

Tenacity for Bentgrass Removal

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NTA 62nd Annual Conference
October 14, 2008

Overview

- Why remove bentgrass?
- Long road...
- Are all bentgrasses created equal?
- Program for bentgrass removal
- WSU Research Resources

Why Remove Bentgrass?



Why Remove Bentgrass?



Why Remove Bentgrass?



Why Remove Bentgrass?



Why Remove Bentgrass?



The Long Road- Overview

- 2003 – High rates, 4 wk intervals
- 2004 – Multiple applications, 4 wk intervals
- 2005 – Multiple applications, 2 wk intervals
- 2006 – Incorporate overseeding following applications
 - Circling Raven Golf Club & WWCC Turf Lab
- 2007 & 2008 – Develop program with overseeding at TARC

The Long Road – Prairie Falls

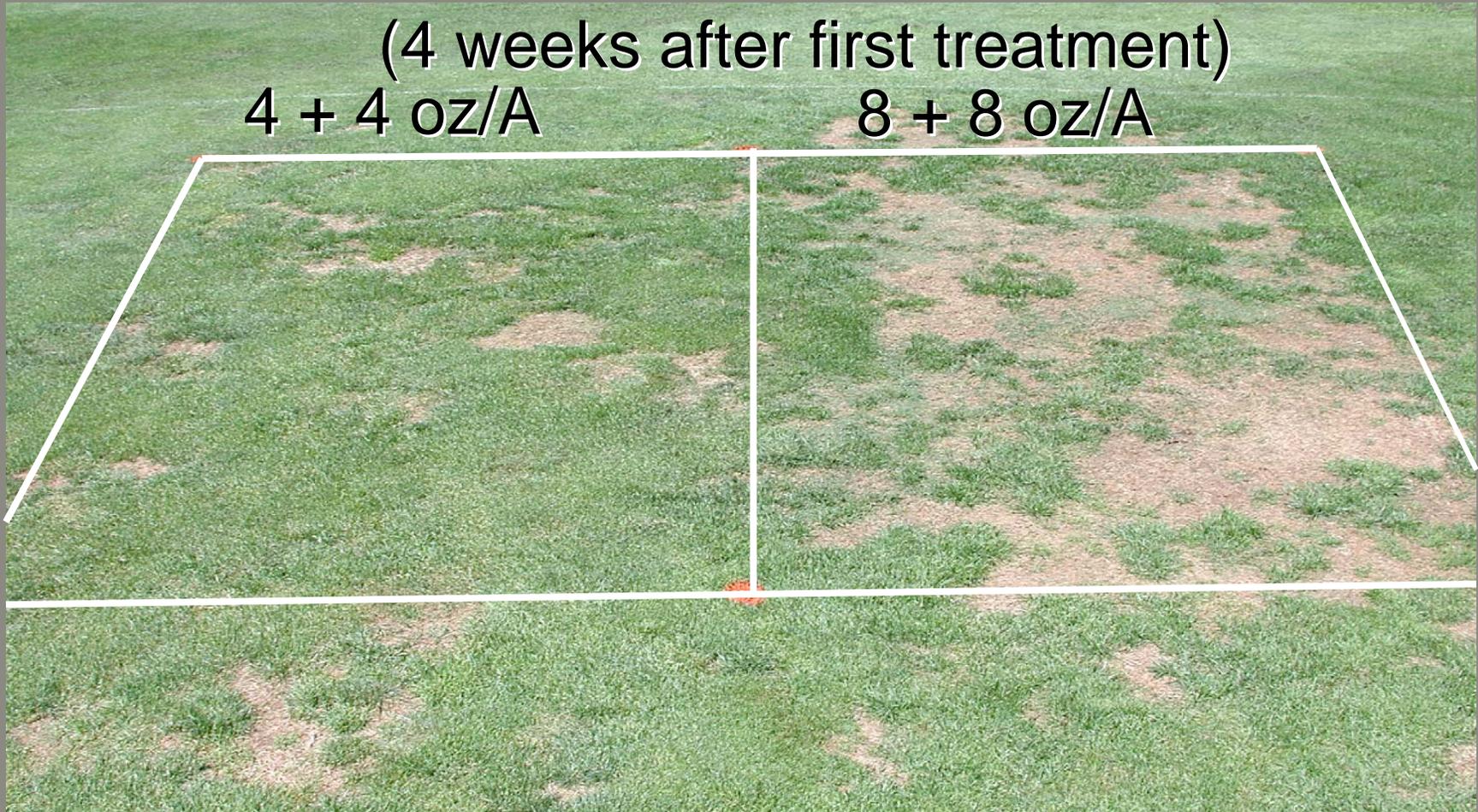


The Long Road – Prairie Falls

(4 weeks after first treatment)

4 + 4 oz/A

8 + 8 oz/A



The Long Road – Circling Raven



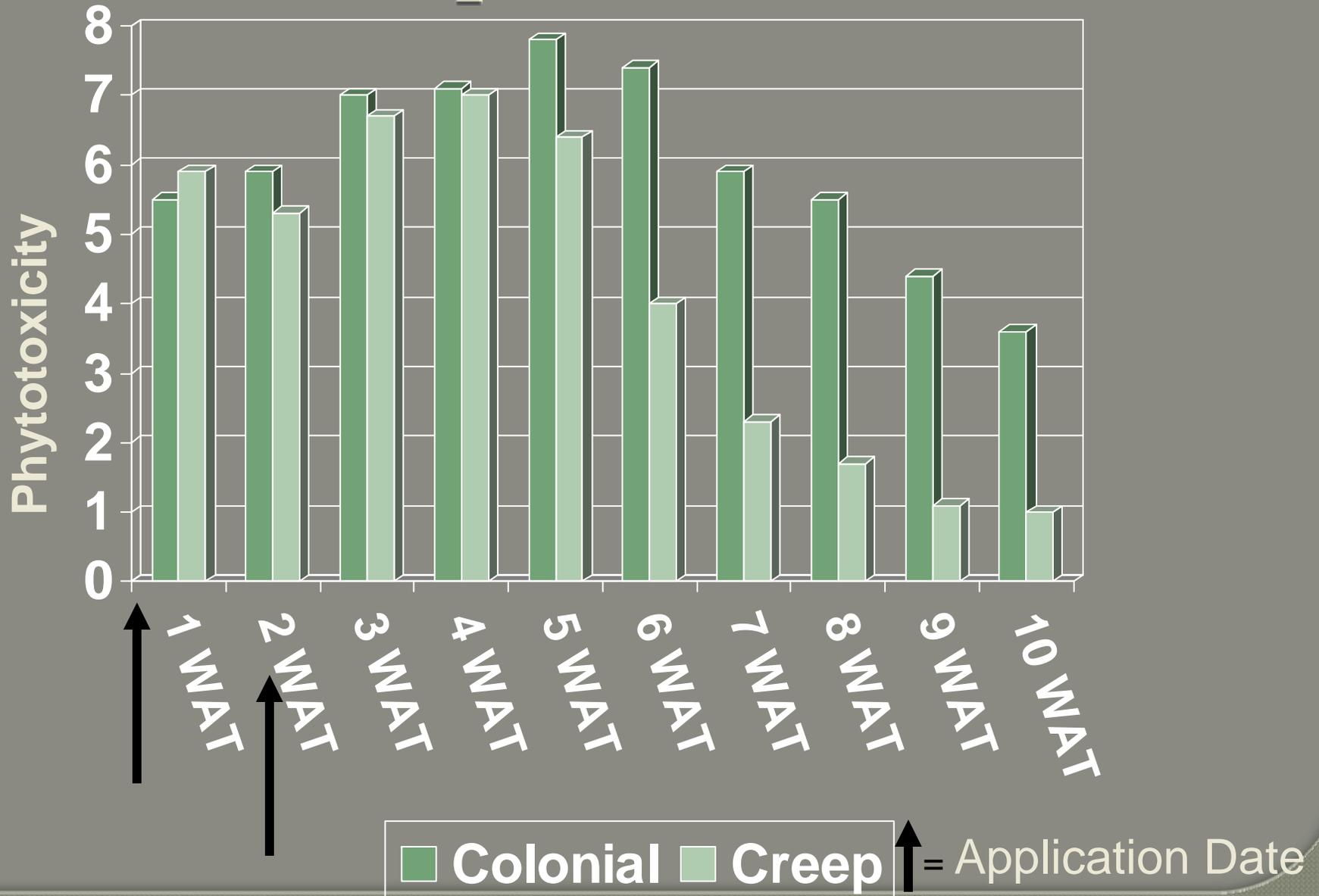
Are all Bentrgrasses Created Equal?

- Colonial or creeping more susceptible?
- Which cultivar most susceptible?
- NTEP Study; 2 species; 28 cultivars
- 8 oz/A Tenacity applied at 2-wk interval
(wk 0 & 2)

Plot Overview



Species Differences



Species Susceptibility

- Colonial bentgrass mean = 6.0
- Creeping bentgrass mean = 4.2

Colonial Bentgrass Cultivar Differences

- Bardot = 5.1
- EWTR = 5.9
- Tiger II = 6.1
- SR 7150 = 6.5
- PST-9NBC = 6.5

Least Susceptible



Most Susceptible

Creeping Bentgrass Cultivar Differences

- Declaration = 3.3
- T-1 = 3.3
- Independence = 3.4
- Pennlinks II = 5.0
- Penneagle II = 5.2
- Seaside = 6.0

Least Susceptible



Most Susceptible

'T-1' Creeping Bentgrass Green

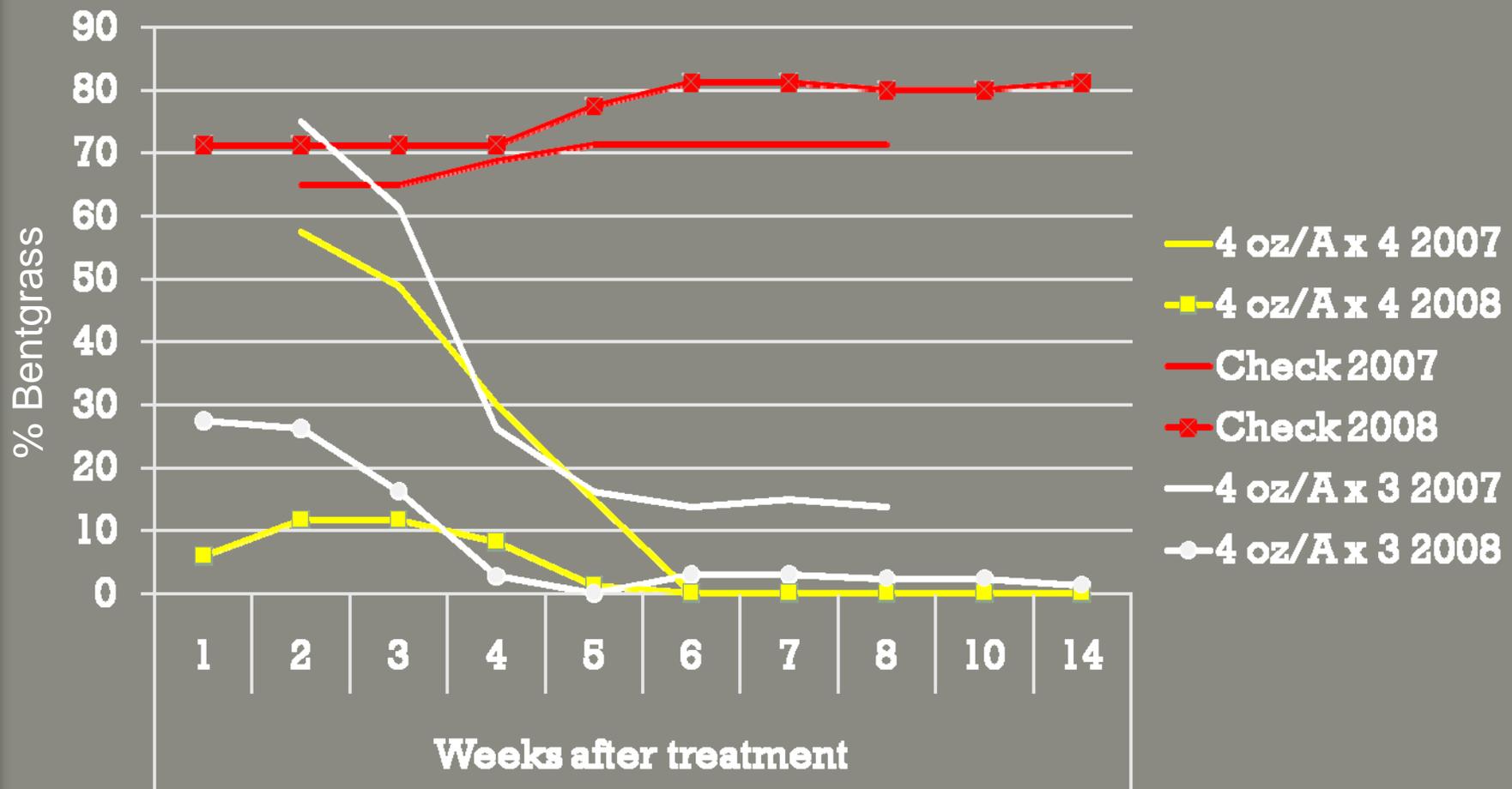


Program for Bentgrass Removal

- Tenacity 4 oz/A x 4 applications with overseed (year 1)
- Tenacity 4 oz/A x 4 applications (year 2+)
- Apply with NIS at 0.25% v/v
- Apply at 2 - 3 wk interval

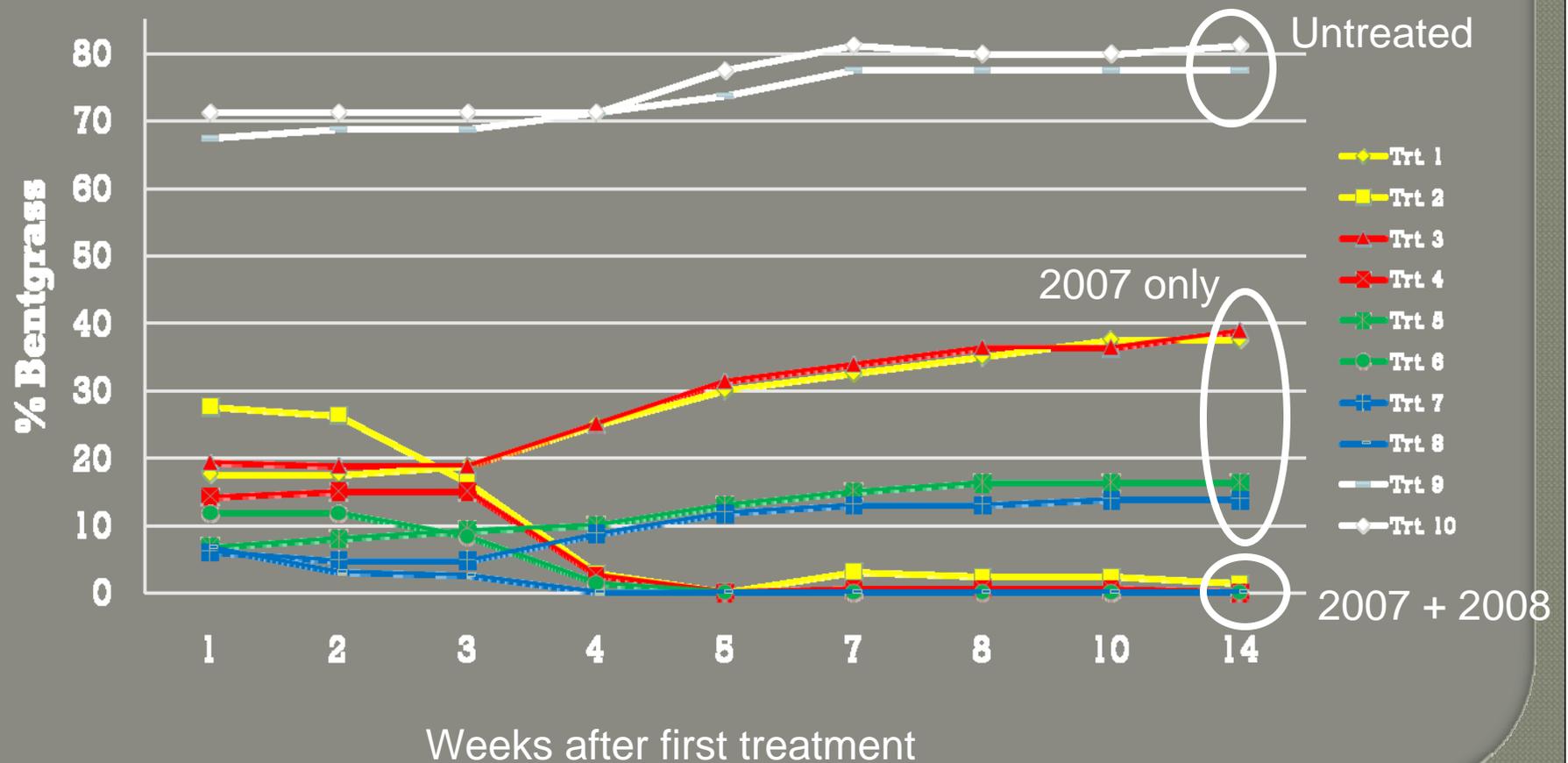
- Value added: Over 50 broadleaf and grass weeds on Tenacity label & safe to apply to KBG or PRG seeds, or seedlings

2007-2008 Comparison



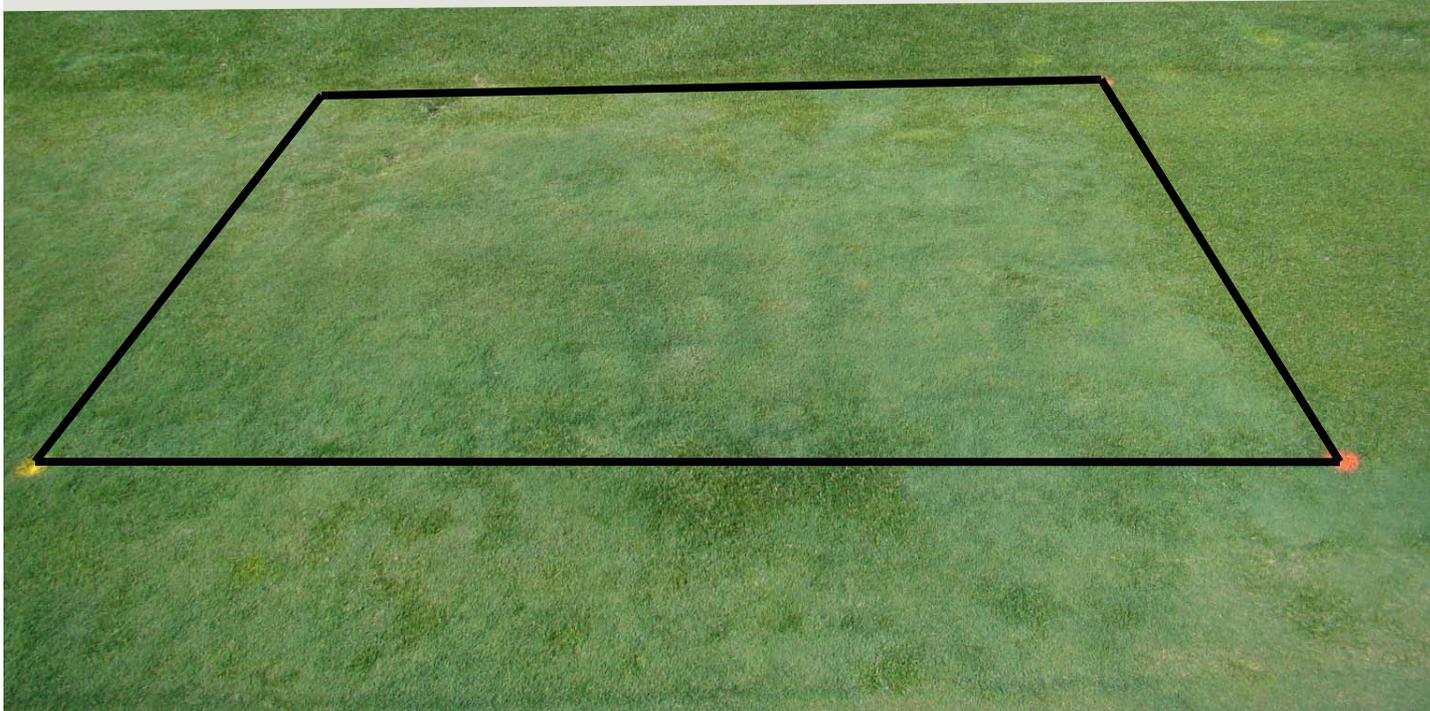
Bentgrass Removal Program

2008 Data – Tenacity effect on creeping bentgrass populations





Untreated



Overseeded
Only



4 oz/A x 3
2007 Only
2-0-3 wk



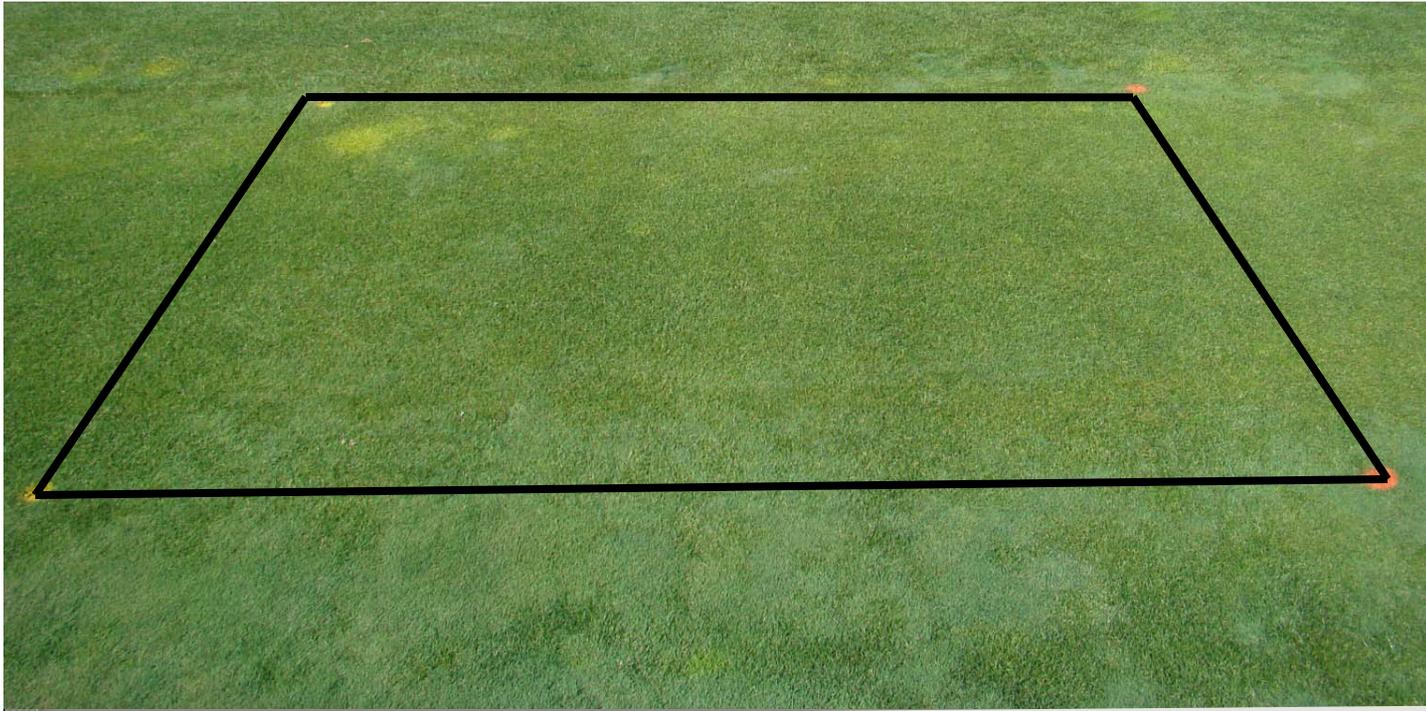
4 oz/A x 3
2007 + 2008
0-2-5 wk



5 oz/A x 3
2007 Only
2-0-3 wk



5 oz/A x 3
2007 + 2008
0-2-5 wk



4 oz/A x 4
2007 Only
2-0-3-5 wk



4 oz/A x 4
2007 + 2008
0-2-5-7 wk



4 oz/A x 4
2007 Only
4-2-0-3 wk



4 oz/A x4
2007 + 2008
0-2-4-7 wk

Summary

- Tenacity 4² 2²
- High infestation = Need to Seed
- Low infestation = Spray and Smile
- Bentgrass spp. and cv. differences

Other Considerations

- Not safe to apply on fineleaf fescue
- Current research on Fall applied Tenacity for annual bluegrass suppression at planting (overseeding)

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Preparing students...

who wish to specialize in golf course supervision, grounds maintenance, sod production, and similar recreation positions involving turfgrass management techniques and personnel relations.



Degrees offered:

- B.S. or minor in Crop Science (Turfgrass Management option)
- M.S. degree in Crop Science
- Ph.D. degree in Crop Science

WSU Turf Club would like to thank [TruGreen Lawn Care](#) for its generous sponsorship!

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Research



Turfgrass and Agronomy Research Center

A new turfgrass research facility in Pullman was completed in 2005. It includes a USGA experimental green, 15 turfgrass plots (80' x 80'), an office/shop, and a storage building. Charles Golob, Research Supervisor, manages the research facility.

[Research Facility Diagram](#)

[Map to the Turfgrass and Agronomy Research Center](#)

Current Research Emphasis

Current emphasis is on comparing different fungicide treatments on snow mold disease, evaluating different grass species for the National Turfgrass Evaluation Program (NTEP), evaluating mesotrione for weed control in cool-season grasses, the use of wetting agents to control localized dry spots on putting greens, and the development of Kentucky bluegrass for non-thermal seed production. In addition to these projects, information on older projects such as controlling leaf spot on golf fairways, *Poa annua* seedheads suppression on bentgrass/annual bluegrass putting greens, quantifying post-harvest emissions from bluegrass seed production field burning, rapid and non-destructive method for separating clippings from sand, correlation of field and controlled-environment studies of pink snow mold resistance of PNW greens-type *Poa annua*, regional climatic characterization of PNW greens-type *Poa annua*, and nitrogen leaching from a sand-based green can be found below.

Projects: (note these are pdf files)

■ Snow Mold Control

■ [Evaluation of Syngenta Fungicides for Control of Pink and Gray Snow Mold 2007-2008](#)

- [Evaluation of Bayer Fungicides for Control of Pink and Gray Snow Mold 2007-2008](#)
- [Evaluation of Bayer Fungicides for Control of Pink and Gray Snow Mold 2006-2007](#)
- [Evaluation of Cleary's Fungicides for Control of Pink and Gray Snow Mold 2006-2007](#)
- [Evaluation of LESCO's Fungicides for Control of Pink and Gray Snow Mold 2006-2007](#)
- [Evaluation of Syngenta Fungicides for Control of Pink and Gray Snow Mold 2006-2007](#)
- [Evaluation of LESCO's Fungicides for Control of Pink and Gray Snow Mold in Idaho, Montana and Washington 2004-2005](#)
- [Evaluation of Syngenta and Bayer Fungicides for Control of Pink and Gray Snow Mold 2004-2005](#)
- [Evaluation of Cleary's Fungicides for Control of Pink and Gray Snow Mold in Idaho, Montana and Washington 2004-2005](#)
- [Evaluation of Syngenta products to control of pink and gray snow mold 2003-2004](#)
- [Efficacy of Signature to control pink and gray snow mold 2003-2004](#)
-

■ Mesotrione Herbicide

- [Bentgrass and fineleaf fescue cultivar and species differences in phytotoxicity to mesotrione](#)
- [Mesotrione impregnated on fertilizer for weed control at seeding](#)
- [Mesotrione Safety at Seeding of Turfgrass Mixtures](#)
- [The Effect of Water Stress on the Efficacy of Mesotrione to Control Weeds in Cool-season Turfgrass Stands](#)
- [Mesotrione: Program for Bentgrass Removal and Overseeding \(Fall Timing\)](#)
- [Safety of Mesotrione 4SC when Applied to Sensitive Turf Species Grown in Mixtures](#)
- [Safety of Mesotrione 4SC when Applied as a Spray at Planting and at First Mowing of a 3-way Mixture of Cool-Season Turfgrasses](#)

Projects Include:

- 11 Snow Mold projects
- 7 Tenacity projects
- Black Sand Project
- 6 NTEP Trials
- *Poa annua* seed head suppression
- KBG seed production
- Leaf spot control
- N Leaching

Evaluation of Fungicides from Syngenta to Control Pink and Gray Snow Mold on Putting Greens in Idaho and Washington 2007-08.

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Dept. Crop and Soil Sciences
Washington State University

Snow mold control trials were conducted at 3 different locations in the Intermountain Region of the PNW, on a practice green at the Whitetail Golf Club in McCall, ID, a nursery green at the Chewelah Golf and Country Club in Chewelah, WA, and on a research green at the WSU Turfgrass and Agronomy Research Center (TARC) in Pullman, WA. The practice green at McCall is an USGA green of 'Providence' creeping bentgrass, the nursery green at Chewelah is a push-up green covered with 3" to 4" of sand with a mixed stand of 'Penncross' creeping bentgrass and annual bluegrass, and the research green is a pure stand of 'T-1' creeping bentgrass grown on an USGA green at Pullman. Individual treatment plots were 6' x 5' at McCall and 6' x 7' at Chewelah and Pullman with three replications in a randomized complete-block design. Treatments were applied 24 Oct 07, 1 Nov 07, and 15 Nov 07 at McCall, Chewelah, and Pullman, respectively. Fungicides were applied at 80 GPA with a bicycle-wheeled CO₂ pressurized (40 psi) sprayer with 11008 flat fan TeeJet nozzles. At McCall, one day prior to applying fungicide treatments, the practice green was core aerified and topdressed with sand (Figure 8). At Pullman snow cover was intermittent throughout the winter from the end of Nov 07 through the 26 Feb 08 (approx. 80 days). Continuous snow cover was from end of Nov 07 to 20 Apr 08 (approx. 140 days) at Chewelah and from mid Nov 07 to 8 May 08 at McCall (approx. 175 days). Individual plots were evaluated for pink (*Microdochium nivale*) and/or gray (*Typhula spp.*) snow mold disease severity (% area infected) and turfgrass quality (rated on a scale of 1-9; 9 = excellent) on 29 Feb 08 at Pullman, 23 Apr 08 at Chewelah, and 13 May 08 at McCall.

The non-treated control at Pullman had 14 % area infected with pink snow mold (*M. nivale*) (Table 1). All treatments provided complete snow mold control. Although not significant Turfcide 400 had the lowest turfgrass quality compared to the other fungicide treatments. Figures 1-4 show the treatments in Reps 1 and 2.

At Chewelah, the non-treated control had 13 % area infected with roughly 20% pink (*M. nivale*) and 80% gray (*Typhula spp.*) snow mold (Table 2). There was some winter injury which made rating difficult. However, all treatments had significantly less disease than the check. There were no significant differences in turfgrass quality among the treatments. Figures 5-7 show the treatments in Reps 1 and 2.

At McCall, the research site apparently was treated with fungicides in the fall by the staff at Whitetail either before or after the experiment was put out, which resulted in the total control of snow mold throughout the entire research site.

Figure 6. Syngenta snow mold trial at Chewelah Golf and Country Club. Chewelah, WA. Rated 23 Apr 08.

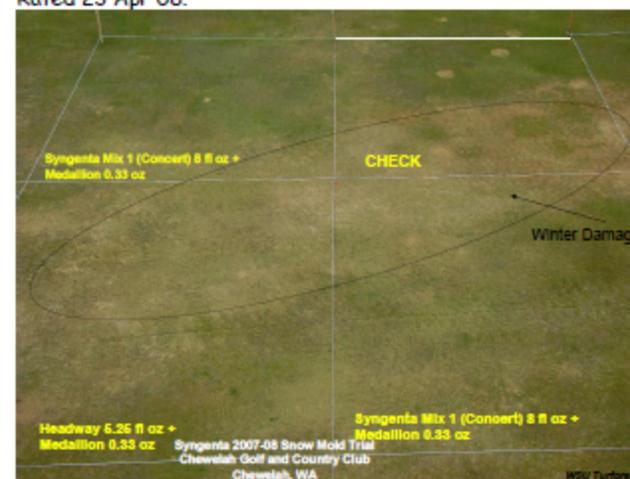
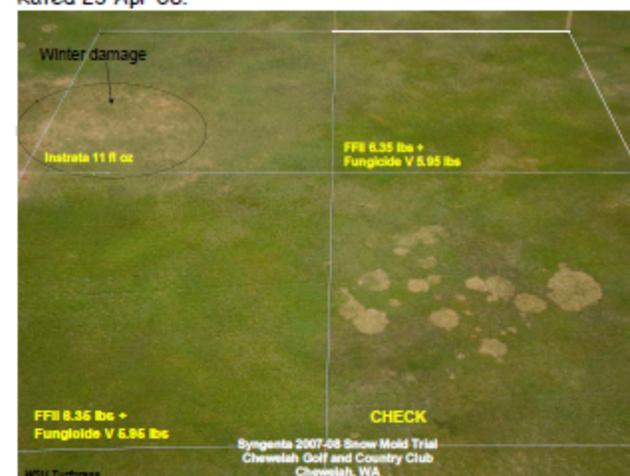


Figure 7. Syngenta snow mold trial at Chewelah Golf and Country Club. Chewelah, WA. Rated 23 Apr 08.



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