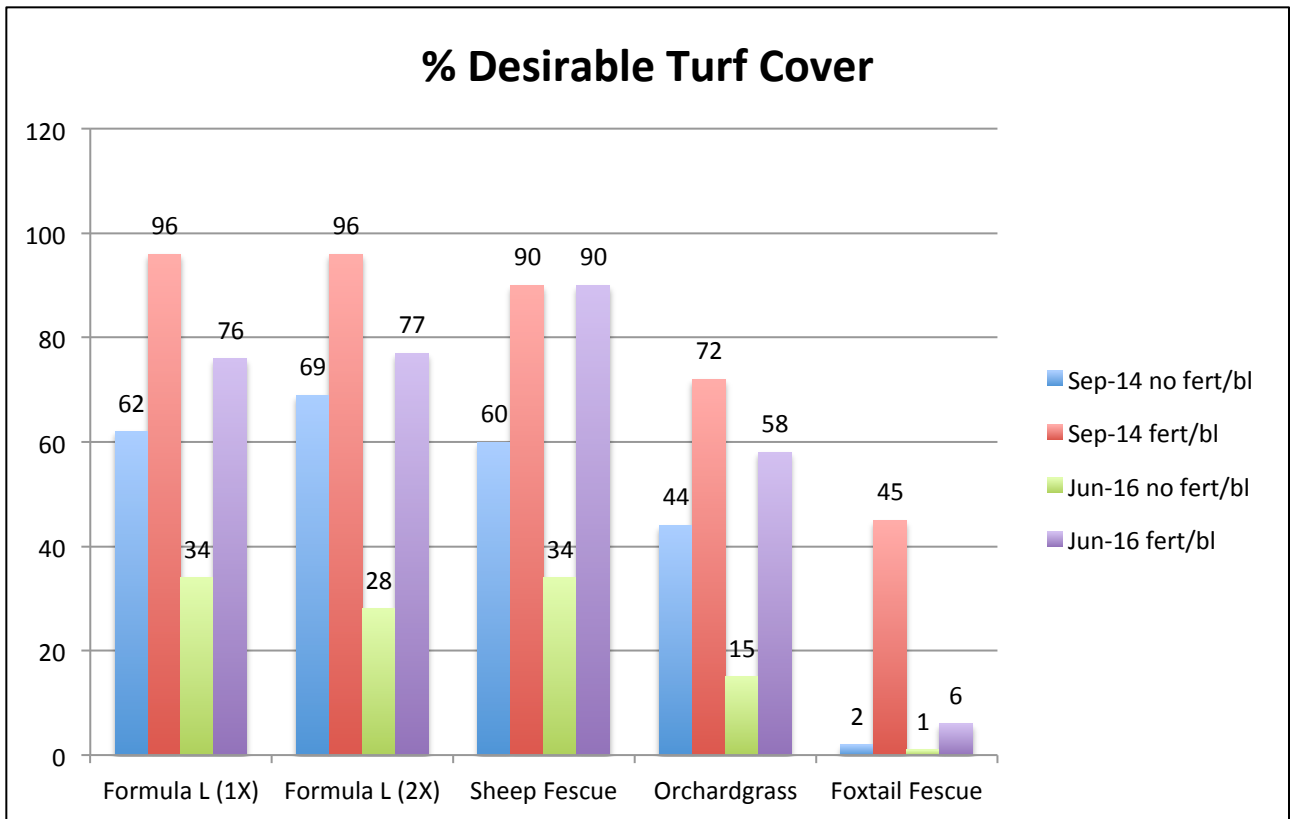
Code	Seed Mix	Rate
1X	Formula L (1X)	24 lb/1000 SY
2X	Formula L (2X)	48 lb/1000 SY
ShF	Whisper Sheep Fescue	54 lb/1000 SY
Orc	Maintain Orchardgrass	12 lb/AC
Fox	Foxtail Fescue	12 lb/AC

Seeding Comparison Sequence of Events

Fall 2013 Seeding

- Plots 15 X 24 ft - 1X vs 2X rate of Formula L + Whisper Sheep Fescue, Maintain Orchardgrass, Foxtail Fescue.
- Sept 20, 2013 - Plots sprayed with 1.5% v/v solution of Roundup Pro Max.
- Sept 30, 2013 – disced entire site
- Oct 4, 2013
 - Plots fertilized according to soil test
1 lb N, 5 lb P₂O₅, 0.5 lb K₂O/1000 SF, lime 70 lb/1000 SF
 - Broadcast seeded grasses (see table)
 - EastCoast erosion blanket installed.
(12 month straw single net blanket)
- July 7, 2014 Fertilized (1/2 each plot) with 18-5-9 to achieve 1 lb N/1000SF.
- Aug 8, 2014 Applied Broadleaf Weed Control (1/2 each plot) using PDT Blend @ 4 oz/ac + 0.25% v/v surfactant in 35 GPA.
- Aug 1, 2016 Applied Broadleaf Weed Control across entire site using PDT Blend @ 4 oz/ac + 0.25% v/v surfactant in 35 GPA.

Fall 2013 Seeding

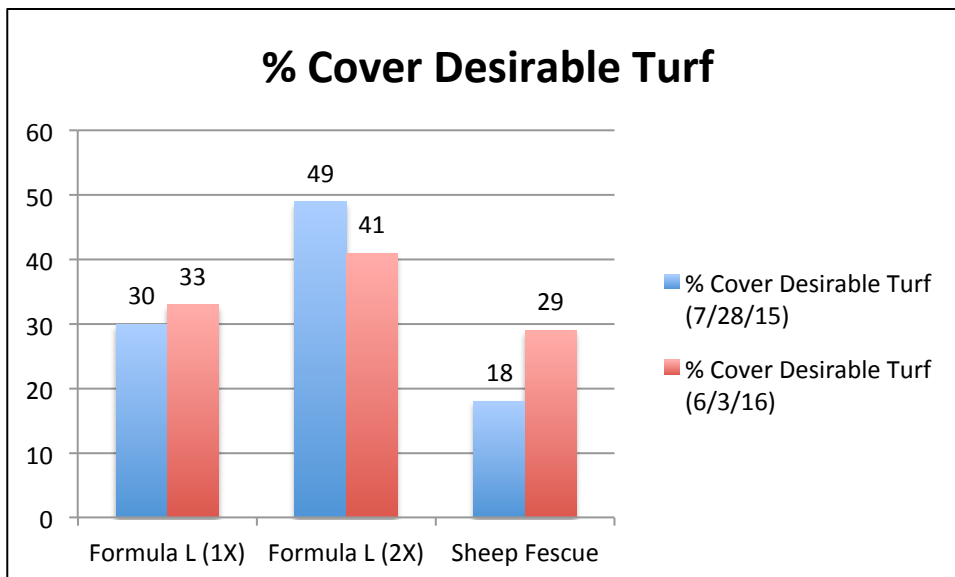


Map 5
Seeding Rate Comparison of Formula L
Spring 2015 Seeding

ShF	2X	1X	2X	ShF	1X
1X	2X	ShF	1X	ShF	2X

← SR 322 →

Code	Seed Mix	Rate
1X	Formula L (1X)	24 lb/1000 SY
2X	Formula L (2X)	48 lb/1000 SY
ShF	Sheep Fescue	54 lb/1000 SY



Seeding Comparison Sequence of Events

Spring 2015 Seeding

- Plots 15 X 24 ft - 1X vs 2X rate of Formula L + Whisper Sheep Fescue.
- April 16, 2015 - Plots sprayed with 4 qts/acre Accord XRT II.
- May 8, 2015 – Plots sprayed with 4 qts/acre Accord XRT II.
- May 12, 2015 – disced entire site.
- May 16, 2015
 - Plots fertilized according to soil test
1 lb N, 5 lb P₂O₅, 0.5 lb K₂O/1000 SF, lime 70 lb/1000 SF
 - Broadcast seeded grasses (see table)
 - EastCoast erosion blanket installed.
(12 month straw biodegradable double net blanket)
- August 1, 2016 – Plots sprayed with 1.5 qts/acre Vastlan + 2 qt/acre 2,4-D choline + 0.25% v/v NIS surfactant.

Seed Establishment Comparison – Spring 2015



2015/05/22

Seed Establishment Comparison – Spring 2015



Map 6

Bareground Herbicide Comparison Penn State Research Farm

Lane	16	4	15	6	5	10	14	3	12	8	13	1	7	9	2	11
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16

Trt	Product	Rate (oz/ac)	Trt	Product	Rate (oz/ac)
1	untreated	---	9	Pendulum AC	134
2	Accord XRT II	64	10	Milestone VM	7
3	Esplanade	5	11	Rezilon Esplanade	4 5
4	Rezilon	4	12	CleanTraxx Esplanade	64 5
5	CleanTraxx	48	13	Portfolio 4F Esplanade	12 5
6	CleanTraxx	64	14	Plateau Esplanade	12 5
7	Portfolio 4F	12	15	Milestone VM Esplanade	7 5
8	Plateau	12	16	CleanTraxx Milestone VM	64 7

- Applied May 24, 2016
- Added Induce non-ionic surfactant @ 0.25% v/v to all treatments.
- Accord XRT II @ 64 oz/ac added to all treatments.
- Applied at 50 GPA.
- Plot size 20 x 6 ft., 2 reps.

Bareground Herbicide Comparison



Map 7

Turf Growth Regulator Comparison Demo

Penn State Research Farm

Lane	11	8	7	1	3	2	9	5	6	10	12	4
	1	2	3	4	5	6	7	8	9	10	11	12
	Bareground Demo											

Trt	Product	Rate (oz/ac)	Trt	Product	Rate (oz/ac)
1	untreated	---	7	Plateau Escort XP Method 240SL	4 0.2 10
2	Plateau Method 240SL	2 10	8	Escort XP Method 240SL	0.33 10
3	Plateau Method 240SL	3 10	9	Embark Escort XP Method 240SL	6 0.2 10
4	Plateau Method 240SL	4 10	10	Segment Method 240SL	8 10
5	Plateau Escort XP Method 240SL	2 0.2 10	11	Segment Method 240SL	16 10
6	Plateau Escort XP Method 240SL	3 0.2 10	12	Segment Method 240SL	24 10

- Treatments applied August 8, 2016
- Induce non-ionic surfactant added to all treatments @ 0.25% v/v.
- Applied with CO₂ backpack sprayer using 6 ft. boom and (4) 8003VS tips
- 6 by 20 ft. plots, 35 GPA

QUESTIONS?

