



# ***Turf Colorants for California***

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# Why Use a Turf Colorant?

- Maintain green color during winter dormancy
- Avoid inputs associated with overseeding
  - Labor, green waste, seed, water, chemicals, bermuda sod, etc.
- Divot mix
- Enhancer for television, special events
- Concealer for turf blemishes...death
- Increase surface temperature for germination and establishment

# Are all turf colorants the same?

- ▶ Dyes
  - ▶ e.g., spray indicators
  - ▶ Soluble and will stay in solution
- ▶ Pigments
  - ▶ Soluble, but will settle without agitation
  - ▶ Reapplication usually required every 1-2 wks
- ▶ Pigments with Resin
  - ▶ “Paints”
  - ▶ Greater longevity, typically one and done

# What Color is Your Turf Colorant?



# UCR Turf Colorant Study Locations

- ▶ Monarch Bay GC, San Leandro
  - ▶ Seashore Paspalum fairway
- ▶ Empire Ranch GC, Folsom
  - ▶ Poa/bentgrass putting green
- ▶ Jim Baird's Home Lawn, Riverside
  - ▶ Common bermudagrass
- ▶ Marriott Desert Springs Resort, Palm Springs
  - ▶ TifEagle bermudagrass putting green

## UCR Turf Colorant Study - General Conditions

- Study Duration: 5 Nov 2012 to 16 Jan 2013
- CO<sub>2</sub>-powered backpack boom sprayer with TeeJet VS8004 nozzles
- Spray Volume: 2 gal/M
- Plot Size: 4-ft width x 8 to 16-ft length
- 3 replications
- Plots were rated by golfers, golf staff, industry representatives, neighbors, friends, colleagues

# Application of colorants at Monarch Bay GC



# UCR Turf Colorant Study – Score Card



**Turf Colorant Study** Golf Course: \_\_\_\_\_ Date: \_\_\_\_\_

Gender: \_\_\_\_\_ Occupation: \_\_\_\_\_ Index (or average 18-hole score): \_\_\_\_\_

Rate each plot individually from 1 (strongly dislike/disagree) to 5 (strongly like/agree):

Color matches same turf outside of study area (How realistic is this color to natural turf?)

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
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Personal Color Preference

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
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⊕ Collectively, identify your top three favorite plots by designating 1, 2, and 3

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
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## Monarch Bay GC Treatments

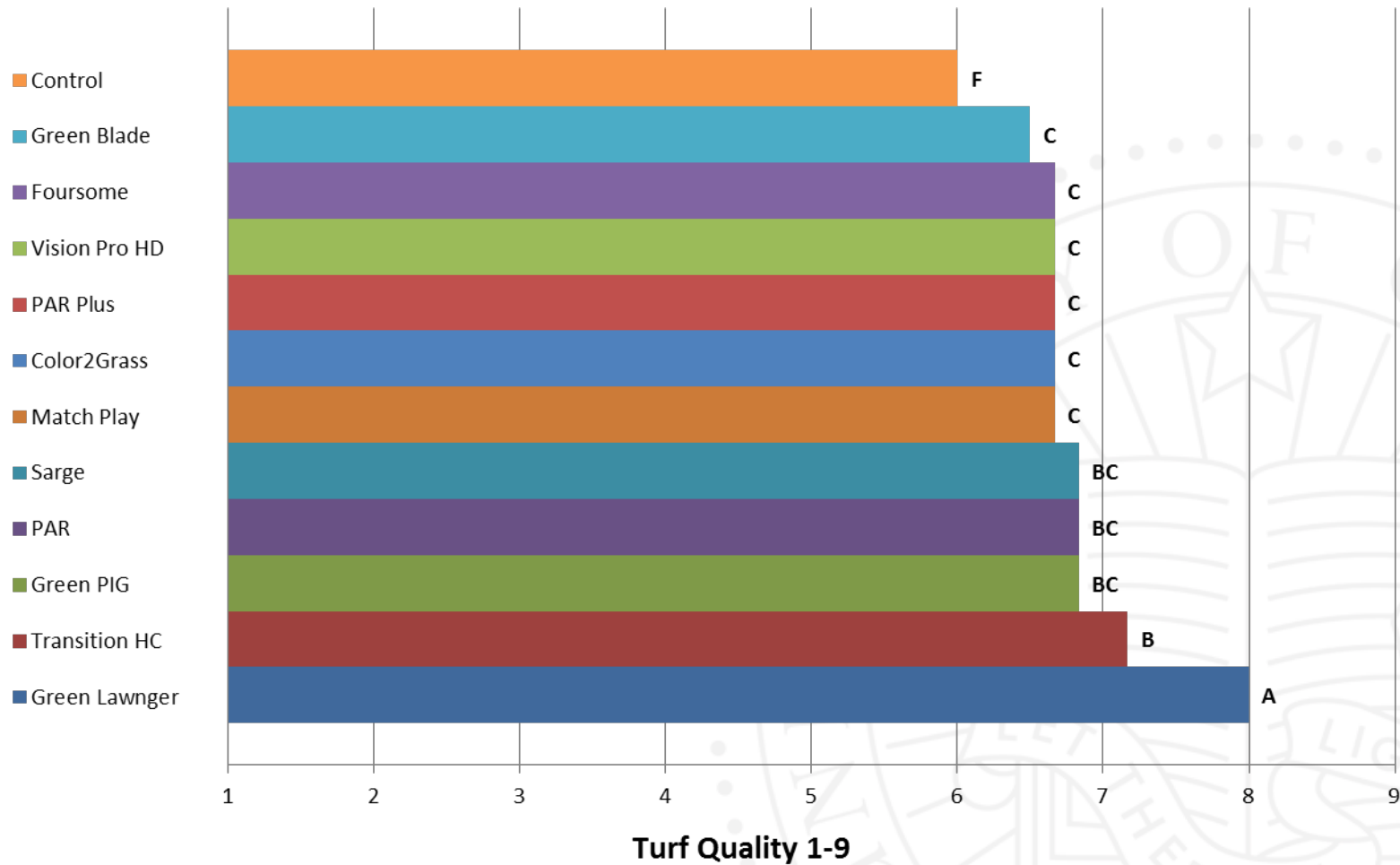
Product	Company	Type	Rate	Timing
Untreated Control	--	--	--	--
Green Lawngr	Becker Underwood	Pigment with Resin	10 gal/A	A
Match Play	Pioneer Athletics	Pigment with Resin	1:15 (v/v)	A
Color2Grass	Enviroseal Corporation	Pigment with Resin	1:15 (v/v)	A
Green PIG PAR	Grigg Brothers Simplot	Pigment	16 oz/A 16 oz/A	A A
Green Blade	PROKoZ	Pigment	20 oz/A	B
Green PIG	Grigg Brothers	Pigment	16 oz/A	AB
PAR	Simplot Partners	Pigment	16 oz/A	AB
PAR Plus	Simplot Partners	Pigment	16 oz/A	AB
Sarge	Numerator Technologies	Pigment	32 oz/A	AB
Vision Pro HD	Becker Underwood	Pigment	32 oz/A	AB
Transition HC	Becker Underwood	Pigment	64 oz/A	AB
Foursome	Makhteshim Agan	Pigment	20 oz/A	AB

A = 5 November 2012

B = 20 November 2012 (rates quadrupled; pigments only)

# Turf Quality Ratings made by Researchers (before application)

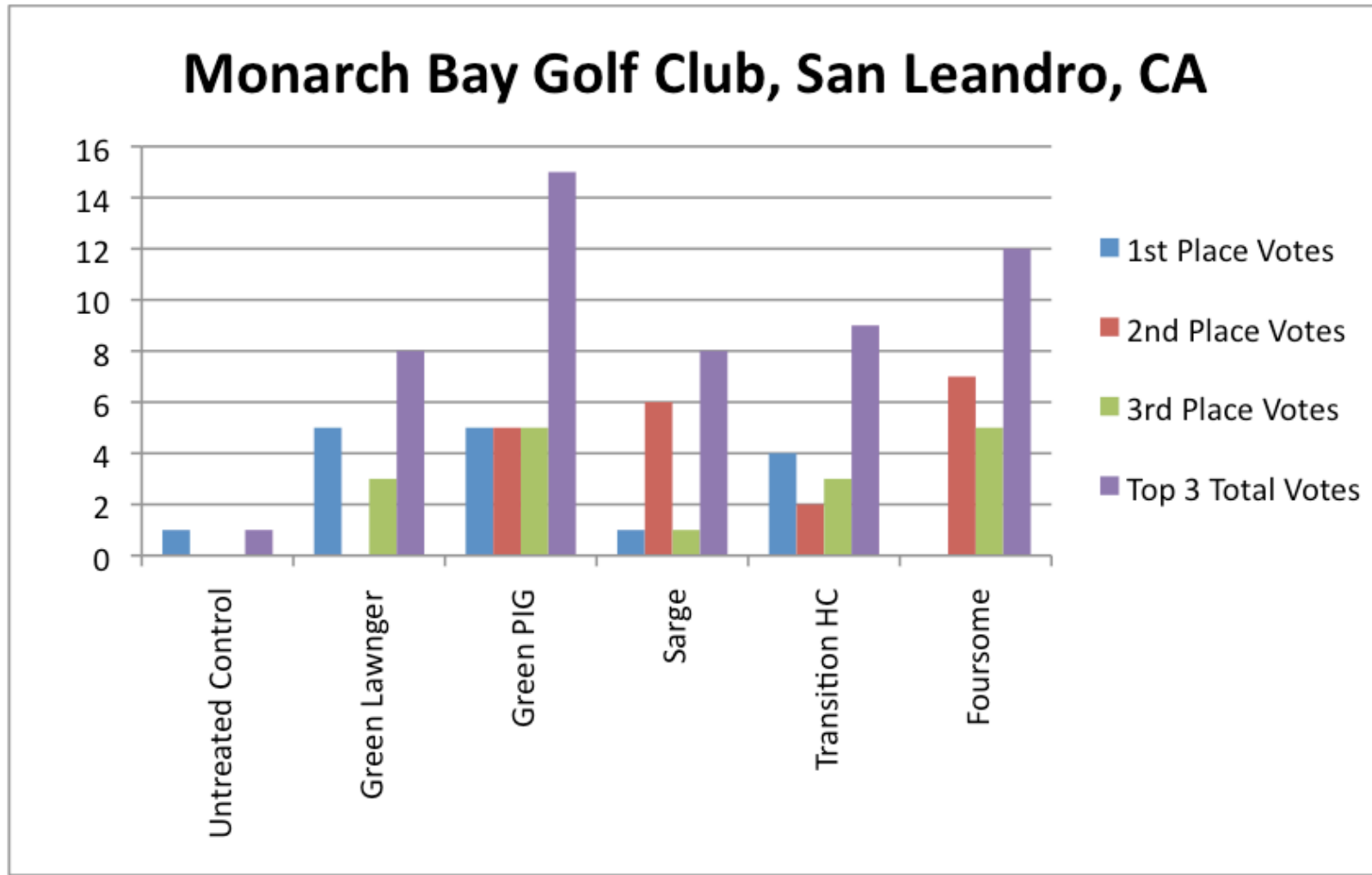
Monarch Bay Turf Quality 11-20-12



# Monarch Bay GC (after application on 20 Nov 2012)



# Top Performers



## Monarch Bay GC (20 Nov 2012)



Green PIG  
(after 4x application)

# Monarch Bay GC Results

- Seashore Paspalum turf did not go dormant during evaluation period.
- 1x rates of pigments showed only marginal color effects after initial application; thus, 4x rates were applied two weeks later.
- Effects of one-time application of pigments with resin (recommended by manufacturers) wore off due to extended warm temperatures and mowing into late fall.

# Empire Ranch GC

Product	Company	Type	Rate	Timing
Untreated Control	--	--	--	--
Green Lawngr	Becker Underwood	Paint	10 gal/A	AC
Match Play	Pioneer Athletics	Paint	1:15 (v/v)	AC
Color2Grass	Enviroseal Corporation	Paint	1:15 (v/v)	AC
Green Blade	PROKoZ	Pigment	20 oz/A	ABC
Green PIG	Grigg Brothers	Pigment	16 oz/A	ABC
PAR	Simplot	Pigment	16 oz/A	ABC
PAR Plus	Simplot	Pigment	16 oz/A	ABC
Sarge	Numerator Technologies	Pigment	32 oz/A	ABC
Vision Pro HD	Becker Underwood	Pigment	32 oz/A	ABC
Transition HC	Becker Underwood	Pigment	64 oz/A	ABC
Foursome	Makhteshim Agan	Pigment	20 oz/A	ABC

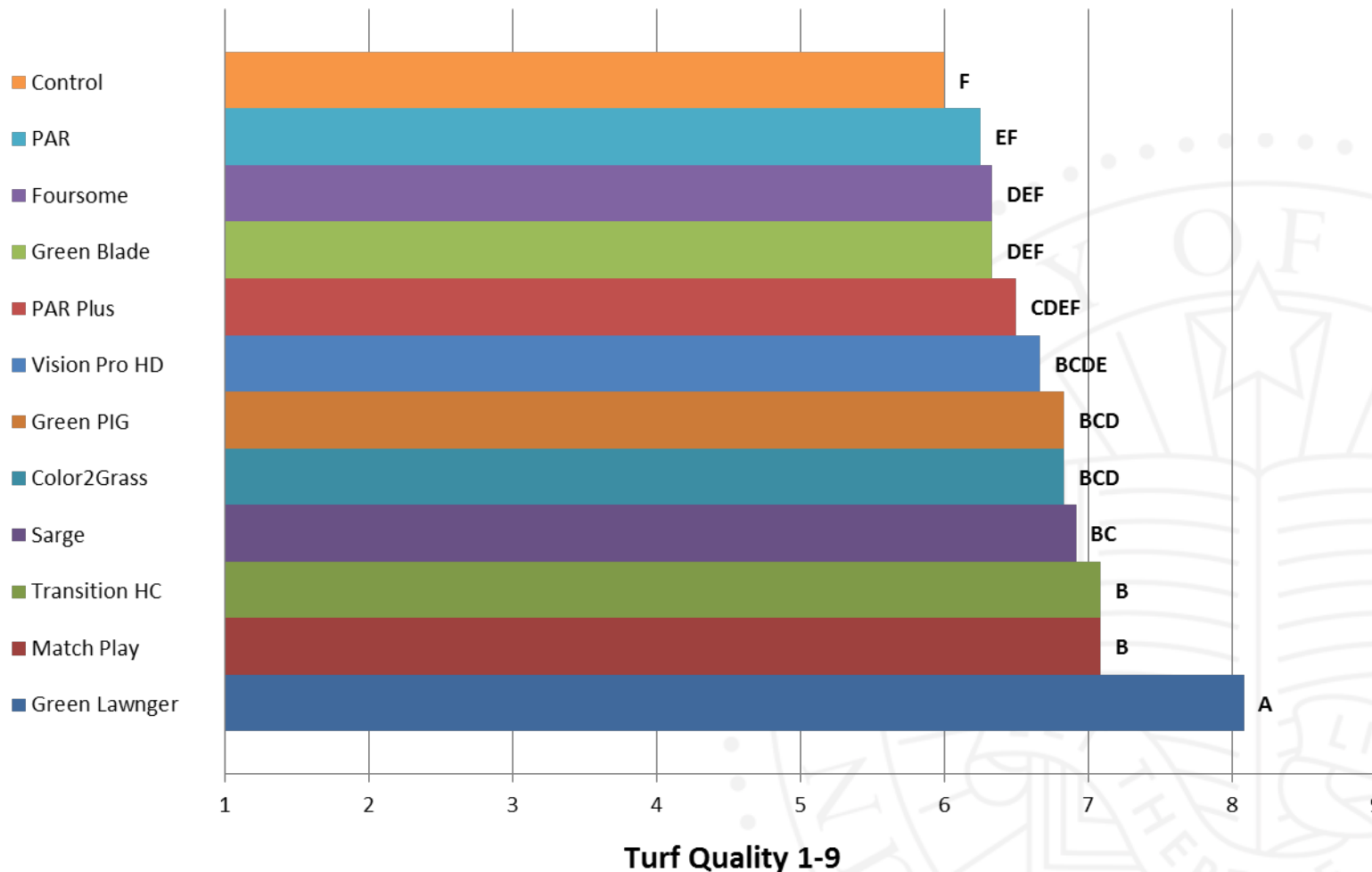
A = 6 November 2012 (1x rate)

B = 19 November 2012 (2x rate)

C = 3 December 2012 (1x rate)

# Turf Quality Ratings made by Researchers

Empire Ranch Turf Quality 11-19-12



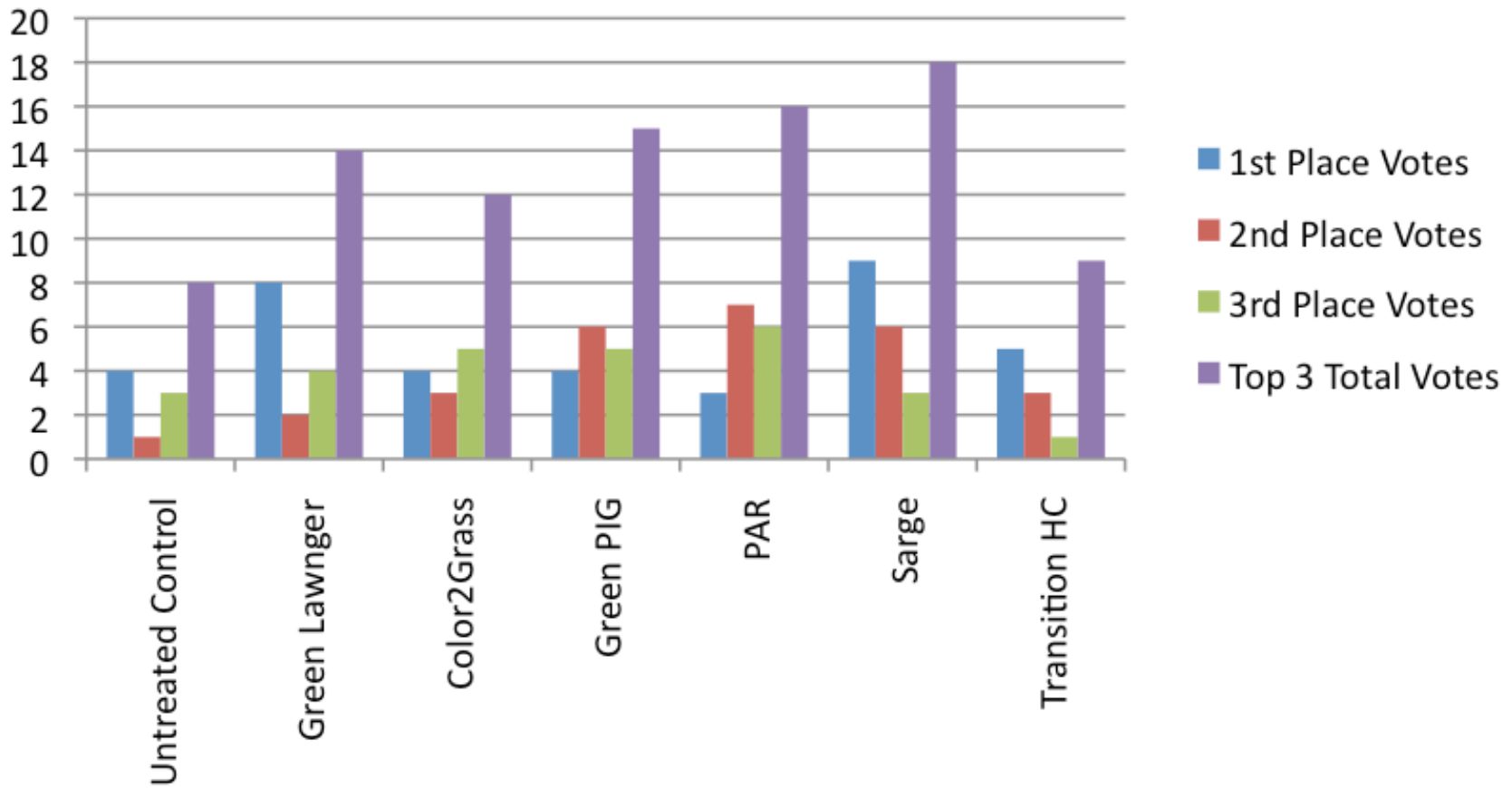


# **Empire Ranch GC (after application on 3 Dec 2012)**

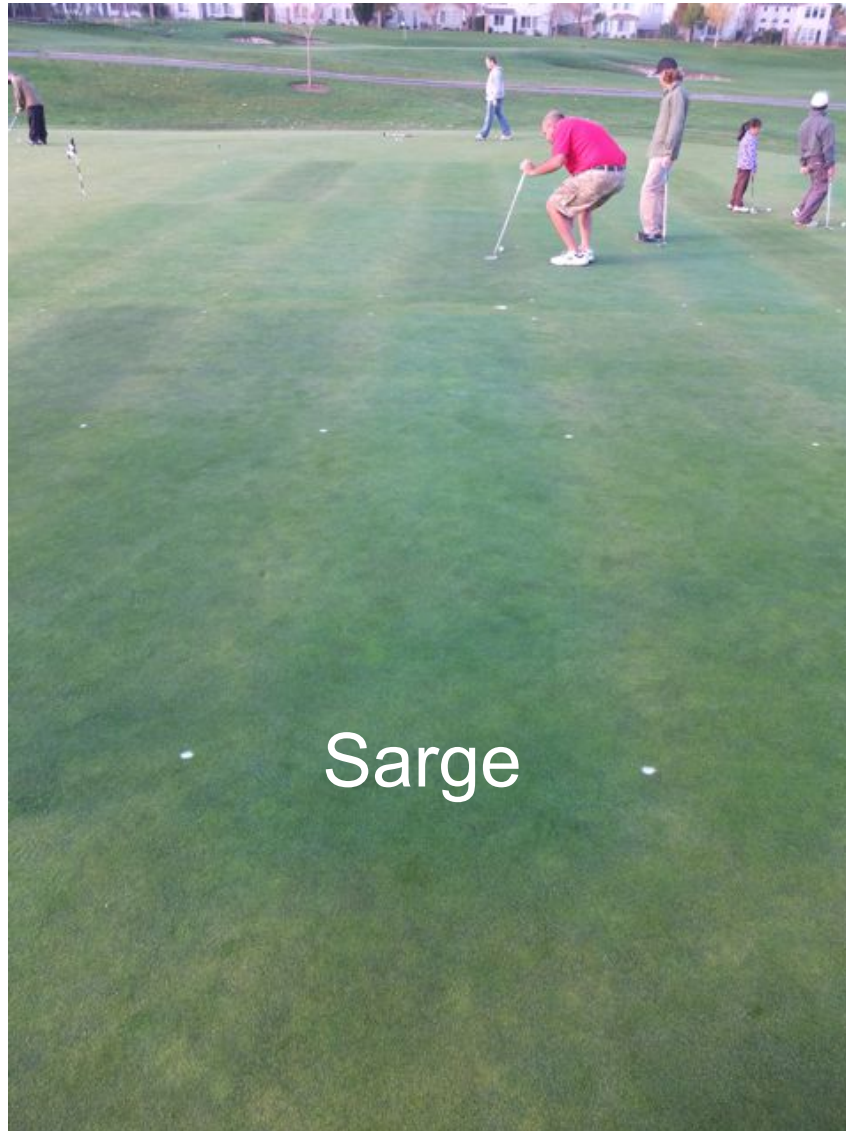


# Top Performers

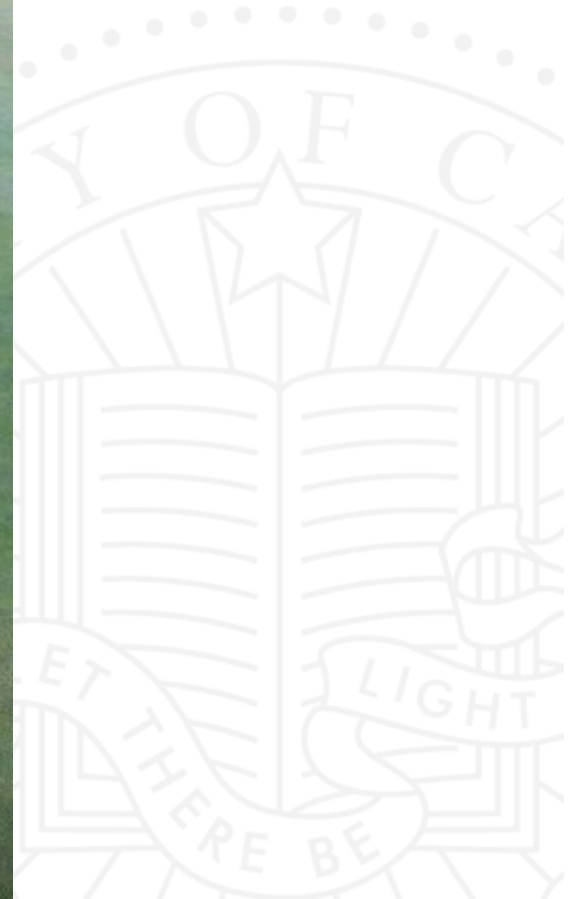
## Empire Ranch Golf Club, Folsom, CA



Empire Ranch GC  
(after application on 3 Dec 2012)



Sarge



# Empire Ranch GC Results

- Poa/bent turf did not go dormant or off-color during evaluation period.
- 1x rates of pigments showed only marginal color effects after initial application; thus, 2x rates were applied two weeks later.
- All treatments were applied at 1x on 3 Dec 2012 due to extended warm temperatures and mowing into late fall.

# Jim's Home Lawn

Product	Type	Company	Rate	Timing
Control	--	--	--	--
Green Lawnger	Pigment with Resin	Becker Underwood	10 gal/A	A
Match Play	Pigment with Resin	Pioneer Athletics	1:15 (water)	A
Color2Grass	Pigment with Resin	Enviroseal Corp.	1:15	A
Green PIG	Pigment	Grigg Bros.	32 oz/A	A
PAR	Pigment	Simplot	32 oz/A	A
PAR Plus	Pigment	Simplot	32 oz/A	A
Sarge	Pigment	Numerator Technologies	64 oz/A	A
Vision PRO HD	Pigment	Becker Underwood	64 oz/A	A
Transition HC	Pigment	Becker Underwood	128 oz/A	A

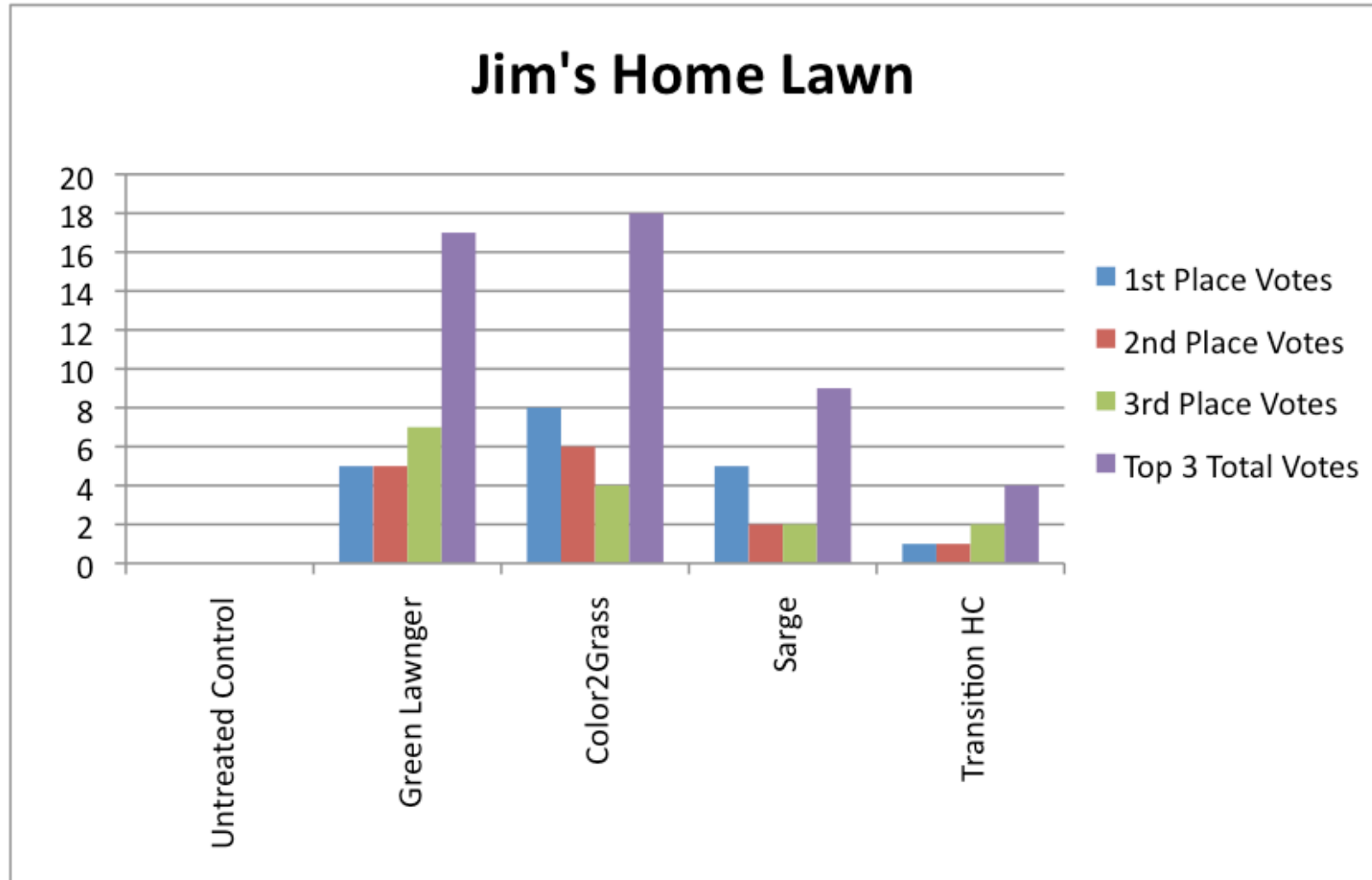
A = 18 November 2012

Plots sprayed at 4x rate

# Jim's Home Lawn (18 Nov 2012)



# Top Performers



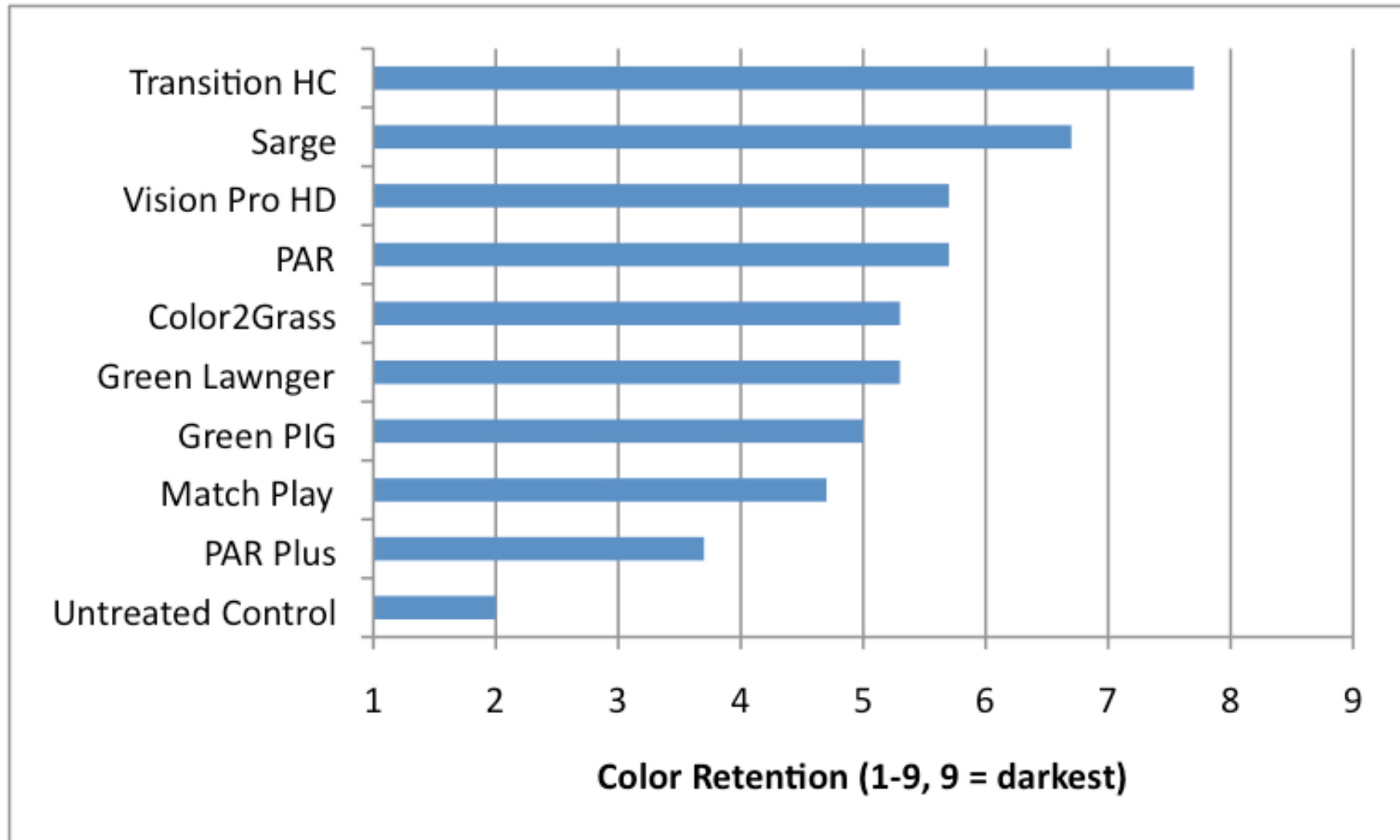
# Jim's Home Lawn

## 2 Dec 2012

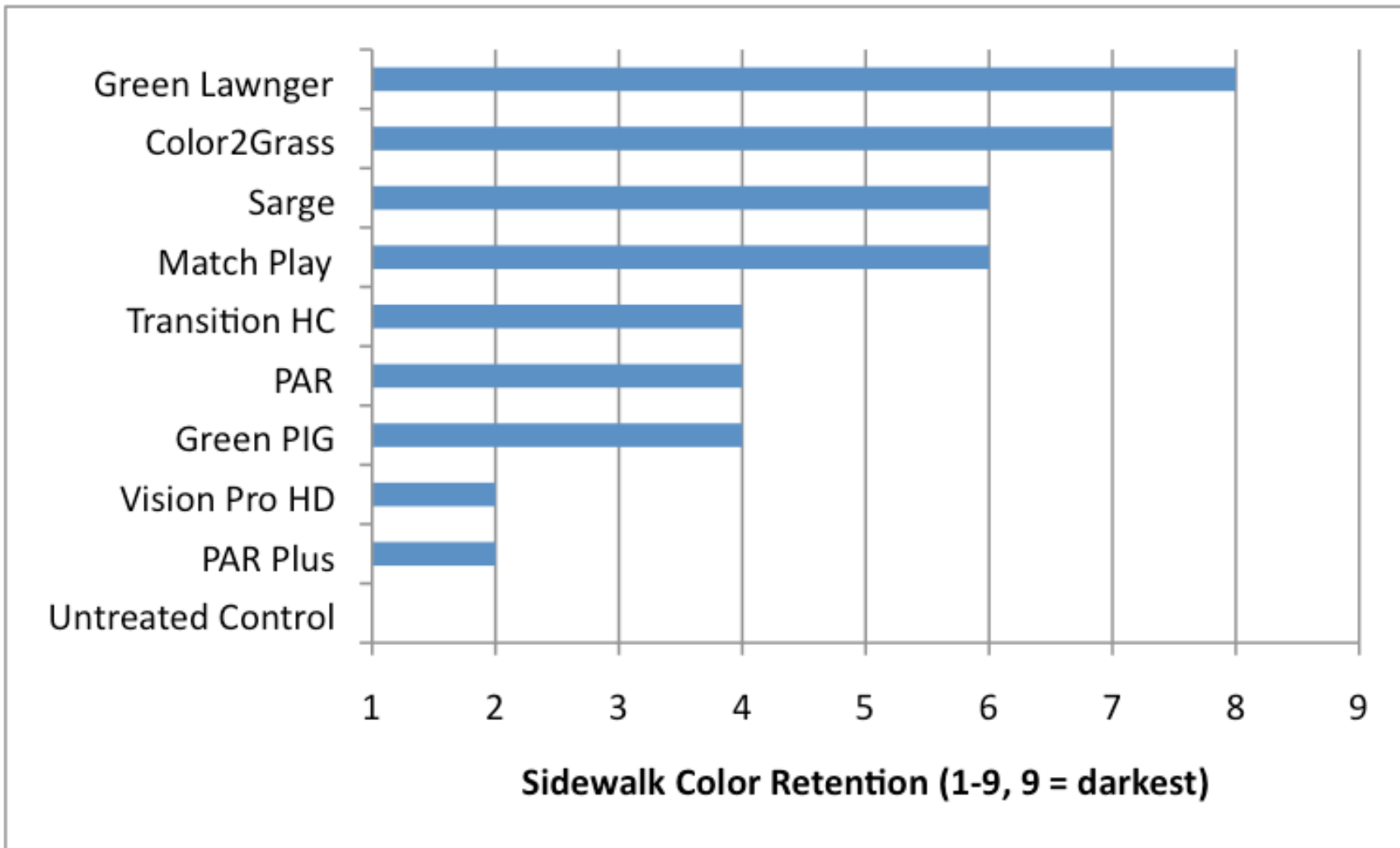




# Jim's Home Lawn (6 Jan 2013)



# Jim's Home Lawn (6 Jan 2013)





## **Jim's Sidewalk (18 Nov 2012)**



## **Jim's Sidewalk (2 Dec 2012)**

## Jim's Home Lawn Results

- ▶ Turf was scalped to achieve uniform dormancy (brown color) before application.
- ▶ 4x rates of colorants were required to achieve acceptable color on dormant (brown) turf.
- ▶ Longevity of Sarge on turf (and concrete) may be related to added ingredients and top performance at all study locations.
- ▶ Turf colorants, especially paints, should be washed off immediately from sidewalks and other non-turf surfaces.

# Marriott Desert Springs

Product	Type	Company	Rate	Timing
Control	--	--	--	--
Green Lawngrer	Pigment with Resin	Becker Underwood	10 gal/A	ACD
Match Play	Pigment with Resin	Pioneer Athletics	1:15 (water)	ACD
Color2Grass	Pigment with Resin	Enviroseal Corp.	1:15	ACD
Green PIG	Pigment	Grigg Bros.	16 oz/A	ABCD
Green PIG	Pigment	Grigg Bros.	32 oz/A	ABCD
PAR	Pigment	Simplot	16 oz/A	ABCD
PAR	Pigment	Simplot	32 oz/A	ABCD
PAR Plus	Pigment	Simplot	16 oz/A	ABCD
PAR Plus	Pigment	Simplot	32 oz/A	ABCD
Sarge	Pigment	Numerator Technologies	32 oz/A	ABCD
Sarge	Pigment	Numerator Technologies	64 oz/A	ABCD
Vision PRO HD	Pigment	Becker Underwood	32 oz/A	ABCD
Vision PRO HD	Pigment	Becker Underwood	64 oz/A	ABCD
Transition HC	Pigment	Becker Underwood	64 oz/A	ABCD
Transition HC	Pigment	Becker Underwood	128 oz/A	ABCD

A = 16 November 2012

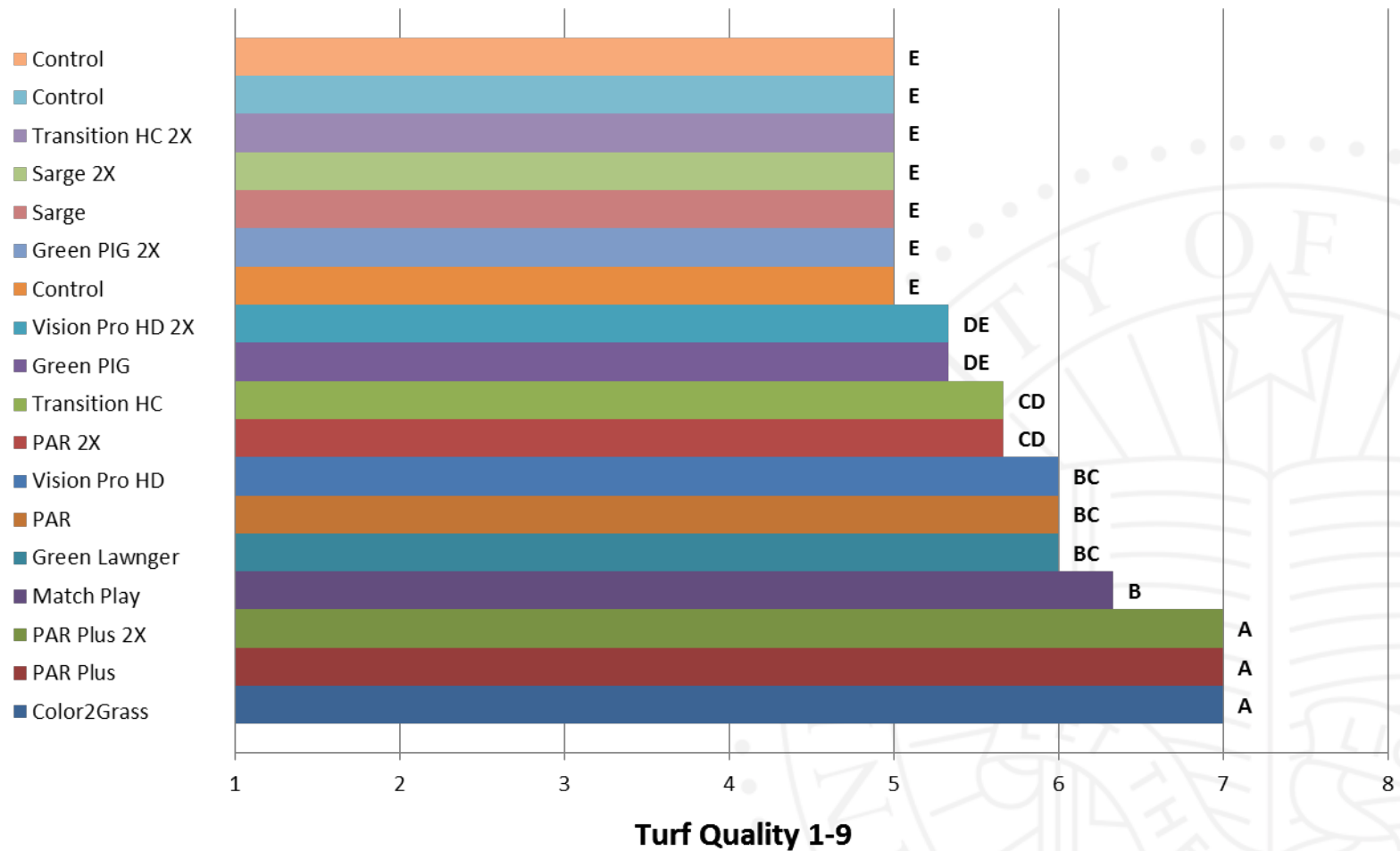
B = 30 November 2012 (pigments only)

C = 14 December 2012

D = 11 January 2013

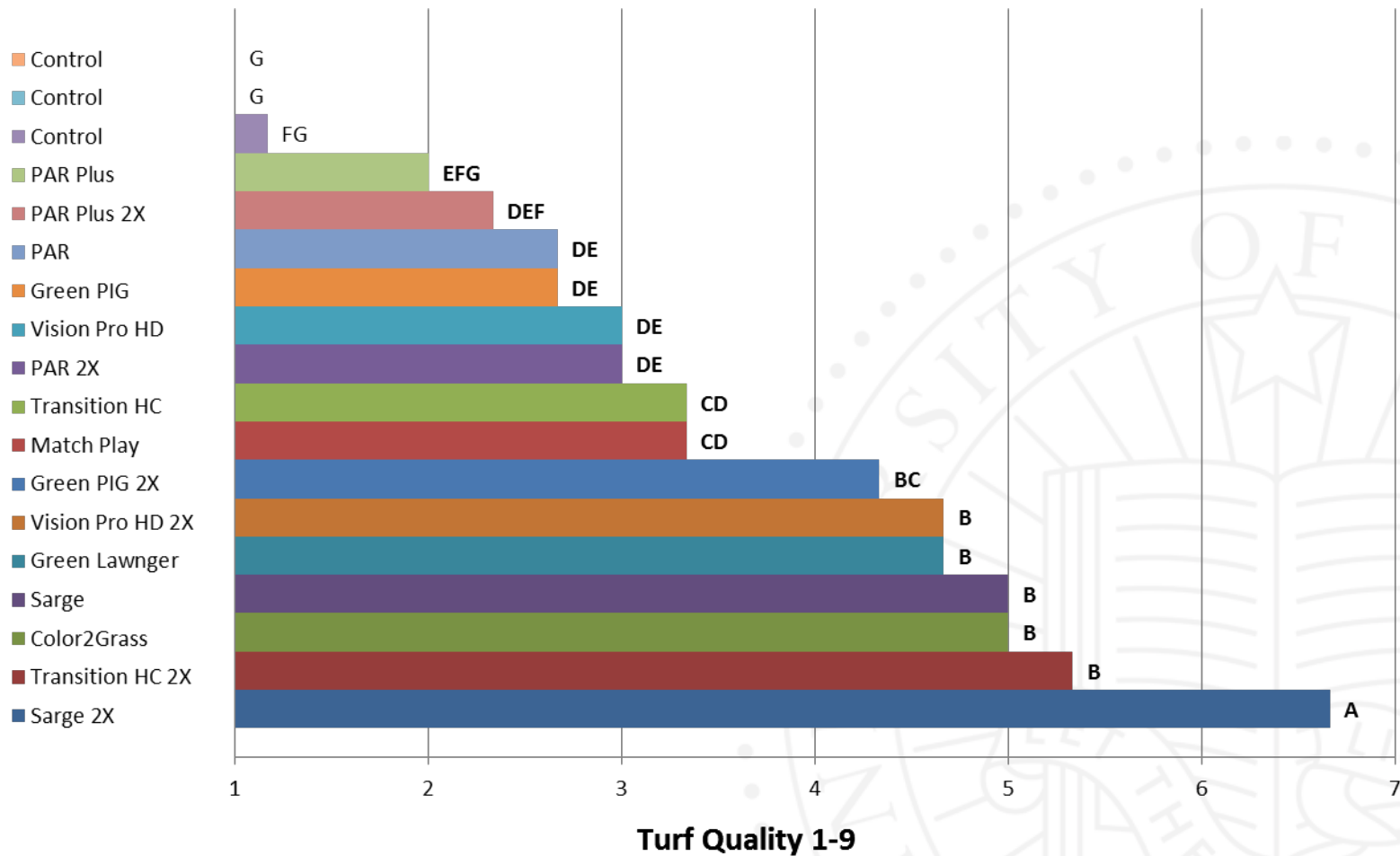
# Researcher Ratings Before Full Dormancy

Marriott Desert Springs Turf Quality 12-14-12



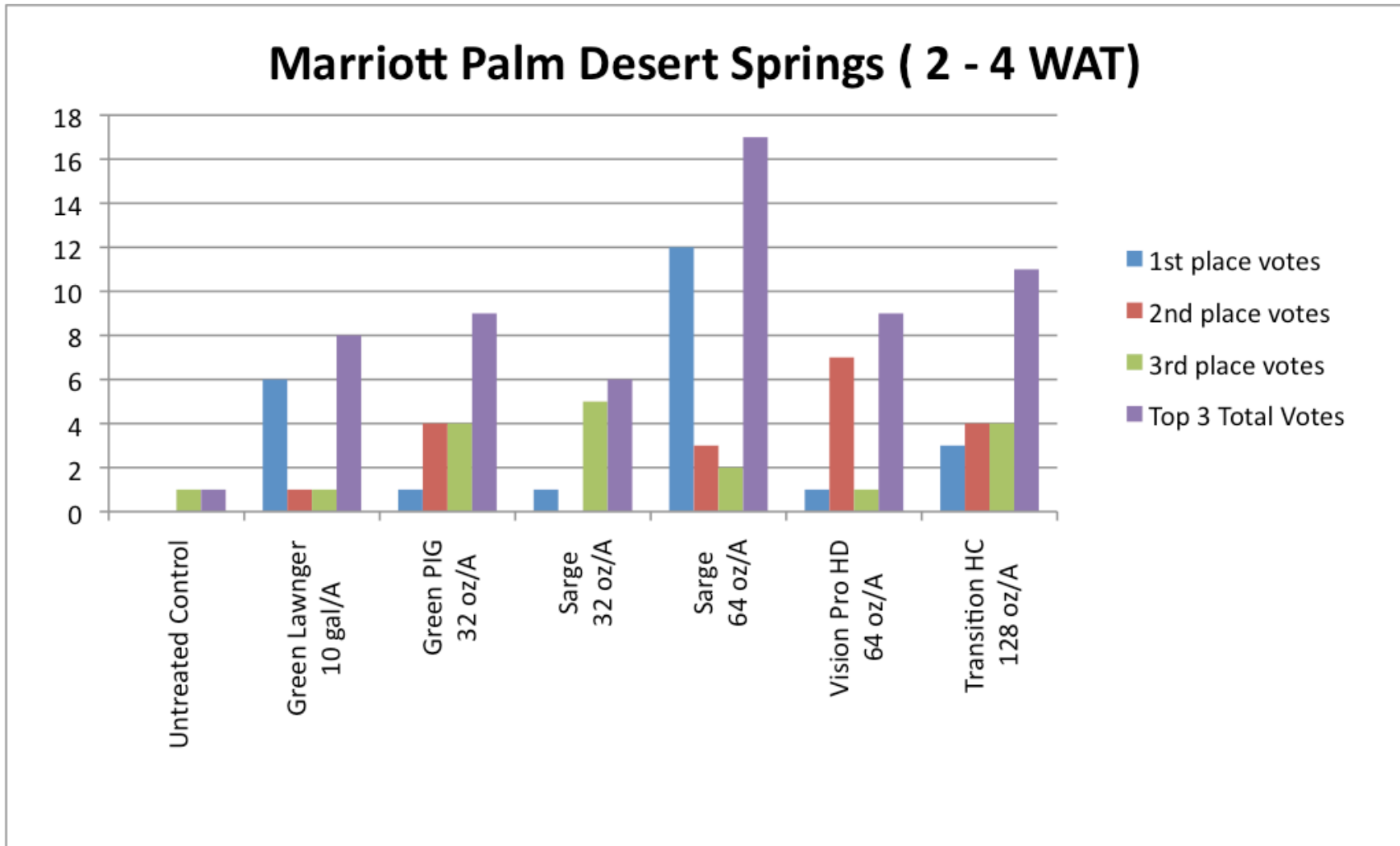
# Researcher Ratings During Dormancy

Marriott Desert Springs Turf Quality 12-31-12

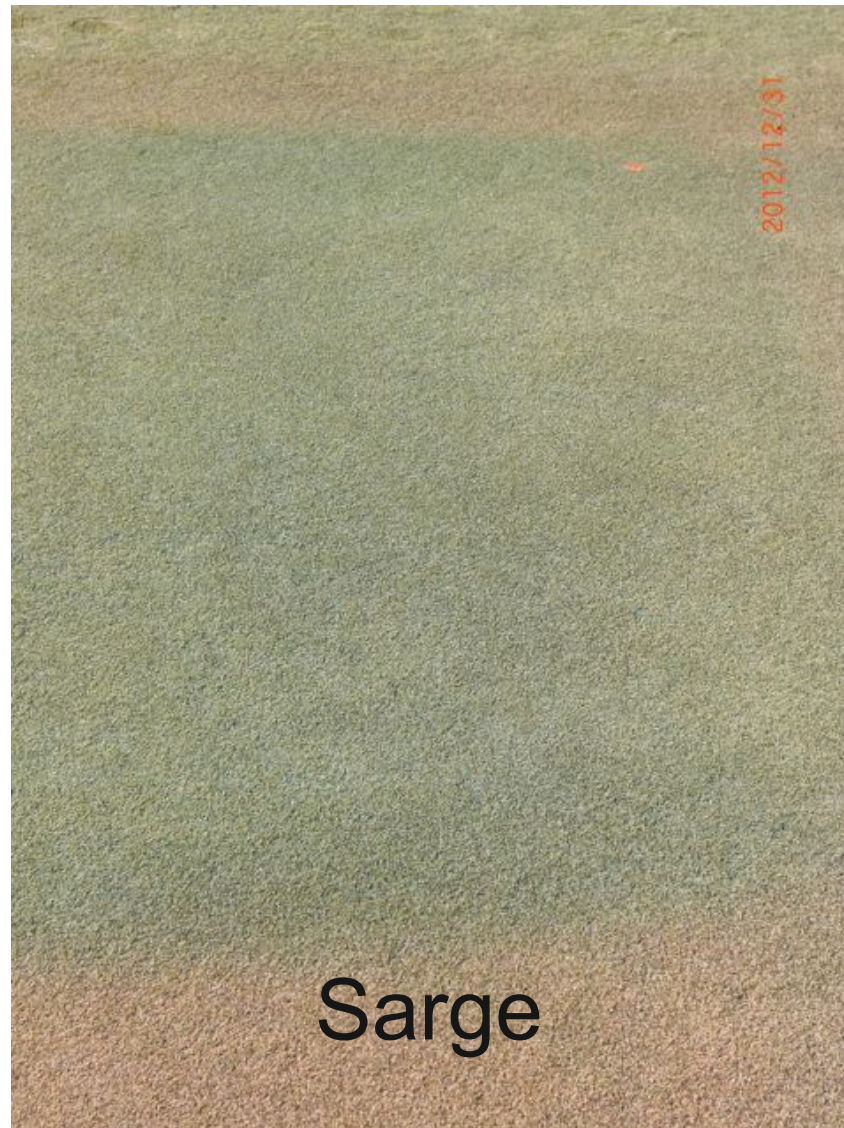




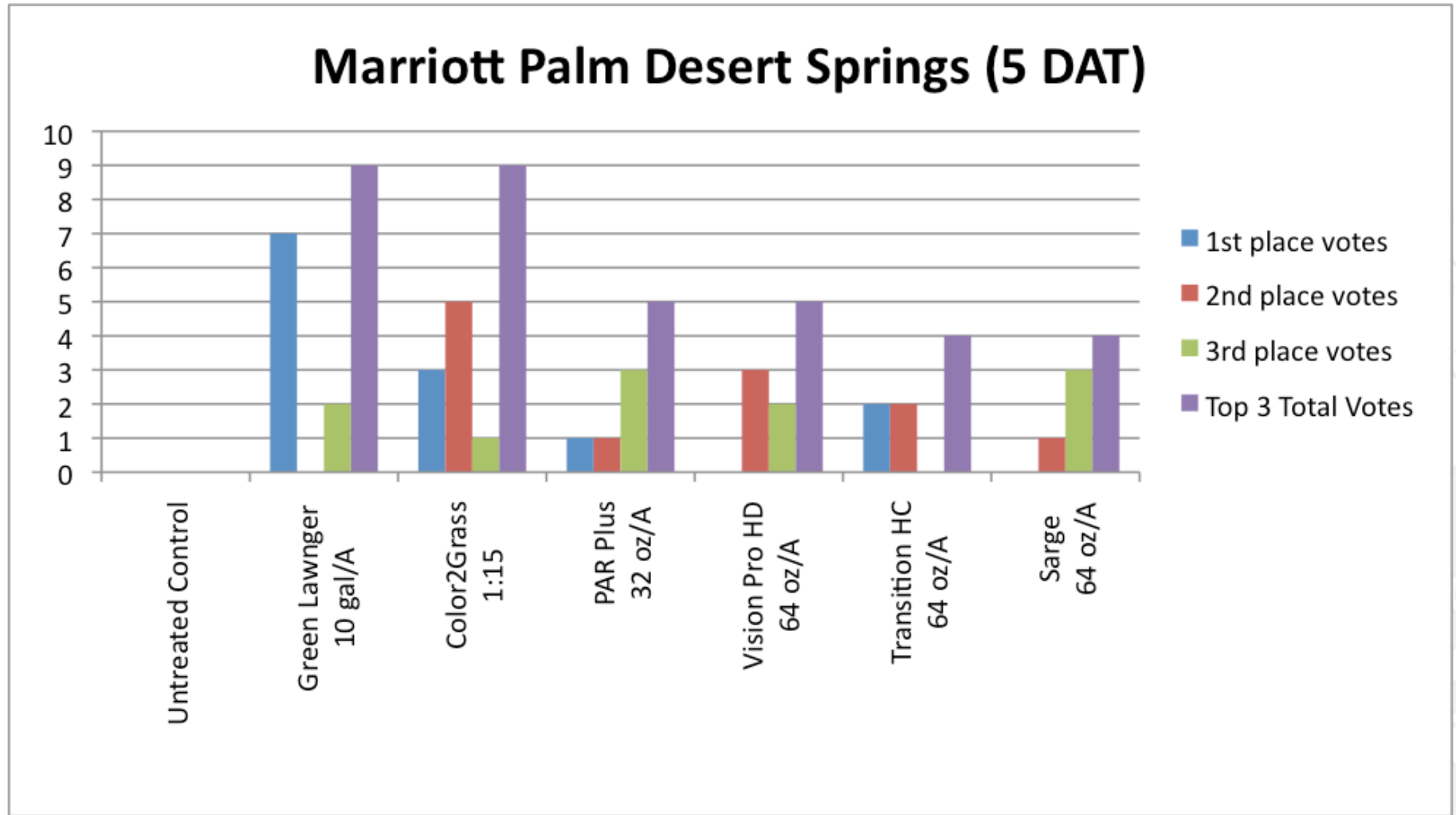
## Top Performers (rated between 31 Dec 2012 and 10 Jan 2013)



# Marriott Desert Springs (31 Dec 2012)



# Top Performers (rated 16 Jan 2013)



# Marriott Desert Springs (16 Jan 2013)



# Marriott Desert Springs Results

- This was only study site where we were able to achieve application of colorants in transitioning from non-dormant to dormant turf.
- Colorants appear differently depending on whether or not the turf is dormant at the time of application.
- Generally, higher (2x) rates of pigments preferred over 1x rates.

# Summary

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

# Summary

- Label rate is likely not enough to achieve desired color.
- Start applications before dormancy or as much as 4x rate needed on brown or dormant turf.
- If mowing, more frequent applications are likely necessary, including paints.
- Up to 5°F surface temperature increase following application, but short-lived and no significant differences among colorants tested.

# Summary

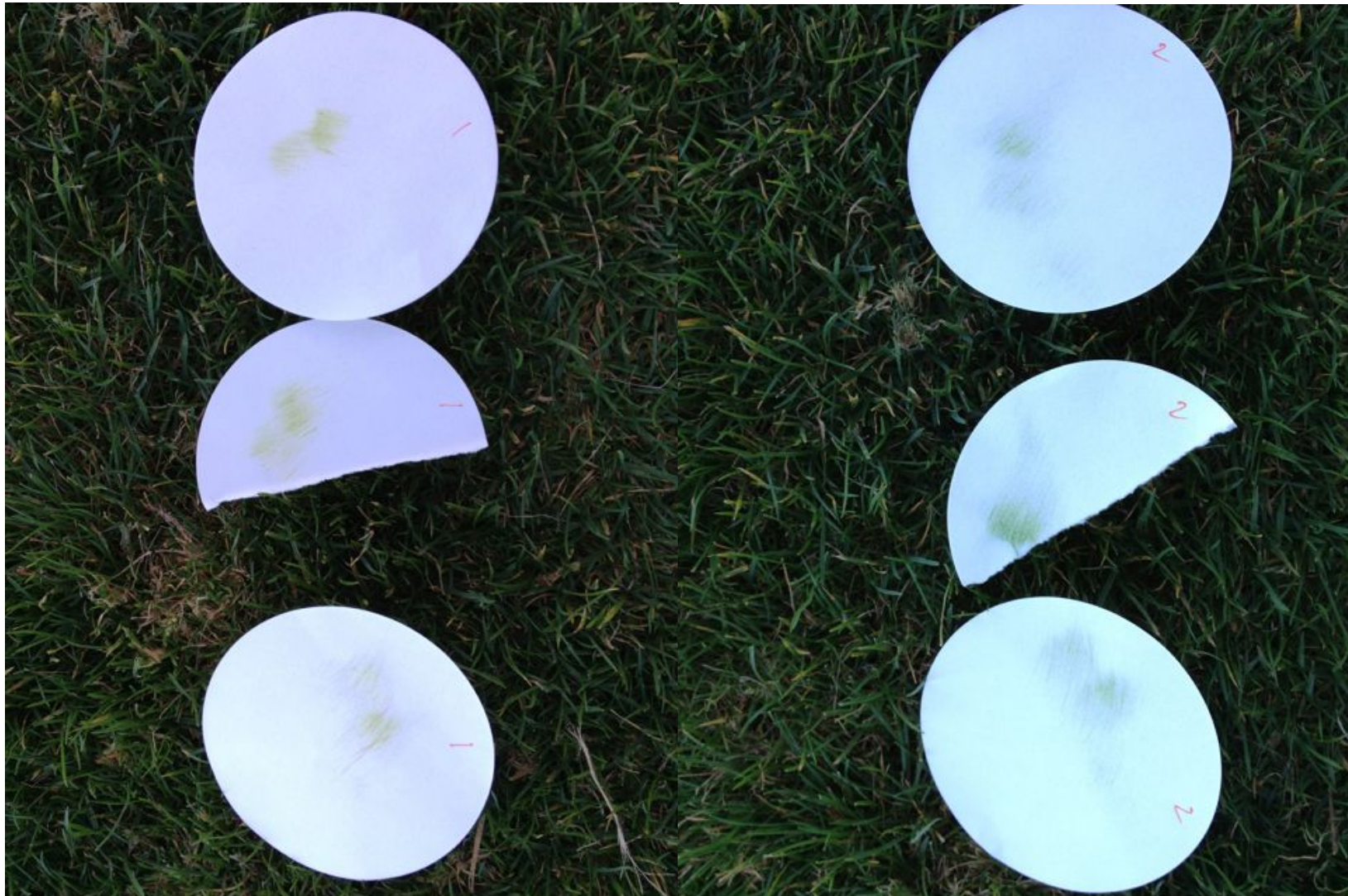
- Avoid sidewalks or wash immediately.
- Spray equipment and everything else associated with application are going to turn green.
- Colorants work best on monostands of a turfgrass species rather than mixed stands of warm- and cool-season grasses.
- Drying time 1-2 hours under optimal conditions. No significant differences found among treatments, although paints tend to take longer to dry.



## Colorfastness (filter paper rubbed 5x 1-2 h after application)

Control

Green Lawngr



# Summary

- › Colorants tested can be categorized into 3 hues:
  - › Blue-Green
    - › PAR, Sarge, Green PIG, Foursome, Green Blade
    - › Look best and most realistic when applied on green turf before turning dormant or brown
  - › Yellow-Green
    - › Color2Grass, Match Play, PAR Plus
  - › Dark Green
    - › Green Lawnger, Vision Pro HD, Transition HC (darkest)

# Acknowledgments

- Jon Christenson, Superintendent
  - Monarch Bay GC
- Rodney Muller, Superintendent
  - Empire Ranch GC
- Aaron Engelhard, Superintendent
  - JW Marriott Desert Springs Resort & Spa
- Alison and Yun Baird
  - Jim's daughter and wife
  - "Don't worry, dear. **Eventually** the colorants will wear off of the concrete."

**This research was made possible by:**

**CA TURFGRASS &  
LANDSCAPE &  
FOUNDATION**

**“Keeping California Green and Growing”**

- Becker Underwood
- Enviroseal Corporation
- Grigg Brothers
- Numerator Technologies
- Pioneer Athletics
- Simplot Partners

**Please contact Jim Baird with questions  
or if you would like a PowerPoint version  
of this file for your own presentation.**

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