

Saturation, Lightness

H U E = 1 2 0 °



Coloring Grass Green

Grady L. Miller

grady_miller@ncsu.edu

Paint, Pigments, Colorants, Dyes

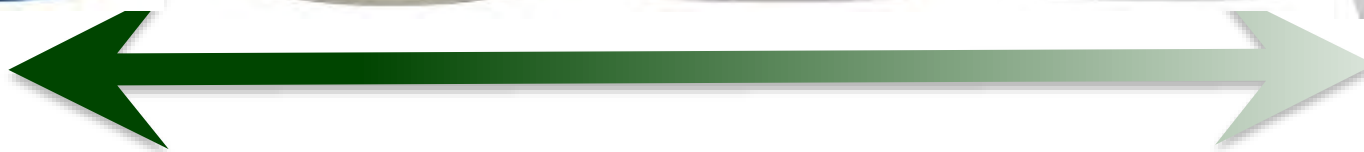
Paint



Colorants



Dye



Insoluble Pigments
High Concentration
No affinity for substrate
Latex or acrylic Resin
Designed for Opacity

Soluble Organic substances
Low Concentration
Affinity for substrate
Little to no Resin
Very Little Opacity

Turfgrass Paint

- Athletic field paints are routinely applied to field surfaces to mark regulation lines and team logos
 - Pressure
 - 300 to 900psi
 - Rate
 - 4 to 30 gal/1,000 ft²
(175 to 1300 GPA)
 - Frequency
 - 6 to 10 times/year



GreenPIG™

GreenPIG™ is a pigment additive. This formulation is designed to enhance and extend aesthetic turf appearances.



DIRECTIONS FOR USE

- Add GreenPIG™ to mix tanks after all actives are dispersed.
- Always mix or agitate prior to dispensing.
- Maintain constant agitation during use.
- Longer or fuller grass may require higher rate, adjust rates as needed.
- Spot test for acceptable color depth prior to full scale spraying.
- Retain mix rate records as a reference for future spray applications.
- Thoroughly clean all spray equipment after use.

APPLICATION RATES

*Ideal storage conditions:
Only store in original container
between 50°-85° F
Protect from freezing*

On Fairways / Roughs:

Apply 14-16 fl.oz. per acre in about 50 gal of water (0.32-0.37 fl.oz / 1,000 ft²)

On Greens / Tees:

Apply 8-10 fl.oz per acre in about 80 gal of water (0.18-0.23 fl.oz / 1,000 ft²)

WARNING: This product may stain. Keep off unwanted areas such as sidewalks, patios, driveways, fences, painted areas, etc. As a precaution, spray off unwanted areas with only water after applying. Repeated or prolonged exposure to skin and eyes should be avoided as it may cause irritation. Applicators should always use proper safety equipment.

CONDITION OF SALE: The information contained on this label is believed to be accurate and reliable. It is impossible to eliminate all risks inherently associated with the use of this product. Crop injury, ineffectiveness, or other unintended consequences may result because of such factors as weather conditions, presence of other materials, or the manner of use or application, all of which are beyond the control of the seller. Buyer and user acknowledge and assume all liability resulting from the use of this material. To the extent consistent with applicable law the seller is not liable for consequential, special or indirect damages resulting from the use or handling of this product. Furthermore, the seller makes no warranties, guarantees, or representations of any kind, either express or implied, or by usage of trade, statutory or otherwise, with regard to the product sold, including, but not limited to, merchantability, fitness for a particular purpose use or eligibility of the product for any particular trade usage. To the extent consistent with applicable law, buyer's or user's exclusive remedy to the seller's total liability, shall be for damages not exceeding the cost of the product.

- FOR PROFESSIONAL OR INDUSTRIAL USE ONLY •
- READ ENTIRE LABEL AND FOLLOW DIRECTIONS CAREFULLY •
- KEEP OUT OF REACH OF CHILDREN AND PETS •



2.5 U.S. Gallons
(9.46 Liters)

Net Weight 24.62 lbs. (11.17 kg)
Specific Gravity 1.18 • pH 8-9

Manufactured for & Distributed by PO BOX 128, Albion, ID 83311
Turfgrass Management, Inc.
d/b/a Grigg Brothers. 1-208-673-6340
<http://www.griggbros.com>

Product and Rates

Rate suggests a concentrated pigment or dye since in oz/A

Green Lawngr rate is 3 – 10 GPA product

[Athletic field paint 100-1000 GPA]

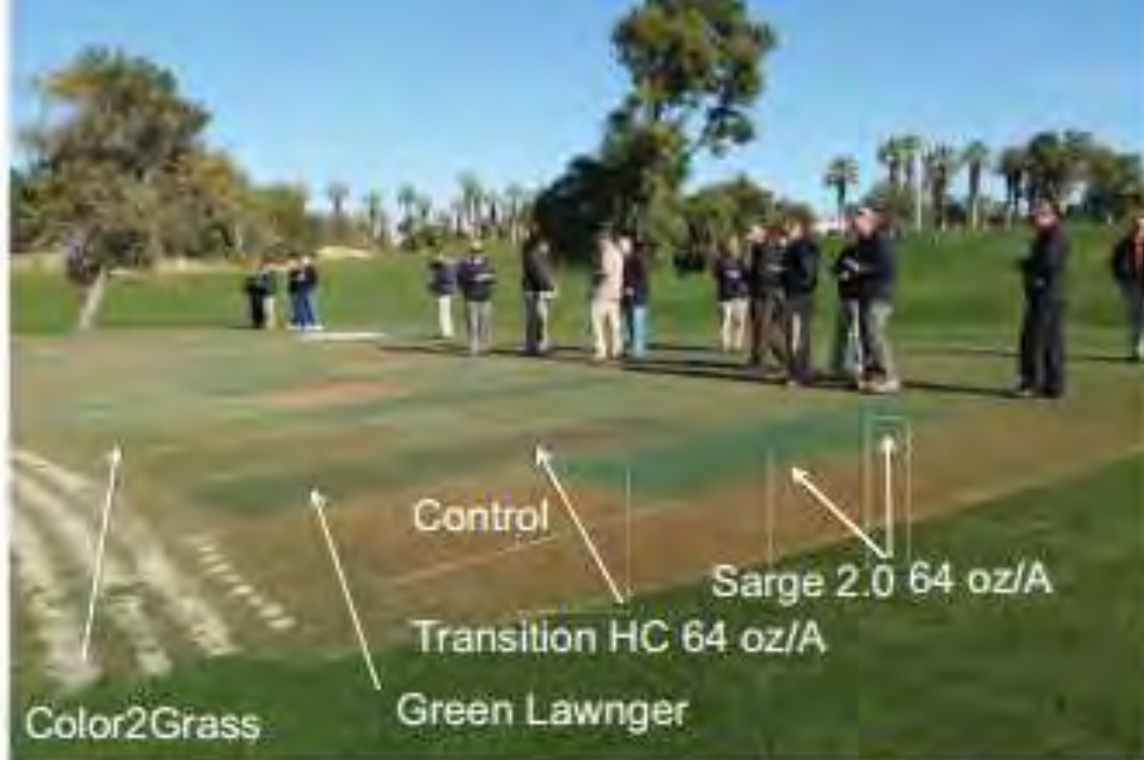


Photo from University of California Riverside Turf Colorant Study.
 Location: Marriott Desert Springs Resort, Palm Springs, California.
 Dr. Jim Baird, Turfgrass Specialist,

The two types of products usually used differently and not compared in the same study
 Note Summary
 Point #3



Summary

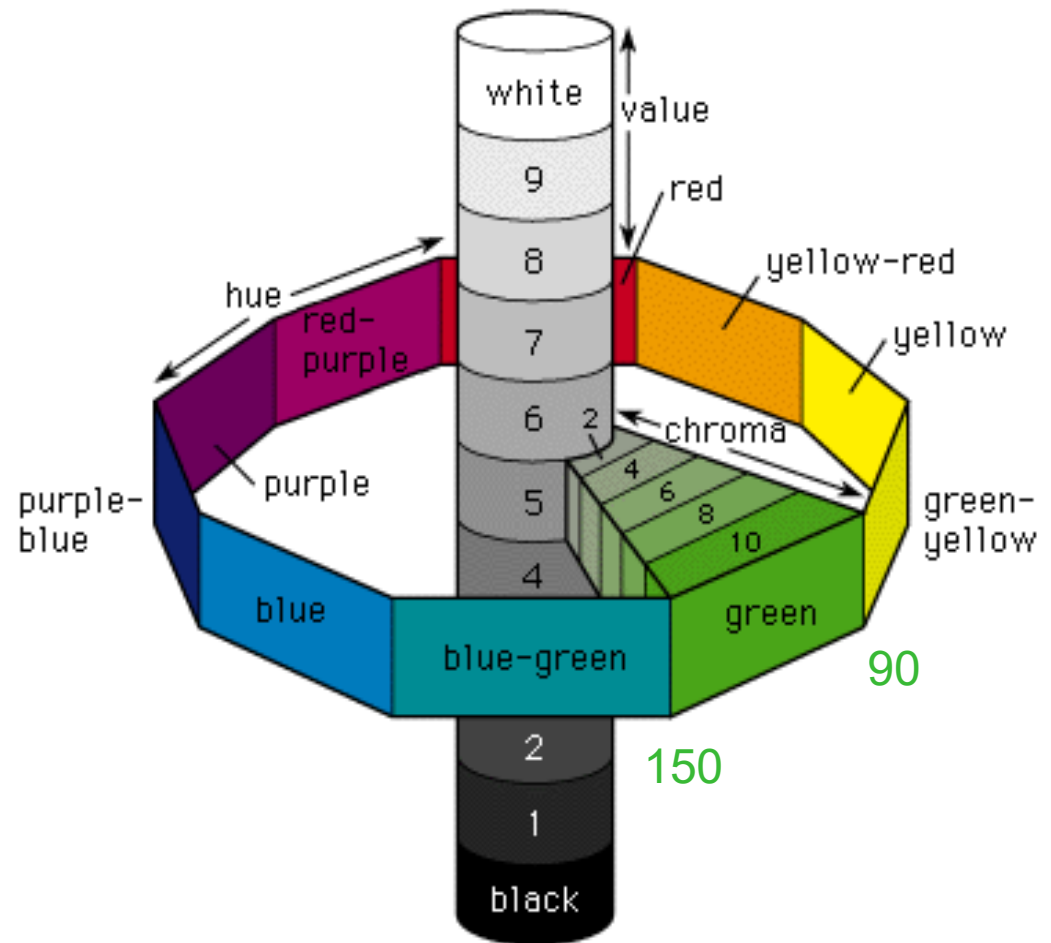
- › Nearly 100 different respondents over 4 locations.
- › Overall, most top 3 vote-getters:
 - 1. Sarge
 - 2. Green Lawngr
 - 3. Green Pig
 - 3. Color2Grass
 - 4. Transition HC
- › Ratings following applications of both paints and pigments favored paints.

Evaluating COLOR?

Hue

Saturation (chroma)

Brightness (value)



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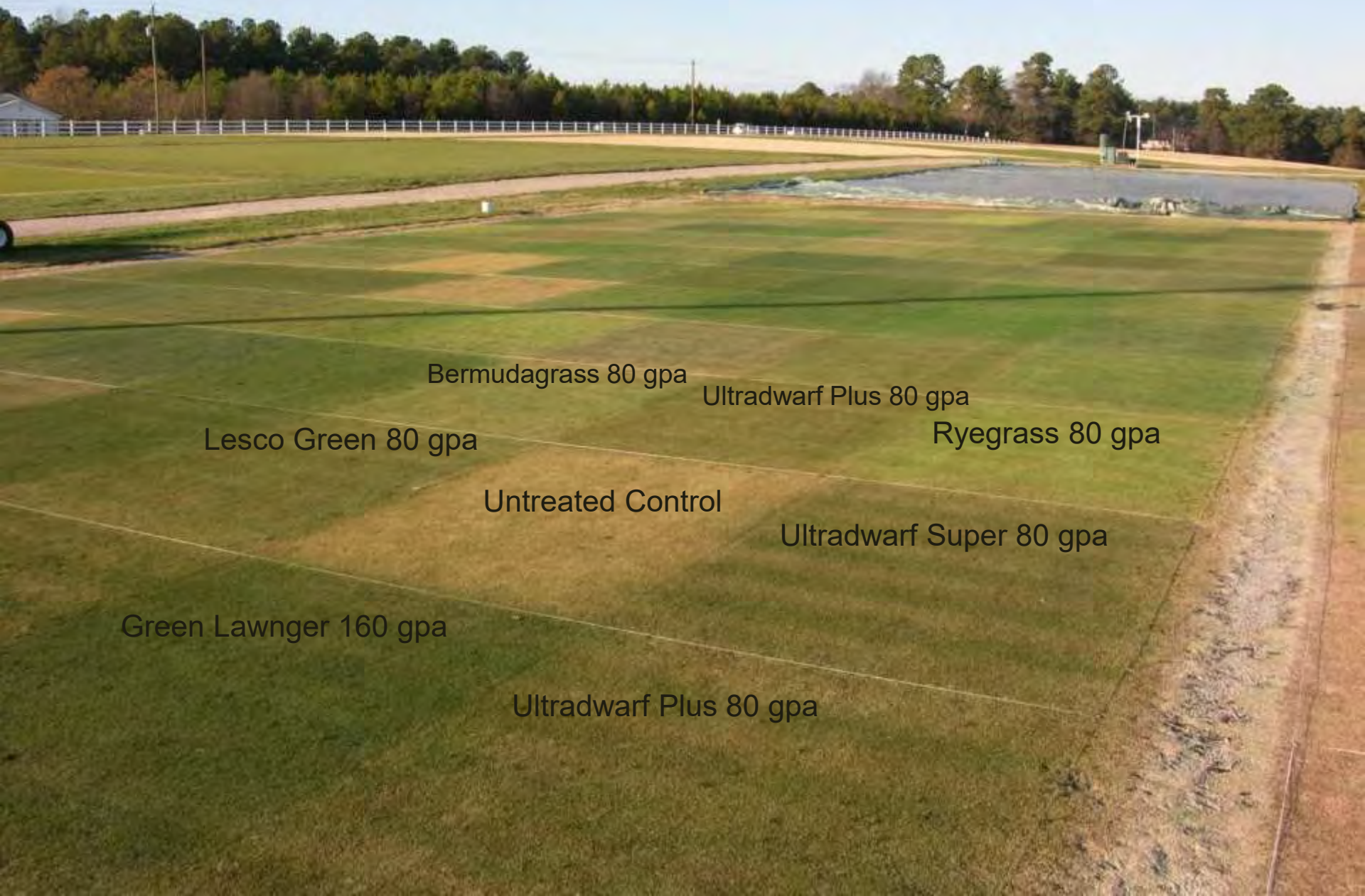
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Diamond Zoysiagrass

0 Days After Application



Bermudagrass 80 gpa

Ultradwarf Plus 80 gpa

Lesco Green 80 gpa

Ryegrass 80 gpa

Untreated Control

Ultradwarf Super 80 gpa

Green Lawnger 160 gpa

Ultradwarf Plus 80 gpa

Miniverde Bermudagrass

3 Days After Application

Untreated Control

SprayMax

Solarogen

Enviroseal Go Green

Endurant

Super Cover

Bermuda

Lineman

Ultradwarf Super

Southwestern

Southwest Green

LESCO Green

Green Lawnger

Regreen

Titan Green Turf

Turf Cote

Green Turf Dye

Sugar Hill Turf

Mtp Turfgreen

Blue

Original

Ultradwarf Plus

Graphics

Bermudagrass

Evergreen

Wintergreen Plus

Miniverde Bermudagrass

81 Days After Application

Untreated Control

SprayMax

Solarogen

Enviroseal Go Green

Endurant

Super Cover

Bermuda

Lineman

Ultradwarf Super

Southwestern

Southwest Green

LESCO Green

Green Lawnger

Regreen

Titan Green Turf

Turf Cote

Green Turf Dye

Sugar Hill Turf

Mtp Turfgreen

Blue

Original

Ultradwarf Plus

Graphics

Bermudagrass

Evergreen

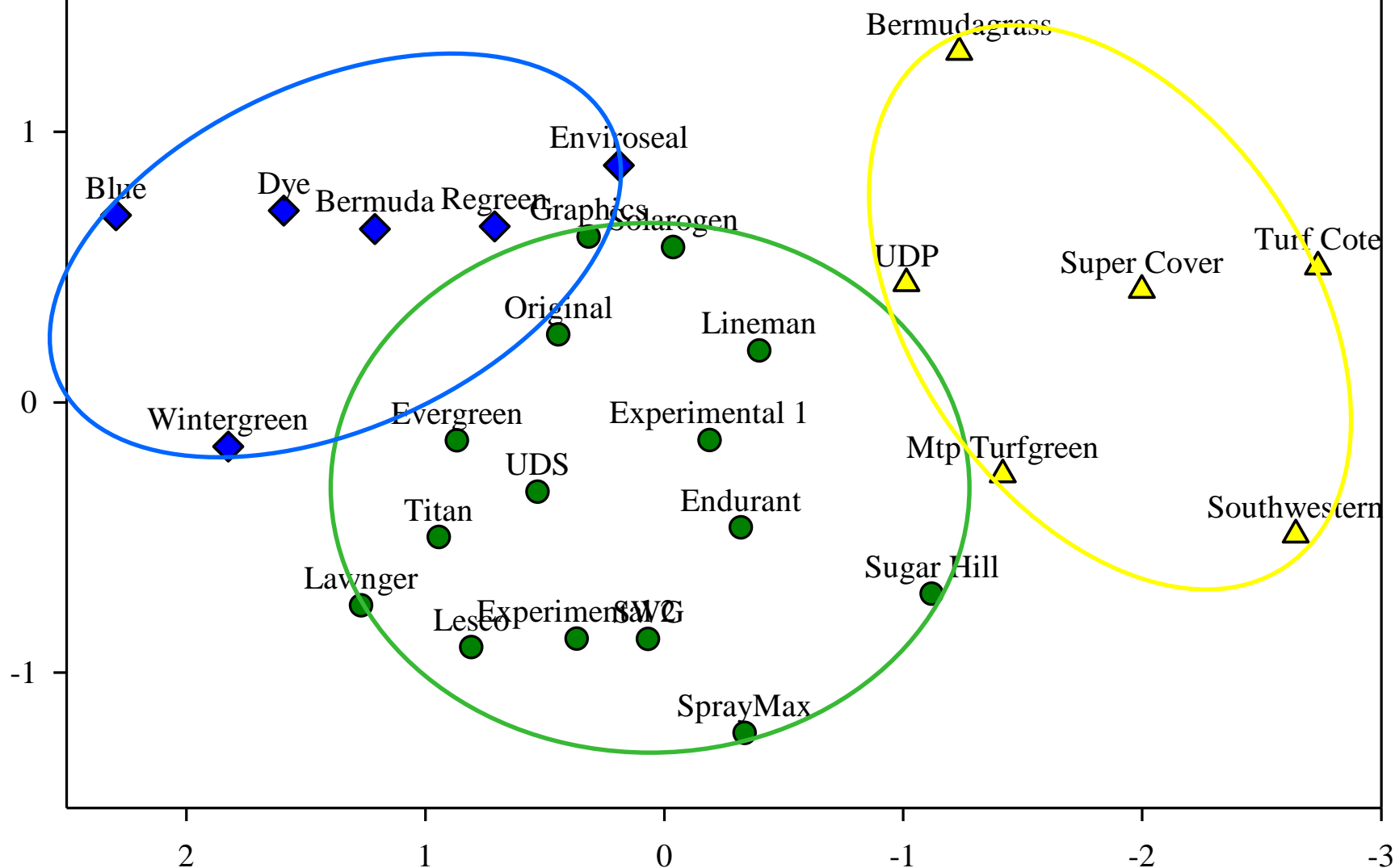
Wintergreen Plus

Conclusions

- **During evaluations, colorants could be separated into 3 groups.**
 - **Group 1 colorants maintained color and coverage longest. Although retained color best, poor color (blue or lime green) that would not be ideal for high valued turf use**
 - **Group 2 colorants provided the best natural green color. Reduced life but much better color.**
 - **Group 3 colorants provided the least amount of color. Provided minimal color after application and quickly faded.**

Miniverde colorant coverage, quality, hue over time

Dimension 2





Other Uses for Colorants

- In combination with overseeding
- To hide blemishes
- Provide short-term greening (aesthetics)
- To increase heat sink (for quicker transitioning) – IMO, not the best use

QUALI-PRO

Quality Turf & Ornamental Products

Know The Sign. Greater Than Or Equal To.

Foursome™

Spray Pattern Indicator

A unique formulation pigment additive designed to enhance and extend the aesthetic appearance of the turf site following a pesticide application. For use as a spray pattern indicator, Foursome helps promote uniform application of the pesticide, producing a more consistent turf response to the activity of the applied plant protectant.

Packaging 1 quart bottle (12 bottles per case)
Application Rates See label for specific uses and rates.
Signal Word Caution



A. Foursome on Creeping Bentgrass Putting Green.



B. FORT on Creeping Bentgrass Putting Green, treated with 4 oz./1000 (left) and 8 oz./1000 (center).



C. Left & Center - No Spray Pattern Indicator Applied. Right - Foursome on Creeping Bentgrass Putting Green.

2. COMPOSITION/INFORMATION ON INGREDIENTS

The composition of this material is a trade secret. Contains no other components or influence the classification with regard to human and environmental risk assessment

HAZARDOUS COMPONENTS	CAS NO.	%	OSHA PEL	ACGIH TLV	OTHER
Urea	57-13-6	4.6	NA	NA	NA

NA=not available

Liquid "Overseed"

By Todd Lowe, senior agronomist, Florida Region
January 11, 2011



Spray program with Foursome pigment (L), and without Foursome pigment (R).

Several frosts have occurred since the previous regional update, and temperatures have dropped into the upper 20's at night on a few occasions. These temperatures have caused warm season turf to stop growing and go off-color, especially on golf courses with increased golf cart traffic. Several winter management strategies were discussed in the previous regional update and can be reviewed by clicking on the link below.

http://www.usga.org/course_care/regional_updates/regional_reports/florida/Jack-Frost-Is-Already-Nipping--December-2010/



Transition HC

Turf Colorant



Day 1 (Tmt 1, 32 oz/A HC)



Day 68 (Tmt 1 – back, no tmt (3.3 g/A GL +32+16 oz HC)
(Tmt 2 – middle, no tmt [32+32+16+32 oz HC])
(Tmt 3 – fore, 32 oz [32+16 oz HC])

Day 68



Day 129









11/19/2010

Photo: Rob Vaughan





Photo: Rob Vaughan



Grady L. Miller
North Carolina State University
grady_miller@ncsu.edu

Questions?