Another look at poa management on greens and fairways

Wendy Gelernter Ph.D.

Poa control on greens: No longer impossible?

• On the green vs. off the green
• Products vs. cultural practices

On the green
Keep bentgrass healthy

Practices
• Nutrition
  (maintain P at >50 ppm P via Mehlich III)
• Handpicking
• Aeration

Historical P Trend, Talega GC
George Kenny, superintendent

Decline in vigor 2004

On the green

<table>
<thead>
<tr>
<th>Products</th>
<th>Practices</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-emerge: 2-3</td>
<td>Nutrition (20 to 50 ppm P via Mehlich III)</td>
</tr>
<tr>
<td>apps of bensulide*</td>
<td>Hand picking</td>
</tr>
<tr>
<td>during fall &amp; spring</td>
<td>Aeration</td>
</tr>
</tbody>
</table>

*Betasan, Presan, Bensumec
### On the green

<table>
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<th>Products</th>
<th>Practices</th>
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</thead>
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<td>• Pre-er: 2-3 apps of bensulide* during fall &amp; spring</td>
<td>• Nutrition (20 to 50 ppm P via Mehlich III)</td>
</tr>
<tr>
<td>• Post-er: Trimmit monthly when bent is actively growing</td>
<td>• Hand picking</td>
</tr>
<tr>
<td></td>
<td>• Aeration</td>
</tr>
</tbody>
</table>

*Betasan, Presan, Bensumec

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### Trimmit 2 SC (paclobutrazole)

- Registered in CA 5/3/05 to Syngenta
- Signal word: CAUTION
- On greens, tees, fairways, roughs
- Almost all turf types (not kikuyu)
- Timing: Best when cool-season turf actively growing (spring, fall)

### Trimmit 2 SC: What it Does

- Type II GA inhibitor (similar to Primo)
- Regulates growth on all turf types, but poa most sensitive
- “Looks like it’s been nibbled by rabbits”
- Effects seen 1-2 weeks after treatment; lasts 3 to 8 wks

### Trimmit on bentgrass greens

- Best results inland, low poa infestations
- 0.12 – 0.36 oz/1000 sq ft
- Monthly, except when bent growth is slow
- Forever!
- Some discoloration of bent may occur
- Bermuda is regulated by Trimmit also!
- Avoid use with Primo, Proxy; Quicksilver?
- Current label limits applications to 3/year; New CA label expected late 2006
The Bridges, 4 weeks after treatment
Some thinning and discoloration of turf

The Bridges, 4 weeks after treatment
Use low rates of N to help counteract

Off the green

<table>
<thead>
<tr>
<th>Products</th>
<th>Practices</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Proxy/Primo to limit seedheads</td>
<td>• Replace collars w/bentgrass sod at&lt;20% poa invasion</td>
</tr>
<tr>
<td>• Control poa in fairways, roughs</td>
<td>• Don’t overseed fairways and roughs</td>
</tr>
</tbody>
</table>

Poa control on greens: 2006

• Post-emergent control with Trimmit makes poa-free bentgrass greens more feasible
• Stay the course
• Must be used in conjunction with all other products and practices
• Still no guarantee of sustainable pure bentgrass
• The more poa present, the more ugliness will result

Sample program: Coast

<table>
<thead>
<tr>
<th>Product</th>
<th>oz/1000 sq ft</th>
<th>Jan</th>
<th>Feb</th>
<th>Mar</th>
<th>Apr</th>
<th>May</th>
<th>Jun</th>
<th>Jul</th>
<th>Aug</th>
<th>Sep</th>
<th>Oct</th>
<th>Nov</th>
<th>Dec</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trimmit**</td>
<td>0.12 - 0.36</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>bensulide</td>
<td>4.7 (a.i.)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

Modifications for inland, desert areas?

Handout Table 4
Avoiding conversion to poa

Speeding up conversion to poa

Torrey Pines South Course: Greens built 2001

Target: 100% poa greens by 6/08
- Spiking
- Vertical mowing
- Slicing
- Mowing without baskets
- No seedhead suppression
- Proper irrigation and fertility
- Target disease management to poa
**Poa management on non-overseeded bermuda fairways**

- Greatest chance for success
- Fewer sources of contamination
- Many more products, even for non-dormant bermuda
  - Revolver, Monument
  - Barricade, Dimension, Pendulum
- Paspalum, kikuyugrass still have many fewer options

**Non-overseeded fairways**

<table>
<thead>
<tr>
<th>Non-overseeded bermudagrass fairways</th>
<th>Product</th>
<th>Rate/A</th>
<th>Jan</th>
<th>Feb</th>
<th>Mar</th>
<th>Apr</th>
<th>May</th>
<th>Jun</th>
<th>Jul</th>
<th>Aug</th>
<th>Sep</th>
<th>Oct</th>
<th>Nov</th>
<th>Dec</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dimension EC</td>
<td>2 qts</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Barricade 65 WG</td>
<td>0.75 lb</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Revolver or Monument</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
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<td></td>
<td></td>
</tr>
</tbody>
</table>

**Trimmit on overseeded fairways**

- Start at 85% rye cover ~December
- 8 - 10 oz/A
- 3 monthly applications
- Water in within 24 hours
- Avoid when active bermuda growth
- Mixtures with other growth regulators:
  - Primo: NO
  - Embark: OK
  - Proxy: separate applications by 7 d

**Fairway 14, Shady Canyon**

<table>
<thead>
<tr>
<th></th>
<th>Applied 5/10 and 5/30/05, 10 oz/A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trimmit</td>
<td>No treatment</td>
</tr>
<tr>
<td>30% Poa</td>
<td>35% Poa</td>
</tr>
</tbody>
</table>

**Fairway 14, Shady Canyon**

<table>
<thead>
<tr>
<th></th>
<th>5/30/05 20 DAT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trimmit</td>
<td>No treatment</td>
</tr>
<tr>
<td>25% Poa</td>
<td>35% Poa</td>
</tr>
</tbody>
</table>
**Fairway 14, Shady Canyon**

No treatment
45% Poa

Trimmit
15% Poa

6/20/05 41 DAT

**Shady Canyon Fairway 14**

Decreased turf quality after 2 applications

![Graph showing turf quality comparison](image)

**Trimmit on overseeded fairways for Poa control**

- Expect some yellowing and thinning of rye or bent
- Bermuda impacted, especially in winter
- Expect some ugliness if >5% poa
- Can be partly mitigated with N and Fe and by treating only healthy, actively growing turf

**Trimmit: 2006**

- The only effective post-emergent poa control on non-dormant bermuda fairways that are overseeded
- Avoid on actively growing bermuda
- Commitment to a long-term program necessary; expect gradual improvement
- Significant control possible

**Velocity (bispyribac)**

- Registered in CA 5/05 to Valent
- Signal word CAUTION
- A sulfonylurea that controls Poa (annua and trivialis) but is safe for ryegrass
- Labeled on bent, rye, dormant bermuda tees and fairways
- 80-90% post-emergent control
- Kikuyu, paspalum safety unknown

**Pelican Hill Golf Club March, 2004**
Velocity in the low desert, January 2006

Treated 1/3/06
Photo taken 1/24/06
Low rate of 0.65 oz/A
Good control, but yellowed rye

Velocity

- Bent and rye can be temporarily yellowed
- Appears within 4-7 days
- Dissipates within 7-14 days
- Currently no known way to mask yellowing

Velocity: 2006

- A good alternative/rotation to ethofumesate (Prograss, Poa Constrictor) for post-emergent control
- A little softer on non-dormant bermudagrass than ethofumesate, but should not be used on actively growing bermuda

Options for post-emergent poa control

<table>
<thead>
<tr>
<th>Trimit</th>
<th>Prograss</th>
<th>Velocity</th>
</tr>
</thead>
<tbody>
<tr>
<td>For use on</td>
<td>All</td>
<td>Fwys, roughs</td>
</tr>
<tr>
<td>Active bermuda injury potential</td>
<td>Low</td>
<td>High</td>
</tr>
<tr>
<td>Start applications</td>
<td>Dec/ rye 85%</td>
<td>Dec/ dormancy</td>
</tr>
<tr>
<td># applications</td>
<td>3 monthly</td>
<td>2-3 monthly</td>
</tr>
<tr>
<td>Other weeds?</td>
<td>no</td>
<td>yes</td>
</tr>
<tr>
<td>Do not overseed: wks before/after</td>
<td>6/2</td>
<td>2/2</td>
</tr>
</tbody>
</table>

Handout Table 6

Poa control on overseeded fairways, 2004

<table>
<thead>
<tr>
<th>Velocity Rate oz/A</th>
<th>Interval (days)</th>
<th>Pelican Hill</th>
<th>TPC Valencia</th>
<th>Desert Princess</th>
<th>% Avg Control</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.0 + 2.0</td>
<td>28</td>
<td>97 a</td>
<td>95 ab</td>
<td>63 a</td>
<td>85</td>
</tr>
<tr>
<td>0.65 + 0.65 + 0.65</td>
<td>14</td>
<td>83 c</td>
<td>93 ab</td>
<td>66 a</td>
<td>81</td>
</tr>
<tr>
<td>1.3 + 1.3 + 1.3 + 1.3</td>
<td>64</td>
<td>85 b</td>
<td>79 a</td>
<td>81</td>
<td>100</td>
</tr>
</tbody>
</table>

2 – 3 applications @ 1.3 oz/A during winter

The colder the weather, the more dramatic the yellowing
Poa control on overseeded fairways: the coast

<table>
<thead>
<tr>
<th>Overseeded bermudagrass fairways</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Product</td>
<td>Jan</td>
</tr>
<tr>
<td>Dimension EC</td>
<td>0.5</td>
</tr>
<tr>
<td>Barricade 65% ms 0.75 lb</td>
<td></td>
</tr>
<tr>
<td>Trimec</td>
<td>8 - 10 oz</td>
</tr>
<tr>
<td>Primo Maxx</td>
<td>13 - 22 oz</td>
</tr>
<tr>
<td>Velocity or Prograss**</td>
<td>0.3 oz or 1.5 gal</td>
</tr>
</tbody>
</table>

Use as needed for post-emergent control of “escapes.” Bermudas must be nearly dormant or dormant for rye, poa removal at spring transition.

Assumes 10/1 overseeding date

Handout Table 4

Transition accelerators for rye removal on overseeded fairways

- Revolver registered in CA 5/05
- Monument registered in CA 8/05
- Application timing critical
  - Too early: bare patches
  - Too late: no benefit

Optimal application timing

<table>
<thead>
<tr>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Desert</td>
</tr>
<tr>
<td>Inland</td>
</tr>
<tr>
<td>Coast</td>
</tr>
</tbody>
</table>

Areas with low warm-season cover are still potential risks on these dates

Handout Table 5

Lower rates and multi-year programs minimize risk

- Especially on the coast
- Especially in shady areas
- Especially in stressed areas
Impact of lower rates

Turfgrass Tolerance to Velocity

Rye  Fescue  Poa trivialis
Bent  Kentucky blue  Poa annua

Tolerant  Less Tolerant