2019 OSU Turf Field Day

Lewis Brown Horticulture Farm
Corvallis, OR
33329 Peoria Rd.
Corvallis, OR 97333
Thursday –August 29, 2019

Speakers:

Alec Kowalewski, Turfgrass Specialist
alec.kowalewski@oergonstate.edu

Brian McDonald, Senior Faculty Research Assistant
brian.mcdonald@oregonstate.edu

Emily Braithwaite, Faculty Research Assistant
emily.braithwaite@oregonstate.edu

Clint Mattox, Graduate Assistant
mattoxc@oregonstate.edu

Alyssa Cain, Graduate Assistant
caina@oregonstate.edu

Field Day Agenda

Research PowerPoint Presentations: 9:00 to 10:00
OSU Education and Extension Update. Speaker – Alec Kowalewski
Effects of Aerification and Fertilization Timing on Drought Resistance in Lawns (page 3). Brian McDonald
New Product Updates (page 4 and 5). Brian McDonald
Fungicide Alternatives for Microdochium Patch on Annual Bluegrass Putting (page 6). Clint Mattox
Evaluation of Potential Low-Input Turfgrass Patch and Repair Options (page 7). Emily Braithwaite
Influence of Phosphorus Rates on Annual Bluegrass and Perennial Ryegrass Establishment Competition (page 8). Alyssa Cain
Formal Field Tour: 10:00 to 11:00 am
Stop 1: Anthracnose Fungicide Screening (page 9 to 11). Brian McDonald
Stop 2: Effects of Cultural Management Practices on Weed Populations (page 12). Emily Braithwaite
Stop 3: Do Winter Applications of Alternative Fungicide Applications Affect Summer Putting Green Performance (page 13)? Clint Mattox
Stop 4: Suppressing Annual Bluegrass with Irrigation Regimes (page 14). Alyssa Cain
Stop 5: National Turfgrass Evaluation Program Tall Fescue (page 15 and 16). Alec Kowalewski
Open House: 11:00 to 11:30 am
Featured Projects: • Comparison of DryJect Fill Material Demonstration (page 17) • Effects of Aerification and Fertilization Timing on Drought Resistance in Lawns (page 18). • Herbicide Demo Trial – Removing Perennial Ryegrass from Annual Bluegrass (page 19). • New Broadleaf Herbicides (page 20). • National Turfgrass Evaluation Program Perennial Ryegrass (page 21 and 22). • Evaluation of Seeding Dates on Fine Fescue Establishment (page 23). • Quantifying the effects of the surface pH of an annual bluegrass putting green on the suppression of Microdochium patch (page 24).
Lunch: 11:30 to 12:30 pm at Lewis Brown Farm
Jason Oliver Memorial Golf Tournament and Dinner **1:00 to 6:00 pm at Trysting Tree Golf Course**
Exhibitor List and Golf Outing Sponsors: Page 25
2017/2018 Research Supporters: Page 26
2018 Scholarships and Awards: Page 27

Effects of Aerification and Fertilization Timing on Drought Resistance in Lawns

Brian McDonald

9:00 to 9:10 am

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Purpose:

The purpose of this trial is to determine whether aerification and fertilization timing in the spring will impact drought resistance (i.e. the ability of the grass to stay green longer with less water) in lawns.

Introduction:

Most cool season grasses have annual root systems and produce new roots in the spring. Nitrogen fertilizer causes grass growth, but excessive fertilizer will cause excessive leaf growth at the expense of roots.

Definitions:

- Drought Tolerance: a general (and vague) term used to describe turfgrass water use. In common language, a grass with good drought tolerance is thought to mean the grass uses less water. Water use, in theory, is simple, but in the field, water use declines as water availability declines.
- Drought Resistance: The ability of grass to stay green longer with reductions in watering.
- Drought Survival: The ability of a grass to survive long term drought either through dormancy or producing seed that will germinate in the fall.

Material and Methods:

The trial was initiated on March 22nd, 2019 with the first aerification timing treatment. Aerification was done using a John Deere Aercore 800 on Setting 3 (4" x 2" spacing). Subsequent aerification treatments were completed on April 19th, May 17th, and June 22nd. Fertilizer applications were made two to three days after the aerification treatments using Methylene urea 40-0-0 at a rate of 1 lb of nitrogen per 1,000 ft^2.

New Products Update
Brian McDonald
9:10 to 9:15 am

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New Fungicides for Anthracnose:

Visual percent disease of fungicide treatments assessed from 30 June to 7 September 2018 in Corvallis, OR. Treatments were initiated 22 June 2018 and applied every 14 days until 31 August 2018 using a carrier volume of 2.0 gallons per 1000ft^2.

		06/30/18	07/27/18	08/24/18	09/07/18
Treatment	**Rate/M**	Percent disease (0-100%)			
Untreated control	na	0.0	13.5	17.5	20.0
Maxtima	0.40	0.0	0.1	0.3	0.4
Maxtima	0.60	0.0	0.2	0.1	0.6
Maxtima	0.80	0.0	0.1	0.0	0.2
Torque	1.1	0.0	0.1	0.6	0.3
Navicon Intrinsic	0.85	0.0	0.2	0.2	0.3
Headway	3.0	0.0	0.3	0.2	0.1
Traction	1.3	0.0	0.0	0.3	0.2

New Herbicide for Removing Perennial Ryegrass from Annual Bluegrass:

Perennial Ryegrass Injury (1 – 9; 1 = no injury; 9 = 100% dead) (1st Application – 8/16/18)

Treatments	Herbicide Rate	First Application 8/16/18 Perennial Ryegrass Injury Ratings (1 - 9; 1 = no injury)				
		4 DAT	7 DAT	14 DAT	21 DAT	28 DAT
		08/20	08/23	08/30	09/06	09/13
Untreated	na	1.0	1.0	1.0	1.0	1.0
Fusilade II + Induce (0.5 % v/v)	8 oz/A	1.5	1.8	2.3	2.6	2.5
Fusilade II + Induce (0.5 % v/v)	16 oz/A	1.8	2.3	2.8	4.0	4.0
Fusilade II + Induce (0.5 % v/v)	24 oz/A	2.3	2.5	3.3	5.0	6.3
Manuscript + Adigor (0.5% v/v)	19.2 fl oz/A	1.0	2.3	6.0	8.5	8.6
Manuscript + Adigor (0.5% v/v)	38.4 fl oz/A	1.5	3.0	7.3	8.5	9.0
	LSD @ .05	0.69	0.88	0.66	0.74	0.54

New Herbicide for Removing Perennial Ryegrass from Annual Bluegrass Continued…

Percent Perennial Ryegrass Control 11-14-18 (0 - 100%)

Treatments	Herbicide Rate	Percent Control 11-14-18
Untreated	na	0.0
Fusilade II + Induce (0.5 % v/v)	8 oz/A	88.3
Fusilade II + Induce (0.5 % v/v)	16 oz/A	98.2
Fusilade II + Induce (0.5 % v/v)	24 oz/A	100.0
Manuscript + Adigor (0.5% v/v)	19.2 fl oz/A	100.0
Manuscript + Adigor (0.5% v/v)	38.4 fl oz/A	100.0
	LSD @ .05	7.95

Fungicide Alternatives for Microdochium Patch on Annual Bluegrass Putting
Clint Mattox
9:15 to 9:30 am

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Laboratory trials have suggested that chelated iron suppresses the growth of *Microdochium nivale*, the pathogen responsible for Microdochium patch. It is speculated that chelated iron may suppress Microdochium patch while not adversely affecting turfgrass quality. Therefore, a field trial was initiated in September 2018 to compare iron applied every two weeks as either iron sulfate or as chelated iron (DTPA) in combination or in absence of phosphorous acid. In order to mimic real-world conditions when the applications are made, replicated golfer traffic is being applied to the plots by walking over the area with golf course shoes during the fall and the winter months.

Preliminary results suggest both iron sources, when combined with phosphorous acid, produce very little visual differences in disease suppression. Although, there is some visual evidence that iron sulfate alone may suppress Microdochium patch more than DTPA iron. Visual turfgrass density appears to be higher in plots receiving DTPA iron compared to plots receiving iron sulfate (Image 1).

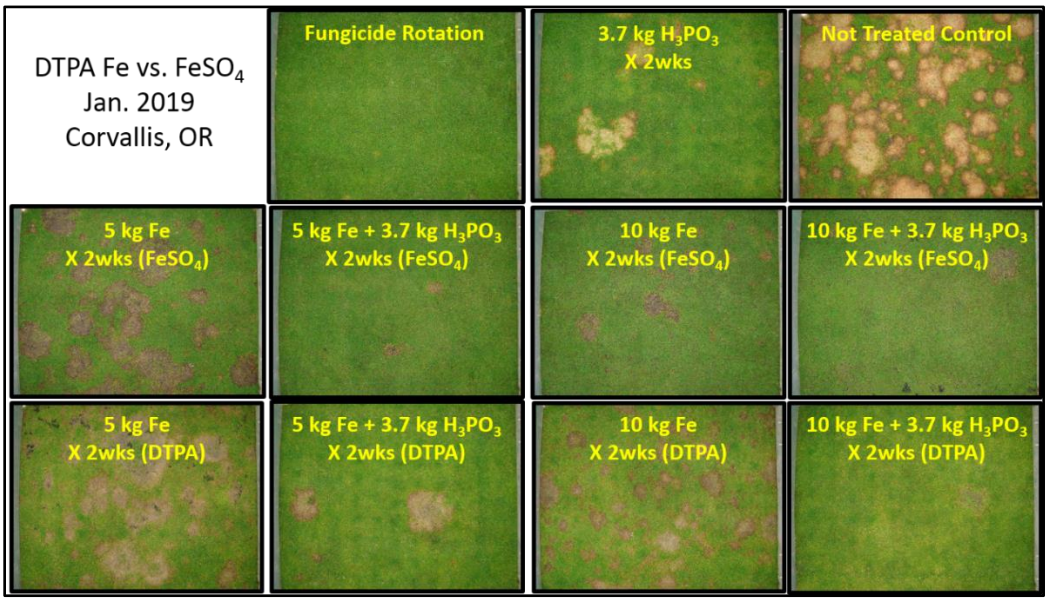

Image 1: Effects of iron sulfate ($FeSO_4$) or chelated iron (DTPA) in the presence or absence of phosphorous acid (H_3PO_3) compared to a not treated control and a fungicide rotation on an annual bluegrass putting in Corvallis, OR. For year one of the study, applications began on the 4th of September 2018 and will be applied every two weeks until the 15th of April 19.

Evaluation of Potential Low-Input Turfgrass Patch and Repair Options
Emily Braithwaite
9:30 to 9:45

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The objective of this trial is to assess potential low-input turfgrass patch and repair options for home lawns in the spring. This study is being conducted in Oregon and at Purdue University in Indiana. The experiment is a two-way treatment structure in a randomized complete block with four replications. Treatments are listed below:

			Amount to include (% by volume)		
Trt#	**Mulch Ingredient**	**Fertilizer**	Mulch (94-95%)	Fertilizer (1%)	Seed (5%)
			---- volume ----	--------- Weight (volume) --------	
1	Top soil	Yes	0.94 qt (890 ml)	8 g (10 ml)	14.7 g (47.3 ml)
2	Paper-based mulch	Yes	0.94 qt	8 g	13.7
3	Potting soil	Yes	0.94 qt	8 g	14.7
4	Compost	Yes	0.94 qt	8 g	14.7
5	Newspaper	Yes	0.94 qt	8 g	14.7
6	Woodchips	Yes	0.94 qt	8 g	14.7
7	No mulch	Yes	0	8 g	14.7
8	Top soil	No	0.95 qt (899 ml)	0	14.7
9	Paper-based mulch	No	0.95 qt	0	14.7
10	Potting soil	No	0.95 qt	0	14.7
11	Compost	No	0.95 qt	0	14.7
12	Newspaper	No	0.95 qt	0	14.7
13	Woodchips	No	0.95 qt	0	14.7
14	No mulch	No	0	0	14.7

Field plots were seeded April 24th, 2019 using a fine fescue seed mixture containing 25% (by weight) of 'Navigator II' strong creeping red fescue, 24.9% 'Radar' Chewings fescue, 24.9% 'Beacon' hard fescue, and 24.4% 'Seabreeze GT' slender creeping red fescue. When fertilizer was included, a starter fertilizer with an analysis of 15-23-10 (Menards Premium Starter Fertilizer, Eau Claire Coop Oil Co., Eau Claire, WI 54702) was used.

Data collected included the days to first germination of each plot. Daily weather data of air and soil temperature (2-inch depth), and precipitation were collected from a nearby weather station for each site to calculate growing degree days (GDD). Visual turf cover (0-100%) and visual turf quality on a 1-to-9 scale (1 = poorest quality, 6 = minimally acceptable, and 9 = highest quality according to color, texture, density, and uniformity) began on 7 May, 2019 and continued weekly thereafter until 14 August, 2019.

Preliminary results have shown that a starter fertilizer may not be needed, depending on the mulch ingredient used. In both Oregon and Indiana, potting soil and compost have been the best performing, with quick germination and establishment to full cover. Shredded paper has been the worst performing, both germination and establishment were inhibited by the mulch material. Complete results will be presented at ASA, CSSA and SSSA International Meetings, San Antonio, TX.

Influence of Phosphorus Rates on Annual Bluegrass (*Poa annua*) and Perennial Ryegrass (*Lolium perenne*) Establishment Competition.

Alyssa Cain
9:45 to 10:00

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Annual bluegrass is considered a common winter annual weed that can be found just about anywhere: in sidewalk cracks, flowerbeds, and any stand of grass. Research has shown that increasing phosphorus fertilization effects annual bluegrass populations in most soil types to produce a more vigorous plant. (Guertal and McElroy 2013). Oregon State University joined the Specialty Crop Research Initiative (SCRI) Poa annua grant, a nation-wide and multi-university grant, to research annual bluegrass control using different cultural, mechanical, and chemical techniques. For this objective of the SCRI grant, we are assessing the competitiveness and vigor of annual bluegrass when seeded with perennial ryegrass.

Objective: To evaluate the effects of varying phosphorus rates on the establishment competition of perennial ryegrass and annual bluegrass when seeded together.

thods and Materials: For this research, pots were filled with USGA specification sand (10.7ppm phosphorus, Mehlich III analysis). Pots received different rates of Triple Superphosphate (phosphorus): 0kg/ha, 25 kg/ha, 50kg/ha, 99kg/ha, and 197 kg/ha. 'Black Cat II' perennial ryegrass was seeded into 20 of the pots and 'Home Run LS' perennial ryegrass was seeded into another 20 pots at 10lbs/1000ft^2. 'True Put' annual bluegrass was seeded at a rate of 21 seeds per 6" diameter pot. Pots were watered daily with 0.1" waterusing an overhead misting boom located in the East greenhouses on the OSU campus. Pictures were taken once a week and mowing took place when needed. Clippings were collected for a dry weight analysis. Normalized Difference Vegetative Index (NDVI) readings and percent germination of the annual bluegrass were taken at the conclusion of the experiment (97 days).

Results (So far): Pots that did not receive phosphorous had the greatest annual bluegrass populations compared to pots fertilized with phosphorous. Phosphorous rates (25 to 97 kg/ha) had no effect on annual bluegrass populations when seeded with perennial ryegrass. Perennial ryegrass cultivar did not have an effect on annual bluegrass populations.

P Rate (kg/ha)	Plants per pot	
0	13.8	b
25	16.6	a
50	16.6	a
99	15.6	a
197	16.2	a

Table 2. We observed a difference in adding phosphorus and not adding phosphorus (0kg/ha vs 25, 50, 99, or 197 kg/ha).

Formal Field Tour – 10:00 to 11:00

Stop 1: Anthracnose Fungicide Screening
Brian McDonald

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Fungicides for Anthracnose Trial (south side)
Initiated: 06-20-19
Applied every two weeks

Trt #	Treatments	Rate/M	
1	Untreated	na	
2	Enclave	4.0	fl. oz.
3			
4			
5			
6			
7	DuraPhite + Ambient Plus	3.0 + 0.37	fl. oz.
8	DuraPhite + Extreme Green 20 (iron sulfate) + Ambient Plus	3.0 + 2.0 + 0.37	fl. oz./wt. oz./fl. oz.
9	Duraphite + MoCa 5-0-5	3.0 + 3.0	fl. oz./fl.oz.
10	Duraphite + MoCa 5-0-5 + Ambient Plus	3.0 + 3.0 + 0.37	fl./fl./fl.
11	DuraPhite (14 Days) + Daconil W/S (28 days)	3.0 + 5.5	fl. oz./fl. oz.
12	Rotation 1 - Civitas + Duraphite + Low Rate Fungicides	See below	
13	Rotation 2 - Civitas + Duraphite + High Rate Fungicides	See below	
14	Rotation 3 -Duraphite + Low Rate Fungicides	See below	
15	Rotation 4 - Duraphite + High Rate Fungicides	See below	

Rotation 1: Applied every 2 weeks	fl. oz./M
Civitas + Duraphite + Torque + Primo	8.5 + 3.2 + 0.3 + 0.125
followed by Civitas + Duraphite + Primo	8.5 + 3.2 + 0.125
followed by Civitas + Duraphite + Briskway + Primo	8.5 + 3.2 + 0.3 + 0.125
followed by Civitas + Duraphite + Primo	8.5 + 3.2 + 0.125
followed by Civitas + Duraphite + Velista + Primo	8.5 + 3.2 + 0.3 + 0.125
followed by Civitas + Duraphite + Primo	8.5 + 3.2 + 0.125
followed by Civitas + Duraphite + Affirm + Primo	8.5 + 3.2 + 0.9 + 0.125

Rotation 2: Applied every 2 weeks	fl. oz./M
Civitas + Duraphite + Torque + Primo	8.5 + 3.2 + 0.6 + 0.125
followed by Civitas + Duraphite + Primo	8.5 + 3.2 + 0.125
followed by Civitas + Duraphite + Briskway + Primo	8.5 + 3.2 + 0.6 + 0.125
followed by Civitas + Duraphite + Primo	8.5 + 3.2 + 0.125
followed by Civitas + Duraphite + Velista + Primo	8.5 + 3.2 + 0.5 + 0.125
followed by Civitas + Duraphite + Primo	8.5 + 3.2 + 0.125
followed by Civitas + Duraphite + Affirm + Primo	8.5 + 3.2 + 0.9 + 0.125

Rotation 3: Applied every 2 weeks	fl. oz./M
Duraphite + Torque + Primo	3.2 + 0.3 + 0.125
followed by Duraphite + Primo	3.2 + 0.125
followed by Civitas + Duraphite + Briskway + Primo	3.2 + 0.3 + 0.125
followed by Duraphite + Primo	3.2 + 0.125
followed by Duraphite + Velista + Primo	3.2 + 0.3 + 0.125
followed by Duraphite + Primo	3.2 + 0.125
followed by Duraphite + Affirm + Primo	3.2 + 0.9 + 0.125

Rotation 4: Applied every 2 weeks	fl. oz./M
Duraphite + Torque + Primo	3.2 + 0.6 + 0.125
followed by Duraphite + Primo	3.2 + 0.125
followed by Duraphite + Briskway + Primo	3.2 + 0.6 + 0.125
followed by Duraphite + Primo	3.2 + 0.125
followed by Duraphite + Velista + Primo	3.2 + 0.5 + 0.125
followed by Duraphite + Primo	3.2 + 0.125
followed by Duraphite + Affirm + Primo	3.2 + 0.9 + 0.125

East -->

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

Anthracnose Fungicide Screening Continued…

Fungicides for Anthracnose Trial (north side)
Oregon State University
Initiated:6-20-19

Trt #	Treatments appled every two weeks	rate / 1,000 sq ft
1	Untreated	na
2	Heritage Action + Primo	0.40 oz. + 0.10 fl. oz.
	rotated with Dac Action + Secure Action + Primo	3.5 fl. oz. + 0.50 fl. oz. + 0.10 fl. oz.
3	Dac Action + Appear II + Primo	3.5 fl. oz. + 6.0 fl. oz. + 0.10 fl. oz.
4	Dac Action + Secure Action + Primo	3.5 fl. oz. + 0.50 fl. oz. + 0.10 fl. oz.
5	Velista + Primo Maxx	0.50 fl. oz. + 0.10 fl. oz.
	followed by Daconil Action + Primo Max	3.50 fl. oz. + 0.10 fl. oz.
	followed by Heritage Action + Primo Maxx	0.40 fl. oz. + 0.10 fl. oz.
6	Premion + Par	4.0 fl. oz. + 0.37 fl. oz.
7	Premion + Par	6.0 fl. oz. + 0.37 fl. oz.
8	Premion + Par	8.0 fl. oz. + 0.37 fl. oz.
9	Autilus	6.0 fl. oz. + 0.37 fl. oz.
10	Amvac Rotation (see below)	see below
11	Mirage + Primo	1.5 fl. oz.+ 0.10 fl. oz.
	rotated with Signature Xtra + Primo	4.0 oz. + 0.10 fl. oz.
12	Standard Rotation	see below

AMVAC Rotation	Rate/M
Premion + Par	8.0 + 0.37
followed by Signature Xtra + Previa	4.0 oz. + 3.6 fl oz.
followed by Velista + Affirm	0.30 + 0.90
followed by Oximus + Medallion WDG	1.0 + 0.39
followed by Signature Xtra + Previa	4.0 + 3.6

Standard Rotation	Rate/M
Torque + Chloro 725 SFT	0.60 fl. oz. + 3.5 fl. oz.
followed by Duraphite + T-methyl 4.5 + Chloro 725 SFT+ Primo	3.2 + 3.55 + 3.5 + 0.10
followed by Torque + Chloro 725 SFT	0.50 fl. oz. + 3.5 fl. oz.
followed by Velista + Duraphite + Chloro 725 SFT + Primo	0.50 fl. oz. + 3.2 fl. oz. + 3.5 fl. oz. + 0.10 fl. oz.
followed by Duraphite + Chloro 725 SFT + Primo	3.2 fl. oz. + 3.5 fl. oz. + 0.10 fl. oz.
followed by Banner + Secure	2.0 fl. oz. + 0.50 fl. oz.

East ---->

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

Anthracnose Fungicide Screening Continued…

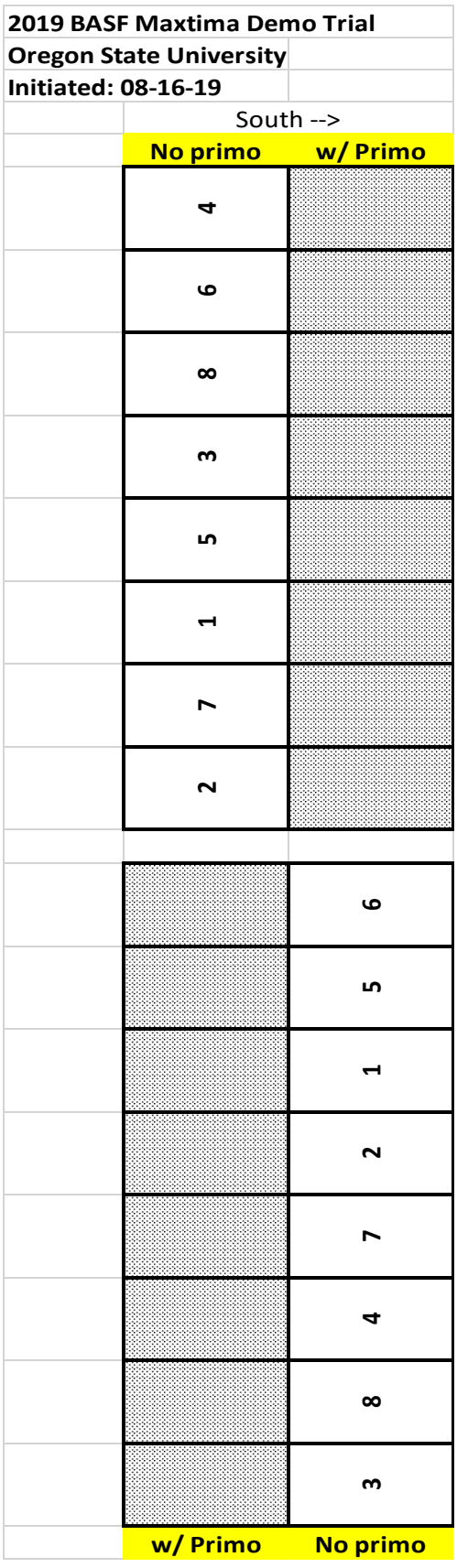
Trt #	Product	fl. oz./M
1	Maxtima*	0.60
2	Navicon Intrinsic**	0.85
3	Banner	1.50
4	Briskway***	0.725
5	Torque	0.60
6	Mirage	1.50
7	Trinity	1.00
8	Untreated	na

* Maxtima is 3.34 lbs ai/gal mefentrifluconazole (aka Revysol).

** Navicon is Maxtima + Insignia (equivalent rates: Maxtima 0.35 fl oz/M; Insignia SC 0.68 fl. oz/M).

*** Briskway is Difenaconazole + Azoxystrobin

Primo applied at 0.125 fl oz/1,000 sq. ft.



Stop 2: Effects of Cultural Management Practices on Weed Populations.
Emily Braithwaite

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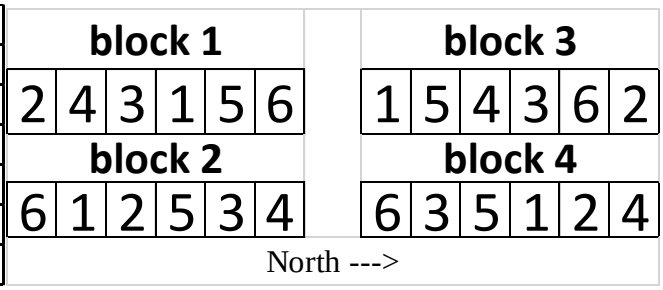
Effects of Mowing Height and Frequency on Weed Populations.

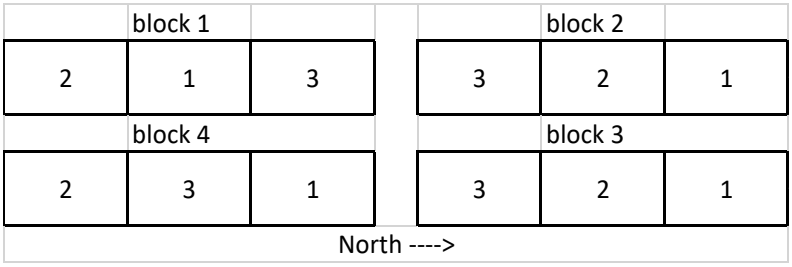
Trt	Mowing Height	Mowing Frequency
1	2 inches	1x per month
2	2 inches	2x per month
3	2 inches	4x per month
4	4 inches	1x per month
5	4 inches	2x per month
6	4 inches	4x per month



The objective of this project is to determine how variations in mowing practices can affect turfgrass quality and weed populations. The factors used include height (2 and 4 inches) and frequency (weekly, every other week, and monthly). Preliminary findings show that the 4 inch mowing height resulted in significantly fewer broadleaf weeds than plots maintained at 2 inches.

Effects of Fertilization on Weed Populations.

Trt	Annual Fertilizer Rate
1	None
2	2.0 lbs N/1000ft^2
3	4.0 lbs N/1000ft^2



The objective of this project is to determine how variations in fertilization practices can affect turfgrass quality, weed populations, and maintenance intensity. Treatments used in this study include 0, 2.0, and 4 lbs/1000ft^2 of nitrogen applied annually. Findings from this trial determined that fertilization reduced weed populations as compared to non-fertilized plots, with the higher nitrogen rate showing the lowest incidence of weeds. However, the fertilized plots required more frequent mowing than the unfertilized plots.

Stop 3: Do winter applications of alternative fungicide applications affect summer putting green performance?

Clint Mattox

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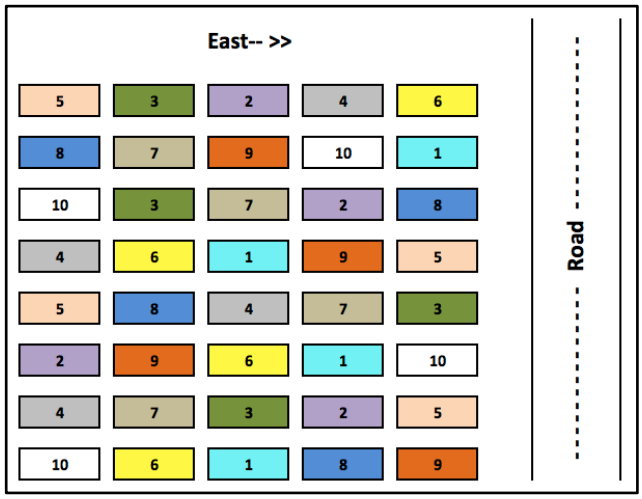
Background:

Since 2013, great strides have been made regarding the management of Microdochium patch in the absence of traditional fungicides in the Pacific Northwest however the long-term effects of these practices on sand-based annual bluegrass putting green nutrition or physical characteristics is not yet known and neither are the effects of these practices on the performance of the putting green throughout the summer following a winter regime of these treatments.

Objective:

In addition to quantifying Microdochium patch suppression and winter turfgrass quality, this experiment aims to provide information about the long-term impacts that repeated phosphorous acid, mineral oil, sulfur, and/or iron sulfate has on soil fertility, summer anthracnose, and summer putting green performance with or without the use of fungicides. Data collection will include annual soil fertility levels, summer putting green speed, summer water infiltration, summer volumetric water content %, summer NDVI, monthly disease incidence (primarily Microdochium patch and anthracnose), and monthly turfgrass quality. A beneficial outcome of this research will be to provide answers to golf course superintendents regarding the long-term use of alternative techniques to manage Microdochium patch on annual bluegrass putting greens.

Trt # 1	Elemental Sulfur Duraphite 12	0.25 #/M 3.2 oz./M
Trt # 2a (Sep, Oct, Nov, Apr)	Civitas One Duraphite 12	8.5 oz./M 3.2 oz./M
Trt # 2b (Dec, Jan, Feb, Mar)	Elemental Sulfur Duraphite 12	0.25 #/M 3.2 oz./M
Trt # 3a	Civitas One Duraphite 12	8.5 oz./M 3.2 oz./M
Trt # 3b (in 4-wk rotation)	Elemental Sulfur Duraphite 12	0.25 #/M 3.2 oz./M
Trt # 4a	Civitas One	8.5 oz./M
Trt # 4b (in 4-wk rotation)	Elemental Sulfur Duraphite 12	0.25 #/M 3.2 oz./M
Trt # 5	0.50 # FeSO4/M Duraphite 12	0.5 #/M 3.2 oz./M
Trt # 6	1.0 # FeSO4/M Duraphite 12	1.0 #/M 3.2 oz./M
Trt # 7	Elemental Sulfur	0.25 #/M
Trt # 8	Duraphite 12	3.2 oz./M
Trt # 9	Fungicide Control	Every 4 wks
Trt # 10	Not Treated Control	



Formal Field Tour – 10:00 to 11:00

Stop 4: Suppressing Annual Bluegrass with Irrigation Regimes.
Alyssa Cain

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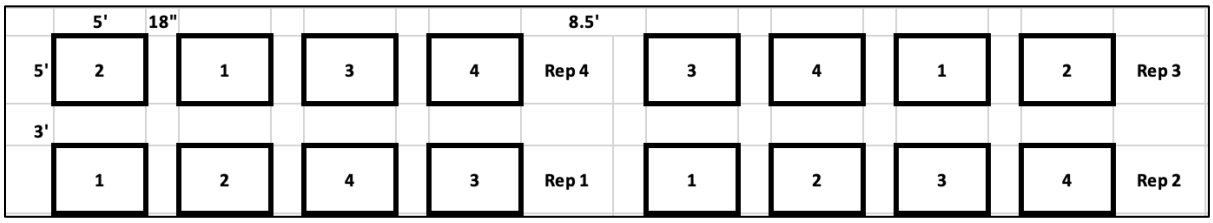
Initiated: 07-08-19

South →



Treatment 1: Watering 1x per week at 45% ET rate

Treatment 2: Watering 1x per week at 80% ET rate

Treatment 3: Watering 4x per week at 45% ET rate

Treatment 4: Watering 4x per week at 80% ET rate

Sample Irrigation Calculations:

ET Rates	
1-Jul	0.15
2-Jul	0.11
3-Jul	0.18
4-Jul	0.24
5-Jul	0.18
6-Jul	0.13
7-Jul	0.22
Total	1.21

	Weekly Amts		4x Weekly Amts	
	45% ET	80% ET	45% ET	80% ET
ET inches	0.5445	0.968	0.136125	0.242
Mins irr.	21.78	38.72	5.445	9.68

Stop 5: National Turfgrass Evaluation Project Tall Fescue.
Alec Kowalewski

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2018 - 2022 NTEP Tall Fescue Trial

Oregon State University

Planted: 10-03-18 **South -->**

	61	51	128	58	117	57	30	22	124	12	87	130	68	44	6	54	125	
	13	15	26	x	19	11	129	66	78	25	x	20	46	84	40	72	106	
	85	121	41	109	23	2	70	105	47	107	76	8	64	45	29	67	56	
	94	114	100	80	126	3	93	120	50	38	59	82	17	101	71	99	113	Rep 3
	116	90	86	73	33	49	131	31	81	62	43	10	119	110	102	122	16	
	96	53	55	111	34	79	112	52	97	4	42	123	1	9	132	35	74	
	77	69	63	75	28	108	7	115	48	27	83	88	103	118	60	127	92	
	32	89	95	x	104	24	18	5	21	91	x	39	36	98	37	65	14	
	x	x	132	131	130	129	128	127	126	125	124	123	122	121	120	119	118	
	101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	
	100	99	98	97	96	95	94	93	92	91	90	89	88	87	86	85	84	
	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	Rep 2
	66	65	64	63	62	61	60	59	58	57	56	55	54	53	52	51	50	
	35	36	37	x	38	39	40	41	42	43	44	x	45	46	47	48	49	
	34	33	32	31	30	29	28	27	26	25	24	23	22	21	20	19	18	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	
	x	x	3	44	109	131	48	50	122	49	77	106	70	72	115	75	104	
	110	117	95	7	71	25	69	111	119	78	103	61	26	43	18	85	64	
	84	12	114	116	24	5	8	34	65	14	101	68	132	62	74	4	92	
	45	125	90	x	38	58	11	126	53	56	96	x	10	88	86	63	55	Rep 1
	39	99	15	66	80	23	31	6	1	102	27	107	16	81	105	59	129	
	57	32	37	21	83	98	82	73	112	30	108	52	127	9	113	13	94	
	121	51	91	28	76	54	35	67	93	17	2	19	60	100	89	36	124	
	33	20	87	41	46	118	40	128	97	79	42	29	22	47	120	130	123	

Formal Field Tour – 10:00 to 11:00

National Turfgrass Evaluation Project Tall Fescue Continued…

ENTRY	NAME	SPONSOR	ENTRY	NAME	SPONSOR	ENTRY	NAME	SPONSOR
*1	Naturally Green	Carlton Seed Co.	45	PST-5MINK	Pure Seed Testing	89	ZRC1	Z Seeds
*2	Paramount	Standard	*46	Moondance	Integrated Seed Growers	90	PPG-TF-231	Peak Plant Genetics LLC
3	DLFPS-321/3693	DLF Pickseed USA	47	PST-5SQB	Pure Seed Testing	91	PPG-TF-306	Peak Plant Genetics LLC
4	DLFPS-321/3694	DLF Pickseed USA	48	PST-5DZM	Pure Seed Testing	92	PPG-TF-318	Peak Plant Genetics LLC
5	DLFPS-321/3695	DLF Pickseed USA	49	PST-5GLBS	Pure Seed Testing	*93	Bullseye	Standard
6	TMT1	DLF Pickseed USA	50	PST-5DART	Pure Seed (Rose Agri)	*94	Firehawk SLT	Burlingham Seeds
7	ATF2116	Pennington Seed	51	PST-5DC24	Pure Seed (Rose Agri)	*95	Hemi	Standard
8	NT-3	Pennington Seed	*52	Tango	Site One Land. Supply	*96	Bullseye LTZ	Burlingham Seeds
9	RS1	DLF Pickseed USA	53	3N1	Site One Land. Supply	*97	Turbo SS	Burlingham Seeds
10	5LSS	Pure Seed Testing	*54	Bandit	Site One Land. Supply	*98	Dragster	Burlingham Seeds
11	BGR-TF3	Berger International	*55	Copious TF	Site One Land. Supply	99	GO-RH20	Grassland Oregon Seed
12	ATF 1768	Pennington Seed	*56	Padre 2	Site One Land. Supply	*100	Burmingham	Grassland Oregon Seed
13	DLFPS-TF/3550	DLF Pickseed USA	*57	Bravo 2	Site One Land. Supply	101	GO-AOMK	Grassland Oregon Seed
14	DLFPS-TF/3552	DLF Pickseed USA	58	NAI-FQZ-17	Lakeside Ag. Ventures	102	NAI-3N2	Columbia Seeds
15	DLFPS-TF/3553	DLF Pickseed USA	59	DLFPS-321/3705	DLF Pickseed USA	103	NAI-ROS4	Landmark Turf & Native Seed
16	DLFPS-321/3679	DLF Pickseed USA	60	DLFPS-321/3706	DLF Pickseed USA	104	NAI-TUE	Columbia Seeds
17	LBF	Tualatin Valley Seeds	61	DLFPS-321/3707	DLF Pickseed USA	105	NAI-ST5	Landmark Turf & Native Seed
18	TD2	Pennington Seed	62	DLFPS-321/3708	DLF Pickseed USA	106	SE5302	Smith Seed Services, LLC
19	DLFPS-321/3696	DLF Pickseed USA	63	BAR-TF-134	Barenbrug Research	107	SE5STAR	Smith Seed Services, LLC
20	DLFPS-321/3699	DLF Pickseed USA	64	BAR-FA8230	Barenbrug Research	108	SE5CR1	Smith Seed Services, LLC
*21	Grande 3	DLF Pickseed USA	65	AH1	Landmark Turf & Native Seed	109	SETF104	Smith Seed Services, LLC
*22	Fayette	Standard	66	PPG-TF-249	Landmark Turf & Native Seed	110	SETFM2	Smith Seed Services, LLC
23	JT-517	Jacklin Seed by Simplot	67	PPG-TF-262	Landmark Turf & Native Seed	111	SETFM3	Smith Seed Services, LLC
24	JS-DTT	Jacklin Seed by Simplot	68	PPG-TF-267	Landmark Turf & Native Seed	112	3B2	ProSeeds Marketing
25	RDC	Rutgers University	69	AH2	Brett Young Seeds	113	RAD--TF105	Radix Research
26	BAR 9FE MAS	Barenbrug Research	70	K18-RS6	The Scotts Mircle Gro Co	114	RAD-TF0.0	Radix Research
27	BAR FA 8228	Barenbrug Research	71	K18-WB1	The Scotts Mircle Gro Co	115	RHL2	Semillas Fito
28	COL-TF-148	Columbia Seeds	72	RH1	ProSeeds Marketing Inc.	*116	Raptor III	Standard
29	LTP-TF-122	Lebanon Seaboard Corp.	73	RH3	ProSeeds Marketing Inc.	117	RHF	Semillas Dalmau
30	LTP-TF-111	Lebanon Seaboard Corp.	74	JT 233	Jacklin Seed by Simplot	118	PPG-TF-313	Columbia Seeds
31	K18-ROE	Scotts Co.	75	JT 268	Jacklin Seed by Simplot	119	PPG-TF-320	Peak Plant Genetics
32	K18-NSE	Scotts Co.	76	PPG-TF 244	Integra Turf, Inc.	120	PPG-TF-323	Columbia Seeds
33	BY-TF-169	Brett Young	77	PPG-TF 305	Integra Turf, Inc.	121	PPG-TF-338	Columbia Seeds
34	DLFPS-321/3701	DLF Pickseed USA	78	PPG-TF 316	Lewis Seed Co.	*122	Estrena	Semillas Fito
35	DLFPS-321/3702	DLF Pickseed USA	79	RC4	Semillas Fito	*123	AST8118LM	Allied Seed LLC
36	DLFPS-321/3703	DLF Pickseed USA	80	PPG-TF-257	Vista Seed Partners	*124	AST8218LM	Allied Seed LLC
37	PST-5TRN	Pure Seed Testing	81	PPG-TF-238	Mountain View Seeds	125	A-TF31	Allied Seed LLC
38	PST-5GQ	Pure Seed Testing	82	PPG-TF-254	Mountain View Seeds	*126	Palomar	Oregro Seed
39	PST-5MCMO	Pure Seed Testing	83	PPG-TF-308	Mountain View Seeds	*127	Escalade	Oregro Seed
*40	ProGold	Integrated Seed Growers	84	PPG-TF-255	Mountain View Seeds	*128	OG-WALK	Oregro Seed
41	PST-5E6	Pure Seed Testing	85	PPG-TF-312	Mountain View Seeds	129	TF445	Smith Seed Services
42	PST-5THM	Pure Seed Testing	86	PPG-TF-315	Mountain View Seeds	130	TF456	Smith Seed Services
43	PST-5BYOB	Brett Young	87	PPG-TF-336	Mountain View Seeds	131	FC15-01P	Criadero El Concerro SA
*44	Lifeguard	Pure Seed (Rose Agri)	88	PPG-TF-337	Mountain View Seeds	*132	Kentucky-31	Standard

*Commercially Available in the USA in 2018

Open House: 11:00 to 11:30 am

Comparison of DryJect Fill Material Demonstration
Brian McDonald

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North -->
DryJect treatments
Sand and Profile incorporated on June 12, 2019
Sand and humate incorporated on June 12, 2019
Sand and Biochar incorporated on June 12, 2019
Sand incorporated on June 12, 2019
Sand and Profile incorporated on June 12, 2019
DryJect treatments to be applied on field day, Aug 29, 2019

Open House: 11:00 to 11:30 am

Effects of Aerification and Fertilization Timing on Drought Resistance in Lawns

Brian McDonald

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Initiated:
March 22, 2019

Water was turned off:
July 8, 2019

Aerifier:
Jonn Deere Aerocore 800, setting 3

Fertilizer Source:
Nutralene 40-0-0

Fertilizer Rate:
1 lbs N/M/application

Trt #	Aerification Timing	Fert Timing
1	March	Mar, Apr, May, Jun
2	March	Apr, May, Jun
3	March	May, Jun
4	March	Jun
5	April	Mar, Apr, May, Jun
6	April	Apr, May, Jun
7	April	May, Jun
8	April	Jun
9	May	Mar, Apr, May, Jun
10	May	Apr, May, Jun
11	May	May, Jun
12	May	Jun
13	Jun	Mar, Apr, May, Jun
14	Jun	Apr, May, Jun
15	Jun	May, Jun
16	Jun	Jun

South →

Fertilization Timing	Aerification Timing			
	April	May	Mar	Jun
May and June ->	7	11	3	15
Mar, Apr, May and Jun ->	5	9	1	13
Apr, May and Jun ->	6	10	2	14
June ->	8	12	4	16

Fertilization Timing	Aerification Timing			
	May	Jun	Apr	Mar
Mar, Apr, May and Jun ->	9	13	5	1
June ->	12	16	8	4
May and June ->	11	15	7	3
Apr, May and Jun ->	10	14	6	2

Fertilization Timing	Aerification Timing			
	June	Mar	May	Apr
May and June ->	14	2	10	6
Apr, May and Jun ->	15	3	11	7
June ->	16	4	12	8
Mar, Apr, May and Jun ->	13	1	9	5

Open House: 11:00 to 11:30 am

Herbicide Demo Trial – Removing Perennial Ryegrass from Annual Bluegrass
Brian McDonald

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2019 Herbicide Demo Trial - Ryegrass Control

Oregon State University

Initiated:08/23/19

Plot size 4' wide by 5' long

East -->

1					
2					
3					
4					
5					
	3				
	4				
	1				
	5				
	2				

Large putting green

Trt #	Treatments	Rate (fl oz/Acre)
1	Untreated	na
2	Fusilade II + Induce (0.5 % v/v)	8.0
3	Manuscript + Adigor (0.5 % v/v)	9.6
4	Manuscript + Adigor (0.5 % v/v)	19.2
5	Manuscript + Adigor (0.5 % v/v)	38.4

Open House: 11:00 to 11:30 am

New Broadleaf Herbicides
Alyssa Cain

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Field Day Demo Trial
Initiated: 08-01-19

	East -->			Trt	Product	Rate	
Rep 4	7	2	4	1	Untreated	na	
	2	5	3	2	GameOn	3.0	pts per acre
	4	3	1	3	GameOn	3.5	pts per acre
	5	1	6	4	GameOn	4.0	pts per acre
	3	6	7	5	Relzar	0.72	wt. oz. per acre
	1	4	2	6	Triplet	4.0	pts per acre
	6	7	5	7	SpeedZone	4.0	pts per acre
Rep 3	1	5	7				
	3	6	4				
	5	4	2				
	6	2	1				
	4	7	3				
	7	1	5				
	2	3	6				
Rep 2	5	6	1				
	7	1	3				
	2	3	5				
	4	5	7				
	6	7	2				
	1	2	4				
	3	4	6				
Rep 1	6	3	2				
	4	1	7				
	2	7	3				
	7	6	5				
	3	5	1				
	5	2	4				
	1	4	6				

2019 OSU Field Day - Turf Tolerance Demo Trial
Initiated: 08-22-19
Plot size = 4' x 8'

West -->							Trt	Product	Rate/Acre	
7	6	5	4	3	2	1	1	Untreated	na	
							2	GameOn	4.0	pts
							3	GameOn	8.0	pts
							4	Relzar	1.44	wt. oz.
							5	Triplet	8.0	pts
							6	SpeedZone	10.0	pts

Open House: 11:00 to 11:30 am

National Turfgrass Evaluation Project Perennial Ryegrass.
Alec Kowalewski

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2016 NTEP Perennial Ryegrass Trial

Date Seeded: 09/30/16 Seeding rate: 200 grams per 60 sq ft **S ---->**

Plot area 68' X 105' 7.3 lbs/1000 7,140 sq ft

4'

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
REP 3	38	19	73	45	110	55	54	64	114	27	9	91	X	X	X	X	X
	43	3	106	17	37	83	59	46	52	95	47	25	81	112	69	14	41
	24	71	82	12	58	101	60	53	100	2	16	20	72	103	113	65	109
	89	29	13	78	111	102	49	75	1	23	39	32	90	105	42	85	15
	48	107	21	7	99	96	57	62	51	35	74	98	28	88	26	31	56
	104	10	18	61	87	33	80	34	79	4	30	94	6	67	93	40	36
	11	44	84	76	63	5	22	70	77	8	92	86	108	68	66	97	50
REP 2	103	104	105	106	107	108	109	110	111	112	113	114	X	X	X	X	X
	102	101	100	99	98	97	96	95	94	93	92	91	90	89	88	87	86
	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85
	68	67	66	65	64	63	62	61	60	59	58	57	56	55	54	53	52
	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51
	34	33	32	31	30	29	28	27	26	25	24	23	22	21	20	19	18
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
REP 1	67	25	104	110	94	107	112	55	40	97	57	36	X	X	X	X	X
	93	100	109	99	92	65	5	31	71	85	59	88	106	79	51	73	21
	4	39	61	27	89	90	102	111	46	34	78	6	35	43	58	38	23
	28	52	41	2	45	20	8	87	95	76	84	103	30	12	50	17	74
	108	64	9	77	54	82	91	83	26	37	48	15	56	96	7	42	13
	62	86	11	53	29	68	19	24	33	18	114	69	1	14	22	72	81
	10	80	16	49	113	63	70	66	47	105	98	3	44	101	75	60	32

Open House: 11:00 to 11:30 am

National Turfgrass Evaluation Project Perennial Ryegrass Continued…

Plot Number	Entry Name	Sponsor	Plot Number	Entry Name	Sponsor
1	021	The Scotts Miracle-Gro Co	58	PPG-PR 329	Mountain View Seeds
2	BSP-17	Bailey Seed & Grain LLC	59	PPG-PR 331	Turf Merchants, Inc
3	BWH	Bailey Seed & Grain LLC	60	Derby Xtreme	Standard
4	BSP-25	Bailey Seed & Grain LLC	61	PPG-PR 339	Mountain View Seeds
*5	Savant	Ledeboer Seed LLC	62	PPG-PR 343	Mountain View Seeds
6	LPB-SD-105	Ledeboer Seed LLC	63	PPG-PR 360	Integra Turf
*7	Saguaro	Ledeboer Seed LLC	64	PPG-PR 367	Mountain View Seeds
8	LPB-SD-104	Ledeboer Seed LLC	65	PPG-PR 370	Lewis Seed Company
*9	Mensa	Ledeboer Seed LLC	66	PPG-PR 371	Turf Merchants, Inc.
10	LPB-SD-101	Ledeboer Seed LLC	67	PPG-PR 372	Columbia Seeds
11	LPB-SD-102	Ledeboer Seed LLC	68	PPG-PR 385	Mountain View Seeds
12	LPB-SD-103	Ledeboer Seed LLC	69	PPG-PR 419	Mountain View Seeds
13	DLFPS-236/3540	DLF Pickseed USA, Inc	70	PPG-PR 420	Peak Plant Genetics, LLC.
14	DLFPS-236/3542	DLF Pickseed USA, Inc	71	PPG-PR 421	Proseeds Marketing
15	DLFPS-236/3544	DLF Pickseed USA, Inc	72	PPG-PR 422	Columbia Seeds
*16	Intense	Landmark Turf & Native Seed	73	PPG-PR 423	Peak Plant Genetics, LLC
*17	Xcelerator	Landmark Turf & Native Seed	74	PPG-PR 424	Peak Plant Genetics, LLC
18	UF3	Landmark Turf & Native Seed	*75	Karma	Standard
19	JR-123	Jacklin Seed by Simplot	*76	SR 4650	Standard
20	JR-747	Jacklin Seed by Simplot	77	DLFPS-236/3538	DLF Pickseed USA, Inc.
21	JR-888	Jacklin Seed by Simplot	*78	Grand Slam GLD	Standard
22	DLFPS-236/3541	DLF Pickseed USA, Inc	79	LTP-FCB	Lebanon Seaboard Corp.
23	DLFPS-236/3543	DLF Pickseed USA, Inc	80	BAR LP 6117	Barenbrug USA
24	DLFPS-236/3545	DLF Pickseed USA, Inc	81	BAR LP 6131	Barenbrug USA
*25	Evolve	SiteOne Landscape Supply	82	BAR LP 6159	Barenbrug USA
26	MRSL-PR16	SiteOne Landscape Supply	83	BAR LP 6233	Barenbrug USA
27	PL2	SiteOne Landscape Supply	84	PST-2FOXY	Pure-Seed Testing, Inc.
28	MRSL-PR15	SiteOne Landscape Supply	85	PST-2CRP	Pure-Seed Testing, Inc.
29	SNX	Smith Seed Services	86	PST-2EGAD	Pure-Seed Testing, Inc.
*30	Signet	Smith Seed Services	87	PST-2FIND	Pure-Seed Testing, Inc.
31	02BS4	Smith Seed Services	88	PST-2GTD	Pure-Seed Testing, Inc.
32	CS-6	Columbia Seeds	89	PST-2BDT	Grassland Oregon
33	DLFPS-236/3556	DLF Pickseed USA, Inc	90	PST-2MAY	Pure-Seed Testing, Inc.
*34	ASP0116EXT	Allied Seed LLC	91	PST-2GAL	Pure-Seed Testing, Inc.
35	A-PR15	Allied Seed LLC	92	PST-2PDA	Pure-Seed Testing, Inc.
36	A-4G	Allied Seed LLC	93	PST-2A2	Pure-Seed Testing, Inc.
37	A-6D	Allied Seed LLC	94	DLFPS-236/3553	DLF Pickseed USA, Inc.
38	NP-3	Pennington Seed	95	DLFPS-236/3554	DLF Pickseed USA, Inc.
39	NP-2	Pennington Seed	96	PR-5-16	Columbia Seeds
40	APR2616	Pennington Seed	97	BAR LP 6158	Barenbrug USA
41	GO-141	Grassland Oregon	98	BAR LP 6162	Barenbrug USA
42	GO-142	Grassland Oregon	99	BAR LP 6164	Barenbrug USA
43	GO-143	Grassland Oregon	100	BAR LP 6165	Barenbrug USA
44	APR2612	ProSeeds Marketing	*101	Overdrive 5G	Burlingham Seeds, LLC.
45	APR3060	Pennington Seed	102	02BS1	ProSeeds Mktg
46	AMP-R1	AMPAC Seed Co.	103	CPN	Columbia Seeds
47	DLFPS-236/3546	DLF Pickseed USA, Inc	104	JR-197	Jacklin Simplot
48	DLFPS-236/3547	DLF Pickseed USA, Inc	105	DLFPS-238/3014	DLF Pickseed USA, Inc.
49	DLFPS-236/3548	DLF Pickseed USA, Inc	106	RAD-PR 103	Lewis Seed Company
50	PR-6-15	Columbia Seeds	107	RAD-PR 112	Bailey Seed
51	DLFPS-236/3550	DLF Pickseed USA, Inc	*108	UMPQUA	Vista Seed Partners LLC
52	DLFPS-236/3552	DLF Pickseed USA, Inc	*109	Seabiscuit	Lebanon Seaboard Corp.
53	023	Brett Young Seeds	*110	Man O'War	Lebanon Seaboard Corp.
54	FP2	Turf Merchants, Inc.	*111	Pharaoh	Lebanon Seaboard Corp.
55	02BS2	Brett Young Seeds	*112	Allstar III	Standard
56	RRT	The Scotts Miracle-Gro Co	*113	Brightstar SLT	Standard
57	PPG-PR 241	Mountain View Seeds	*114	Linn	Standard

*COMMERCIALLY AVAILABLE IN THE USA IN 2016

Open House: 11:00 to 11:30 am

Evaluation of Seeding Dates on Fine Fescue Establishment
Emily Braithwaite

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Date: March-15 2019 through August 2020

Trt	Seeding Date
1	15-Mar-19
2	15-Apr-19
3	15-May-19
4	15-Jun-19
5	15-Jul-19
6	15-Aug-19
7	15-Sep-19
8	15-Oct-19
9	15-Nov-19

East -->

Rep 1	4	9	7	1	8	2	3	6	5
Rep 2	1	2	3	4	5	6	7	8	9
Rep 3	8	6	1	4	3	5	9	7	2
Rep 4	5	8	2	9	1	7	3	4	6

Open House: 11:00 to 11:30 am

Quantifying the effects of the surface pH of an annual bluegrass putting green on the suppression of Microdochium patch.
Clint Mattox

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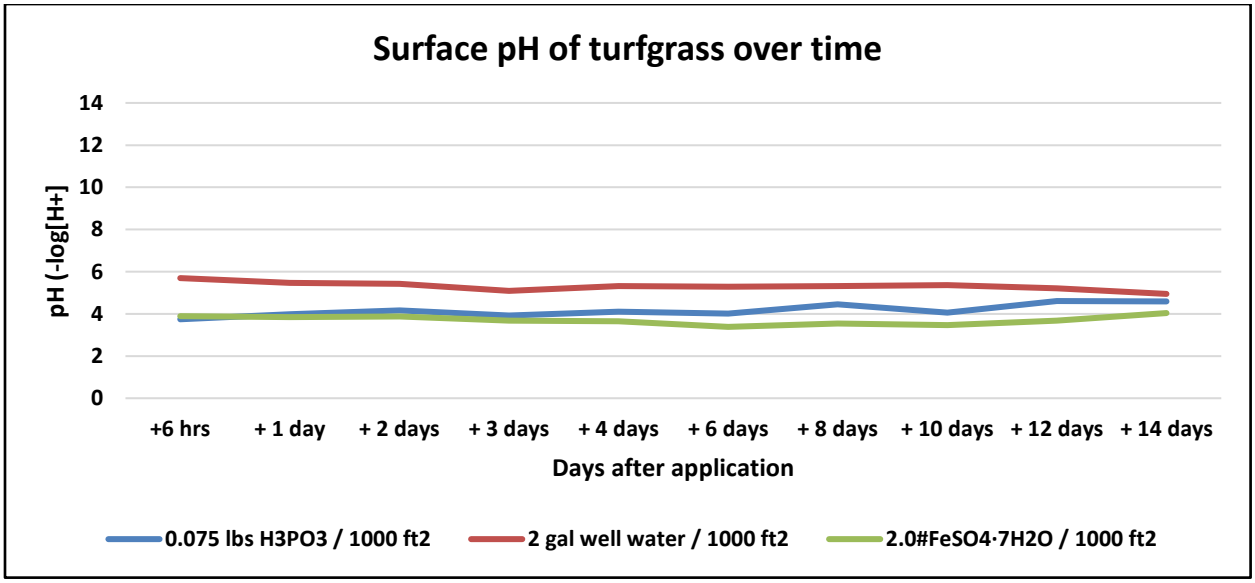
Background:

From 2016 to 2018, a field trial demonstrated that Microdochium patch can be suppressed by applications of iron sulfate and phosphorous acid. The mechanisms of these applications on the suppression of disease are still unknown, although it was noted that large differences exist in the pH of the spray solutions compared to the water control used in these trials with some spray solutions having a pH of less than 3.0. Preliminary laboratory studies suggest that *Microdochium nivale* growth decreases as the pH of growth media decreases below a pH of 5.0, therefore if could be hypothesized that the fertility products are lowering the pH of the putting green surface enough to impede the growth of *Microdochium nivale* and thus suppressing disease.

Objective: To quantify the effects of a change of the surface pH of an annual bluegrass putting green on the suppression of Microdochium patch.

Preliminary Results:

The initial phases of this experiment are revealing that iron sulfate heptahydrate and phosphorous acid treatments are affecting the surface pH of the turfgrass surface. A first-look at the effects of an acidifying agent on the symptom expression of Microdochium patch on annual bluegrass growing in a growth-chamber representing winter conditions (35°F to 51°F with a 10 hour day-length) will be presented during the field day.



……Exhibitors……

Organization	Name	Email
Control Solutions Inc.	Ian Rodriquez	ian.rodriguez@controlsolutionsinc.com
	Michael Daugherty	michael.daugherty@controlsolutionsinc.com
Oregon Turf Foundation	Sally Cheyne	otf@oregonturfgrassfoundation.org
RainBird	Mark Willcut	MWillcut@rainbird.com
Marion Ag	Jeff Freeman	Jeff Freeman <JeffF@marionag.com>
Petro Canada	Gregory Fernald	gregory.fernald@petrocanadalsp.com
RMT Equipment	Rich Schwabauer	rich@rmtequipment.com
Oregon Sports Turf Managers Association	Brian Daviscourt	oregonstma@gmail.com
	Damon Richardson	Damon@pacificsportsturf.com
Target Specialty Products	Gary Willis	gary.willis@target-specialty.com
	Tony Lasher	tony.lasher@target-specialty.com
Lane Mountain Company	Dave McNeil	dhmcneil@aol.com
DryJect	Jerry Fleming	jerry@dryjectwest.com

Golf Outing Sponsor
AMVAC Environmental Products
Oregon Sports Turf Mangers Association
Oregon Turf Foundation
Oregon Golf Course Superintendents Association

2018/2019 OSU Turf Program Research Supporters

Agricultural Research Foundation	Oregon Golf Course Superintendents Association
AMVAC Environmental Products	Oregon Seed Association
Andersons Inc.	Oregon Seed Council Research Committee
Aquatrols	Oregon Sports Turf Managers Association
Athletic Field Design	Oregon Turf &Tree Farms
Bandon Dunes Resort	Oregon Turf Foundation
Barenbrug USA	Oregonians for Food and Shelter
BASF	OSTMA
Bayer Crop Science	OSU Department of Athletics
Canadian Turfgrass Research Foundation	PBI Gordon
Columbia Edgewater Country Club	Petro Canada Lubricants Inc.
Columbia Seeds, Inc.	Pure-Seed Testing
Control Solutions Inc	Rainbird Company
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CPS Professional Products	Rocky Mountain Turf Equipment
Dakota	Royal Oaks Country Club
DLF International	Seed Research of Oregon
Corteva Agro Sciences and Dow AgroSciences	SePro Corporation
DryJect	Simplot
Engage Ago	SiteOne Landscape Supply
Fine Fescue Commission	Smith Seed Services
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FMC Corporation	Sunriver Resort
GenNext	Syngenta Crop Protection, Inc.
Golf Course Superintendents Association	Tall Fescue Commission
Grain Millers	Target Specialty Products
Grigg Brothers	Tom Cook
Helena Products Group	Toro
Illahe Hills Country Club	TruTurf
Intelligro	Trysting Tree Golf Club
Jacobsen	Turf Fuel
Koch Agronomic Services LLC	Turf Merchants, Inc.
Lane Mountain Company	Turfgrass Water Conservation Alliance
Marion AG Services	USDA-SCRI
Melgreen/Olmix NA, Inc.	United States Golf Association
Mountain View Seeds	United States Golf Association
National Turfgrass Evaluation Program	USDA-NIFA
Nike	Western Canada Turf Association
Northwest Turf Association	Western Equipment Distributors
NuFarm Americas Inc.	Wilbur-Ellis Company
Ontario Turfgrass Research Foundation	Winfield, Land O'Lakes
Oregon Golf Association	WISErg Corporation

2019 Scholarships and Awards

Burlingham Trust	OSU Turf Friends and Alumni
Mark Willcut and Seann Hammon	OSU Turf Friends and Alumni
Alyssa Cain	USGA Competitive Internship
Spencer Osburn	Jason Oliver Memorial Scholarship
Grant Roth	Whitworth Scholarship
Jeremy Lee	Martin Scholarship
Shane Shaffer	OGCSA Scholarship
Alyssa Cain	OGCSA Scholarship
Grant Roth	Tom Cook Legacy Scholarship
Shane Shaffer	Bruce Faddis Memorial Scholarship

2017 and 2018 Jason Oliver Memorial Golf Tournament Champions

Kurt Wright
Tyler Gabriel
Mike Turley
Corey Beelke