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Thanks also to our hosts: Todd Lupkes, Mike Bednar, their crew at Palouse Ridge GC, Lori Russell, and the IEGCSA volunteers.
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June 10, 2014
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Thank you, and we apologize to anyone we may have overlooked.
### WSU TURFGRASS and AGRONOMY RESEARCH FACILITY

**Pullman, WA**

**2014**

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<td>Fallow - Future 2014 National Bentgrass Fairway/Tee Test (NTEP)</td>
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<tr>
<td>4</td>
<td>Fallow</td>
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<td>5</td>
<td>Fallow</td>
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<td>6</td>
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<td>'NuDestiny' Kentucky bluegrass</td>
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<td>9</td>
<td>Seed increase nonburn Kentucky bluegrass PI 368241 (heads/area selection)</td>
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<td>10</td>
<td>Seed increase nonburn Kentucky bluegrass PI 368241</td>
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<tr>
<td>11</td>
<td>Lower $\frac{1}{2}$ plot: 'Gallery' perennial ryegrass. Upper $\frac{1}{2}$ plot: 'Treasure' chewings Fescue</td>
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<tr>
<td>12</td>
<td>Seed increase nonburn Kentucky bluegrass PI 371775 (seed/head selection). Fall applied PoaCure to control Poa annua in Kentucky bluegrass seed production.</td>
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<td>17</td>
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</table>
Efficacy of ‘Tenacity’ in Late Spring to Eliminate Poa annua in Kentucky Bluegrass Fairways

W.J. Johnston and C.T. Golob
Crop and Soil Sciences, Washington State University, Pullman, WA

OBJECTIVE
Determine the efficacy of Tenacity 45C combined with several herbicides to eliminate Poa annua from Kentucky bluegrass fairways.

MATERIALS & METHODS
Research was conducted on a Kentucky bluegrass fairway infested with P. annua at the Palouse Ridge Golf Club in Pullman, WA. Treatments were: Tenacity 5 fl oz/A + Xonerate 2 oz/A, Tenacity 4 fl oz/A + Xonerate 1 oz/A, Tenacity 5 fl oz/A + Turfmon 16 fl oz/A, 19950A 1 fl oz/A + Turfmon 16 fl oz/A, Tenacity 5 fl oz/A + Trifluralin 16 fl oz/A, and Tenacity 5 fl oz/A + Turfmon 16 fl oz/A + Turfmon 16 fl oz/A. Repeat treatments were made on May 2, May 23, and June 13, 2013. Applications in 2014 are currently ongoing.

RESULTS
Tenacity 5 fl oz/A + Xonerate 2 oz/A and Tenacity 4 fl oz/A + Xonerate 1 oz/A resulted in the greatest reduction of P. annua; however, associated with the Tenacity 5 fl oz/A + Xonerate 2 oz/A treatment was a high level of P. annua phytotoxicity and at times an unacceptable phytotoxicity on Kentucky bluegrass. In addition, open depressed areas in the fairway where the P. annua had died could present undesirable playing conditions during peak summer play. Tenacity 4 fl oz/A + Xonerate 1 oz/A also resulted in a high level of P. annua phytotoxicity for several weeks, but a low level of Kentucky bluegrass phytotoxicity and did not cause P. annua to quickly disappear creating open areas and depressions in the fairway.

CONCLUSIONS
Tenacity 4 fl oz/A + Xonerate 1 oz/A may be the most desirable P. annua control option to consider in terms of playability. Complete P. annua control was not achieved with any treatment; therefore, a multi-year program may be needed to achieve this goal. To determine the efficacy of multi-year applications, the trial is currently receiving repeat treatments during Spring 2014.

2013 Applications:
May 2 +
May 23 +
June 13

18 Weeks after initial treatment

18 Weeks after treatment

Percent change in Poa annua in the fairway 6, 12, and 18 weeks after initial treatment.
Multi-year Fall Applied Methiozolin for Poa annua Control on Golf Greens

W.J. Johnston and C.T. Golob
Crop and Soil Sciences, Washington State University, Pullman, WA

INTRODUCTION
Creeping bentgrass (Agrostis stolonifera L.) golf greens infested with annual bluegrass (Poa annua L.) can be hard to manage, unattractive, and have reduced playability. Methiozolin (Poacure) is a new isoxazolin herbicide that has shown selective P. annua control in golf greens (Han and Kaminski, 2012; Hart, 2012; Hoyle et al., 2012; Koo et al., 2013).

OBJECTIVE
Evaluate multi-year, single Fall applications of methiozolin to control low populations of P. annua in bentgrass greens.

MATERIALS & METHODS
Research was conducted on ‘T-14’ creeping bentgrass, sand-based greens (< 5% P. annua) at the Palouse Ridge Golf Club in Pullman, WA. A single application of methiozolin was applied at 3 L ha⁻¹ or 6 L ha⁻¹ in late September, mid October, or early November in 2010 and reapplied to the same plots in 2011. The study was repeated on a separate green in 2011-2013. Experimental design was a randomized complete block with four replications. Plant counts (two random 0.09 m² counts per plot) were made at initial application in September and subsequently monthly during the following two growing seasons during late Spring and Summer.

RESULTS
In the non-treated control, P. annua increased by 80% during the 2010-2012 study (Fig. 1) and by 120% in the 2011-2013 study (Fig. 2). In general, P. annua control increased with methiozolin application rate and late applications in the Fall. There was no bentgrass phytotoxicity observed at any time during either study. All treatments (except for the late September methiozolin application at 3 L ha⁻¹ during 2010-2012) reduced P. annua compared to the non-treated control. A single application of 6 L ha⁻¹ in early November of 2010 and 2011 completely eliminated P. annua by Summer 2012. In the repeat study (2011-2013), a single application of 6 L ha⁻¹ on 2 Nov. 2011 reduced the P. annua population by 66% the first year and by 83% after two years.

CONCLUSIONS
Multi-year (2 yr), single Fall applications of methiozolin provided excellent control of P. annua in bentgrass greens having an initial low P. annua population. In general control increased with methiozolin rate and late timing of applications. Methiozolin has the potential to become a management tool to mitigate the infestation of newly established bentgrass greens with P. annua or for P. annua control in bentgrass greens where a low population currently exists.

Fig. 1. Poa annua control with multi-year (2010 and 2011), single Fall applications of methiozolin at Pullman, WA.

Fig. 2. Poa annua control with multi-year (2011 and 2012), single Fall applications of methiozolin at Pullman, WA.

LITERATURE CITED
Hart, S. 2012. Fall application regimes of methiozolin for annual bluegrass control in creeping bentgrass putting greens. ASA-CSSA-SSSA abstracts. Cincinnati OH.
Mesotrione-Impregnated Fertilizer Use During Establishment of Cool-Season Turfgrasses

W.J. Johnston1, M.W. Williams2, C.T. Golob3, J.P. Yenish2, and E.D. Miltner4
1Crop & Soils Science, Washington State University, Pullman, WA
2Walla Walla Community College, Walla Walla, WA
3Dow AgroSciences, Billings, MT
4Agrium Advanced Technology, Atlanta, GA

INTRODUCTION
Herbicides labeled for weed control at time of seeding of cool-season turfgrasses are limited. Siduron can be applied at establishment; however, it does not control broadleaf weeds. Quinclorac also has limited use during establishment due to minimal bermudagrass control. Carfentrazone use is limited by its lack of grass weed activity and potential seedling injury and no fineleaf fescue information is on the label. A herbicide that can be combined with fertilizer in a single application to improve control of broadleaf weeds during cool-season turfgrass at seeding is needed, especially for the non-professional, home owner turfgrass market.

OBJECTIVE
Evaluate mesotrione impregnated on a granular fertilizer for the control of broadleaf and grass weeds in three cool-season turfgrasses during establishment.

MATERIALS & METHODS
Field studies were conducted at the Washington State University Turfgrass and Agronomy Research Facility at Pullman, WA during summer 2006 and 2007 on a Palouse silty loam soil. Three cool-season turfgrasses were included in the study: 'Tresure' Chewings fescue (Festuca rubra L. ssp. commutata (Caudn) (CF), 'Galaxy' perennial ryegrass (Lolium perenne L. (Jenner) & 'Redestablish' Kentucky bluegrass (Poa pratensis L.) (KBG)).

Mesotrione Impregnated on a Scotts 20-27-5 starter fertilizer (The Scotts Company, Marysville, OH) was applied at seeding and 6 wk after establishment. Mesotrione was applied as mesotrione-impregnated fertilizer (MIF) at 0.14 (untreated control (UTC)), 0.28, 0.56, or 1.12 g a.i. of mesotrione ha-1. Similar, impregnated on an 18-23-5 starter fertilizer, was applied at 570 g a.i. ha-1. The MIF treatments were specifically formulated products for each mesotrione rate; therefore, each mesotrione treatment received the same quantity of N fertilizer.

Predominant broadleaf weeds that occurred were: common lambsquarters (Chenopodium album L.), common mallow (Malva neglecta W.); and shepherd's-purse (Capsella bursa-pastoris (L.) Medic). Grass weed were: barnyardgrass (Echinochloa crus-galli (L.) Beauv) and wildrye (Pennisetum capillare L.).

Phytotoxicity was rated on a scale of 0 to 9, with 0 = healthy turfgrass, 9 = dead turfgrass, and values ≥ 2 considered to be unacceptable turfgrass quality. Weed counts were taken by randomly placing a 0.3-×0.6-m quadrat in each experimental unit and counting the number of broadleaf or grass weeds within the quadrat. Turfgrass control was visually rated as a percentage of the individual plot area occupied by the seeded turfgrass species.

For each grass species, treatments were arranged in a randomized complete-block design with three replications. Individual plots (experimental units) were 1.8 × 3.8 m in all treatments. When ADV for year 1 treatment interactions were non-significant, data from 2006 and 2007 were compared for analysis. Analyses were performed using Fisher's protected Least Significant Difference (LSD) (*P < 0.05). All analyses were performed using Statistic 9.0 (Analytical Software, Tallahassee, FL).

RESULTS AND DISCUSSION
Mesotrione-impregnated fertilizer was not safe to apply during establishment to a pure stand of CF, although excellent weed control was achieved (Tables 1 and 2). Shoot growth on CF was observed at all mesotrione rates, which does not support the work of Reicher and Weisenberger (2006) who showed safety of mesotrione applications on CF at ≤2 g a.i. ha-1. This may be due to differences in phytotoxicity among species and cultivars of fineleaf fescue, which has previously been observed (Williams et al., 2009). Also, the granular formulation of mesotrione maybe more active than the liquid formulation. Further research comparing mesotrione granular and liquid formulations on CF turfgrass cover of CF was markedly reduced by applications of MIF.

Phytotoxicity on CF caused by MIF applications was minimal. Others have reported PRG tolerance to mesotrione at 2.88 g a.i. ha-1 (Reicher and Weisenberger, 2005). Broadleaf and grass weed control was achieved with all MIF treatments in Table 3. Turfgrass cover was reduced only by mesotrione applied twice at 0.56 g a.i. ha-1 in 2007, which is three times the label rate for a single application and twice the yearly limit. Broadleaf weed control with siduron in our study was most likely due to the rapid germination and highly competitive nature of PRG, and not to herbicidal action of siduron on broadleaf weeds.

Mesotrione-impregnated fertilizer was safe to apply to KBG and was effective at controlling grass and broadleaf weeds (Table 4), with the exception of redroot false dandelion (Erodium cicutarium (L.) L'Hér. ex Alst.) and withgrass, which were injured but not controlled.

CONCLUSIONS
Mesotrione-impregnated fertilizer applied twice at (seeding and 6 wk later) at any mesotrione rate ranging from 161 to 565 g a.i. ha-1 provided adequate broadleaf and grass weed control in CF, PRG, and KBG, however, all mesotrione rates were phytotoxic on CF and also reduced CF cover. Lower rates of mesotrione used in these studies should prove to be more cost effective and allow for split- or repeat-applications, as the maximum annual use rate of mesotrione is 560 g a.i. ha-1 (*P < 0.05).

LITERATURE CITED
Anonymous. 2010. Tolerance herbicide label. Syngenta Crop Protection, Greensboro, NC.
Kentucky Bluegrass Germplasm for Turf and Seed Production

W.J. Johnston¹, R.C. Johnson², and C.T. Golob¹
¹Dept. of Crop and Soil Sciences and ²Western Regional Plant Introduction Station, WSU

The objective of the study was to develop bluegrasses that have sustainable seed yield without post-harvest field burning and still maintain acceptable turfgrass quality. This long-term study consisted of 10 Kentucky bluegrass entries; eight are USDA/ARS Plant Introduction (PI) accessions and two are commercial cultivars ('Kenblue' and 'Midnight'). All entries in previous research had expressed high seed yield without burning of post-harvest residue and good turfgrass quality. Several agronomic yield parameters were evaluated over a 2-year period and individual plants were reselected within each accession, or check, with the highest seed weight, highest seeds/head, highest heads/area, and highest seed yield. Turfgrass plots were established in 2006 and seed production plots (irrigated and non-irrigated) were established in 2007 at Pullman, WA. The turfgrass trials were evaluated according to NTEP (National Turfgrass Evaluation Program) protocol. Seed production plots were harvested (2008-2011) and seed increase plots established in 2011 were harvested in 2012 and 2013.

Results indicate that PI 368241, selection heads/area, showed the most promise of being able to provide long-term turfgrass seed yield without field burning in both non-irrigated and irrigated seed production (Table 1). Kenblue, selection seed/head, had good seed yield and fair turfgrass quality. PI 371775, selection seed/head, had good turfgrass quality while maintaining good seed yield with irrigation. These three selections are currently in seed increase plots at Pullman. In the PNW, bluegrass seed yields in 2013 were considerable below average. It will be interesting to see if the yields in the dryland seed increase plots were following the regional trend in 2013, or will rebound in seed yield in 2014.

Table 1. Kentucky bluegrass germplasm turfgrass quality and seed yield.

<table>
<thead>
<tr>
<th>Cultivar or PI#</th>
<th>Selection parameter</th>
<th>Turfgrass quality¹</th>
<th>Seed yield (lbs/A)</th>
<th>Seed increase plots</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>5-yr mean Pullman</td>
<td>4-yr mean Dryland</td>
<td>4-yr mean Irrigated</td>
</tr>
<tr>
<td>Midnight</td>
<td>Elite-type check</td>
<td>7.1 a&lt;sup&gt;2&lt;/sup&gt;</td>
<td>136 c</td>
<td>243 d</td>
</tr>
<tr>
<td>Kenblue</td>
<td>Common-type check</td>
<td>5.3 c</td>
<td>398 b</td>
<td>608 c</td>
</tr>
<tr>
<td>Kenblue</td>
<td>Seeds/head</td>
<td>5.4 c</td>
<td>795 a</td>
<td>995 ab</td>
</tr>
<tr>
<td>371775</td>
<td>Seeds/head</td>
<td>6.1 b</td>
<td>404 b</td>
<td>800 bc</td>
</tr>
<tr>
<td>368241</td>
<td>Heads/area</td>
<td>5.1 d</td>
<td>893 a</td>
<td>1102 a</td>
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<td></td>
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<td></td>
<td></td>
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<td>2012</td>
<td>2013</td>
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<td></td>
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<td></td>
<td>1207&lt;sup&gt;3&lt;/sup&gt;</td>
<td>911&lt;sup&gt;3&lt;/sup&gt;</td>
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<td>934&lt;sup&gt;3&lt;/sup&gt;</td>
<td>673&lt;sup&gt;3&lt;/sup&gt;</td>
</tr>
</tbody>
</table>

¹Turfgrass quality rated 1 to 9; 9 = excellent.
²Means within columns followed by the same letter are not significantly different. LSD P = 0.05.
³Dryland
⁴Irrigated
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.

Students gain hands-on experience at the WSU Turf Research farm and the new 18-hole, championship golf course near campus. Internships place students at quality golf courses and sports fields across the country, giving them invaluable work experience prior to graduating.

Students will be pleased to know that turfgrass management has now been formalized as a major in the Department of Crop and Soil Sciences.

Degrees offered:

- B.S. in Integrated Plant Sciences, with a major in Turfgrass Management (or minor in Crop Science)
- M.S. degree in Crop Science
- Ph.D. degree in Crop Science

Turf Senior Selected for USGA Green Section Internship

Marcus Harness, a recent WSU turfgrass management alum, was one of 15 students selected from a nationwide pool to participate in the 12th annual United States Golf Association (USGA) Green Section Internship Program. Read More.

Rebuilding New Orleans

Turf Students Work on Floors, Too

WSU turf management program recent alums Jerry Langreder (center) and Nick Magnuson (right) traded golf clubs for hammers while volunteering for Habitat for Humanity in hurricane-devastated New Orleans in 2009. For one day, Langreder and Magnuson

http://turf.wsu.edu/
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 Colob, Research Supervisor, manages the research facility.

Research Facility Diagram

Current Research Emphasis

Current emphasis is on comparison of different fungicides for snow mold disease control, evaluation of different grass species for the National Turfgrass Evaluation Program (NTEP), evaluation of methiozolin ('PoaCure') for Poa annua control in cool-season grasses, development of Kentucky bluegrass for seed production without post-harvest field burning, and Poa annua control in irrigated Kentucky bluegrass seed production.

In addition to these projects, information on older projects such as controlling leaf spot on golf course fairways, Poa annua seedhead suppression on bentgrass/annual bluegrass golf greens, quantifying post-harvest emissions from bluegrass seed production field burning, development of a rapid and non-destructive method for separating grass clipping from topdressing 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, nitrogen leaching from a sand-based green, and the use of mesotrione ('Tenacity') for weed control in cool-season grasses can be found below.

PROJECTS

(note these are pdf files)

Roundup Formulations

Efficacy of a New Potassium Salt Formulation of Glyphosate (Roundup PROMAX) Compared to other Formulations of Glyphosate

Fertility Projects

- Georgia-Pacific's Nitamin® 30L (30-0-0) and Blends of Nfusion® (25-0-0) 'Steady-Delivery' Nitrogen Soluble Fertilizer Compared to Urea (46-0-0) on a "T-1" Creeping Bentgrass Green
- Georgia-Pacific's Nitamin Nfusion (25-0-0) 'Steady-Delivery' Nitrogen Soluble Fertilizer Compared to Simplot's Best Polyol (43-0-0) Controlled-Release Fertilizer on a Fairway Cut Kentucky Bluegrass Turf
- Georgia-Pacific's Nitamin® 30L (30-0-0) and Blends of Nfusion® (25-0-0) 'Steady-Delivery' Nitrogen Soluble Fertilizer Compared to UMAXX® (47-0-0) StabilizedNitrogen Fertilizer on a Perennial Ryegrass Lawn
- LESCO Fairway Fertilizer Study 2007
- LESCO Lawn Fertilizer Study 2007
- Snow Mold Control
  - Evaluation of AMVAC Fungicides for Snow Mold Control on Fairways 2012-13
  - Evaluation of AMVAC Fungicides for Snow Mold Control on Greens 2012-13
  - Evaluation of Bayer Fungicides for Snow Mold Control on Fairways 2012-13
  - Evaluation of Bayer Fungicides for Snow Mold Control on Greens 2012-13
  - Evaluation of Syngenta Fungicides for Snow Mold Control on Fairways 2012-13
  - Evaluation of Syngenta Fungicides for Snow Mold Control on Greens 2012-13
  - Evaluation of Bayer Fungicides for Snow Mold Control on Fairways 2011-12
  - Evaluation of Syngenta Fungicides for Snow Mold Control on Fairways 2011-12
  - Evaluation of Bayer Fungicides for Snow Mold Control on Greens 2011-12
  - Evaluation of Syngenta plus Harmonizer for Snow Mold Control on Greens 2011-12
  - Evaluation of Syngenta and Bayer Fungicides for Snow Mold Control on Fairways 2010-11
  - Evaluation of Bayer Fungicides for Control of Pink and Gray Snow Mold 2010-11
  - Civitas for Snow Mold Control 2009-2010
  - Fungicide for Control of Pink and Gray Snow Mold 2009-10
  - Evaluation of Bayer Fungicides for Control of Pink and Gray Snow Mold 2008-2009
  - Evaluation of Syngenta Fungicides for Control of Pink and Gray Snow Mold 2008-2009
  - 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
- Tenacity (Mesotrione) Herbicide
  - Multiple Spring Applications of Tenacity with Xonerate or Tenacity with Other Herbicides to Control Poa annua in Kentucky Bluegrass Fairways 2013
  - Two Consecutive Years of Multiple Fall Applications of Tenacity and Other Grass Herbicides to Control Poa annua in Kentucky Bluegrass Fairways 2009-2011
  - Development of Tenacity 45SC for Weed Control Recommendations with Spray Adjuvants 2011
  - Fall Program Using Tenacity, Prograss, and/or Velocity for Selective Removal of Poa annua Post-emergence in Kentucky Bluegrass Fairways 2010
  - Fall Program Using Tenacity, Prograss, and/or Velocity for Selective Removal of Poa annua Post-emergence in Kentucky Bluegrass Fairways 2009

http://turf.wsu.edu/research/
- Tenacity Impregnated Fertilizer for Broadleaf Weed Control in Home Lawns 2010
- The Effect of Timing/10acity used in a Late Fall Renovation on Subsequent Poa annua Re-estabilishment in a Golf Course Fairway 2008-2009
- Spring Applied Tenacity 4FL Alone or with Grass Herbicides to Control Annual Bluegrass 2009
- Comparing the Safety of Tenacity 4SC Formulation to a New 2SC Formulation on Fineleaf Fescue at Seeding 2007
- Comparing the Safety of Tenacity 4SC Formulation to a New 2SC Formulation on Perennial Ryegrass at Seeding 2007
- Mesotrione: Program for Bentgrass Removal and Overseeding (Fall Timing) 2007 and Early Summer 2008
- Mesotrione: Program for Bentgrass Removal and Overseeding (Fall Timing) 2007
- Bentgrass and fineleaf fescue cultivar and species differences in phytotoxicity to mesotrione 2007
- Rates of Mesotrione Impregnated on Fertigrow Codein at Seeding 2007
- Mesotrione Safety at Seeding of Turfgrass Mixtures 2007
- The Effect of Water Stress on the Efficacy of Mesotrione to Control weeds in Cool-season Turfgrass Stands 2007
- Mesotrione: Program for Bentgrass Removal and Overseeding (Fall Timing) 2007
- Safety of Mesotrione 4SC when Applied to Sensitive Turf Species Grown in Mixtures 2007
- Safety of Mesotrione 4SC when Applied as a Spray at Planting and at First Mowing of a 3-way Mixture of Cool-Season Turfgrasses 2007

Methiozolin Herbicide
- Evaluation of a New Herbicide, Methiozolin, for Selective Poa annua Control Post-emergence on Creeping Bentgrass Putting Greens 2010-11

National Turfgrass Evaluation Program (NTEP)
- 2004 National Perennial Ryegrass Test (2005-2008 Summary)
- 2005 National Kentucky Bluegrass Variety Test (2006-2009 Summary)
- 2006 National Kentucky Bluegrass Test (2007) data
- 2000 National Tall Fescue Test (schedule A: medium input), 2001-2004 data
- 2001 National Tall Fescue Test (schedule A: medium-high input), 2002-2004 data

Spokane Reuse Water Project
- Golf Course Reuse Water Pilot Study Phase I Report 2008
- Golf Course Reuse Water Pilot Study Phase II Report 2009
- Golf Course Reuse Water Pilot Study Phase III Report 2010

Black Sand
- The Use of Black Sand to Accelerate Creeping Bentgrass Seed Germination and Emergence on a Late Fall Planted Putting Green 2008

Suppression of Poa annua Seedheads
- Suppression of Poa annua Seedheads on Bentgrass/Annual Bluegrass Putting Greens Comparing N881150 with Embarck and Primo/Proxy 2004

Controlling Leaf spot on Golf Fairways
- Control of Helminthosporium Leaf Spot in Cool-season Turf with Medallion 2004

Pink Snow Mold Resistance in PNW Poa annua
- Correlating Field and Controlled-environment Studies of Pink Snow Mold Resistance in PNW Greens-type Poa annua 2004

Characterization of PNW Poa annua
- Regional Climatic Characterization of PNW Green-type Poa annua
- Nitrogen Leaching from Sand-based Greens
- Inclined Vibrating Deck
- Rapid, Non-destructive Method for Separating Turfgrass Clippings from Topdressing Sand using an Inclined Vibrating Deck

Kentucky Bluegrass Seed Production
- No-burn Kentucky Bluegrass Seed Production, Pullman Field Day 2011
- No-burn Kentucky Bluegrass Seed Production DOF 2009-2011 Final Report
- Development of Kentucky bluegrass for non-burn seed production- Proceedings of the International Herbage Seed Conference, Gjennestad, Norway, June 17-20, 2007
- Development of High Yielding Kentucky Bluegrass for Non-thermal Seed Production-Final Progress Report 2006
- Development of High Yielding Kentucky Bluegrass for Non-thermal Seed Production 2005

Post-harvest Emissions
- Quantifying Post-harvest Emissions from Bluegrass Seed Production Field Burning (Final Report March 2004)

PRESENTATIONS
Snow Mold Control
- Evaluating Fungicides for Snow Mold Control on Putting Greens and Fairways in the Intermountain West 2010-2011 Results
- Snow Mold Control on Putting Greens in the Intermountain West with Prolonged Snow Cover 2010
- Snow Mold Control on Putting Greens in the Intermountain West 2007

Mesotrione (Tenacity)
- Multi-year (2 consecutive) Fall Tenacity Plus Progress Program for Selective Post-emergence Poa annua Suppression in Kentucky Bluegrass Fairways
- Selective Bentgrass: Removal from Perennial Ryegrass with Mesotrione (Tenacity)
- Tenacity: A New Herbicide for Turfgrass Establishment
- Tenacity for Bentgrass Removal
- Tenacity for Bentgrass and Poa annua Control

Methiozolin Herbicide
- Selective Poa annua Removal from Creeping Bentgrass, Putting Greens with a New Herbicide Methiozolin 2010-2011

Spokane Reuse Water Project
- Pilot Reuse Water Project 2009

High Yielding Kentucky Bluegrass Germplasm
- An Burning Taskforce Presentation 2009

OVERVIEWS
- 2007 WSU-Pullman Turfgrass Research Overview

FIELD DAY REPORTS
- 2008 Field Day Research Reports

http://turf.wsu.edu/research/
2012 WSU Turfgrass Field Day
Turfgrass Management
Washington State University

Graduating with a Turfgrass Management major allows you to pursue a career in:
- Golf course management
- Sports field management
- Landscape industry
- Sod and nursery industries
- Or further your education with a M.S. or Ph.D. to pursue opportunities in: education, university extension, corporate research, or business

Turfgrass majors at WSU have:
- Involvement: interact with peers; 20 undergraduate turf majors
- Jobs: turf students have had 100% turf industry job placement at graduation for the past 10 years. 2013 Golf Course Superintendent $82,500, Asst. $40,000 (GCSAA, 2013).
- Work/study: during the academic year work opportunities at the WSU golf course, athletics, grounds, etc.
- Internships: nation-wide opportunities
- Hands-on-learning: work with faculty on field and laboratory research projects
- Scholarships: $15,000 in turfgrass scholarships were awarded for 2013-2014; the College awarded an additional $400,000 in scholarships
- Turf Club activities: guest speakers, golf tournament, spring turf tour, team competition at GCSAA and STMA,

Do you recognize any of these past WSU turf club members now working in the Pacific Northwest?

Contact WSU:
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For more information:
- Turfgrass Management Program (Teaching, Research, and Extension)
  - http://turf.wsu.edu
- Department of Crop and Soil Sciences
  - http://css.wsu.edu
Missed something? Check our website: turf.wsu.edu