Seashore Paspalum Traffic Tolerance

Preliminary Results

Jim Brosnan, Ph.D.
University of Hawaii
2008 LICH Conference & Trade Show
29 May 2008
Bare Soil
Weeds
Poor turf cover

Why??
Staffing
Basic Formula

Field Use

$\$\$\$$
What Happens Most Often

Field Use

$$$
<table>
<thead>
<tr>
<th>Athletic Field vs. Golf</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>7.1 million acres</strong></td>
</tr>
<tr>
<td><strong>30,000 facilities</strong></td>
</tr>
<tr>
<td>- 300+ professional</td>
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<tr>
<td>- 3000 college/univ.</td>
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<tr>
<td>- 7000 parks &amp; rec.</td>
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<tr>
<td>- 20,000 schools</td>
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<tr>
<td><strong>$11 billion</strong></td>
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<tr>
<td>- $1,500 / acre</td>
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</tbody>
</table>

McNitt, 2006
How do we deal with this?
Species Selection

Bermuda

Tifway 419

Riveria

Common

Princess-77
Seashore paspalum ????
2 passes = 1 NFL game

CADY Traffic Simulator
Verticut (1” depth)
Remove debris
Topdress & Brush
Shoot Density

6.35 x 6.03-cm plug
Apply Traffic
(152 passes = 71 games)
% Cover

27 games

<table>
<thead>
<tr>
<th>Cultivar</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tifway 419</td>
<td>95</td>
</tr>
<tr>
<td>Seadwarf</td>
<td>93</td>
</tr>
<tr>
<td>Salam</td>
<td>91</td>
</tr>
<tr>
<td>Sea Isle 1</td>
<td>85</td>
</tr>
<tr>
<td>Sea Isle 2000</td>
<td>44</td>
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</tbody>
</table>

LSD = 5.0
<table>
<thead>
<tr>
<th>Cultivar</th>
<th>%</th>
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<tbody>
<tr>
<td>Sea Isle 1</td>
<td>90</td>
</tr>
<tr>
<td>Seadwarf</td>
<td>81</td>
</tr>
<tr>
<td>Salam</td>
<td>76</td>
</tr>
<tr>
<td>Tifway 419</td>
<td>29</td>
</tr>
<tr>
<td>Sea Isle 2000</td>
<td>13</td>
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</table>

LSD = 5.0
Sea Isle 1

Traffic

No Traffic
Seadwarf

Traffic

No Traffic
# Shoot Density

<table>
<thead>
<tr>
<th>Cultivar</th>
<th>#/dm²</th>
</tr>
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<tbody>
<tr>
<td>Seadwarf</td>
<td>311</td>
</tr>
<tr>
<td>Salam</td>
<td>305</td>
</tr>
<tr>
<td>Sea Isle 1</td>
<td>251</td>
</tr>
<tr>
<td>Tifway 419</td>
<td>245</td>
</tr>
<tr>
<td>Sea Isle 2000</td>
<td>123</td>
</tr>
</tbody>
</table>

LSD = 10

(Trenholm et al. 2000)
What if I can't switch to seashore paspalam?

What else can I do?
A healthy growing environment
Soil Testing

At least once a year

Composite sample

Every field

Accredited Lab

Nutrient Deficiencies
Fertilization

Complete Fertilizer (N- P₂O₅ -K₂O)
1-1.5 lb N per 1000 sq. ft
EVERY MONTH
Mowing
Effect of fertilization and mowing frequency on number of simulated soccer games with acceptable turf cover.

Mowing once per week — $2,181

Mowing twice per week — $4,362

High fertilization
7# N/M/YR
$705

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<th>April</th>
<th>May</th>
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<th>July</th>
<th>Aug</th>
<th>Sept</th>
<th>Oct</th>
<th>Nov</th>
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<tbody>
<tr>
<td>1#</td>
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Medium fertilization — frequent
5# N/M/YR
$535

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</thead>
<tbody>
<tr>
<td>1/2#</td>
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Medium fertilization — infrequent
5# N/M/YR
$505

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(Calhoun et al. 2002)
Clean Mowers Before Use
Thousands of Seeds

Carried in on a mower
Stolons Introduced Too Minimize FUTURE weed problems
Aerification
Why Aerify?

• Relieve compaction

• Improve:
  - Drainage
  - Gas Exchange

• Weed Control?
Healthy Turf is less susceptible to weed invasion

Photo by: L. Yoder, San Diego Padres
Vertidraining is a Supplement

6” centers
Aerification

3-4 times per year
2” centers
0.5 hollow tines
2 passes

Photo by: L. Yoder, San Diego Padres
Vertical Mowing
Remove OM

Prevent things from getting “puffy”
Conclusions

Seashore paspalum is traffic tolerant

Healthy growing environment
If you manage Sports Fields

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808-284-7913

http://turfgrass.ctahr.hawaii.edu
Turfgrass Management at the University of Hawaii

Turfgrass Soils Laboratory Open at UH
A turfgrass soils testing laboratory, under the direction of Dr. Jim Brosnan, opened this past week at the University of Hawaii. Currently, this laboratory has the ability to perform particle size analyses on rootzone samples according to the methods outlined in the ASTM F-1532 specification. In the coming months the laboratory will be expanded to provide measurements of saturated hydraulic conductivity, air-filled and capillary porosity, as well as the organic matter content of turfgrass rootzone mixes. For more information on soil physical properties analyses at the UH Turfgrass Soils laboratory, contact Dr. Jim Brosnan.

Research Updates
Students aid in research plot establishment
Research areas were established this past Friday at the National Memorial Cemetery of the Pacific.

The use of salt as an alternative to herbicide on seashore paspalum
Studies were initiated this week at Koolau

Upcoming Events
Nov. 29 -- The Georgia Water Story
GCSAA Education 800-472-7878. More »

Nov. 30 -- 15th Annual Sports Turf Field Day
Yuma, Ariz. Contact the Sports Turf Managers Association of Arizona. More »

Dec. 5 -- GCSAA Webcast: Financial Management and Budgeting

Poll
Will You Be There?
Do you plan on attending the 2008 LICH Conference and Trade Show at the Neal S. Blaisdell Center in Honolulu, HI on May 28th-29th?

[ ] Yes
[ ] No
[ ] Undecided