



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
- CO₂-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

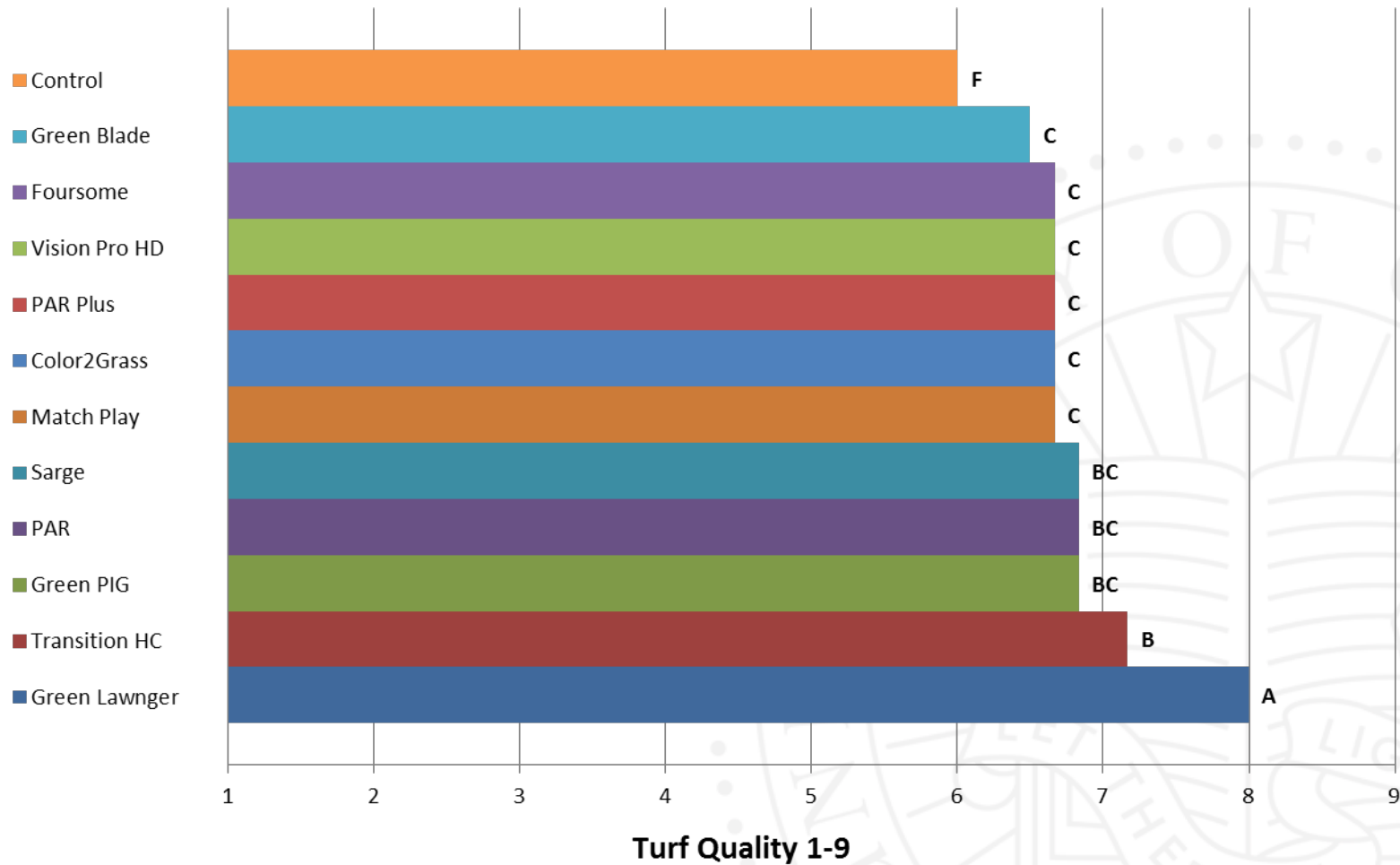
Product	Company	Type	Rate	Timing
Untreated Control	--	--	--	--
Green Lawngr	Becker Underwood	Pigment with Resin	10 gal/A	A
Match Play	Pioneer Athletics	Pigment with Resin	1:15 (v/v)	A
Color2Grass	Enviroseal Corporation	Pigment with Resin	1:15 (v/v)	A
Green PIG PAR	Grigg Brothers Simplot	Pigment	16 oz/A 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)

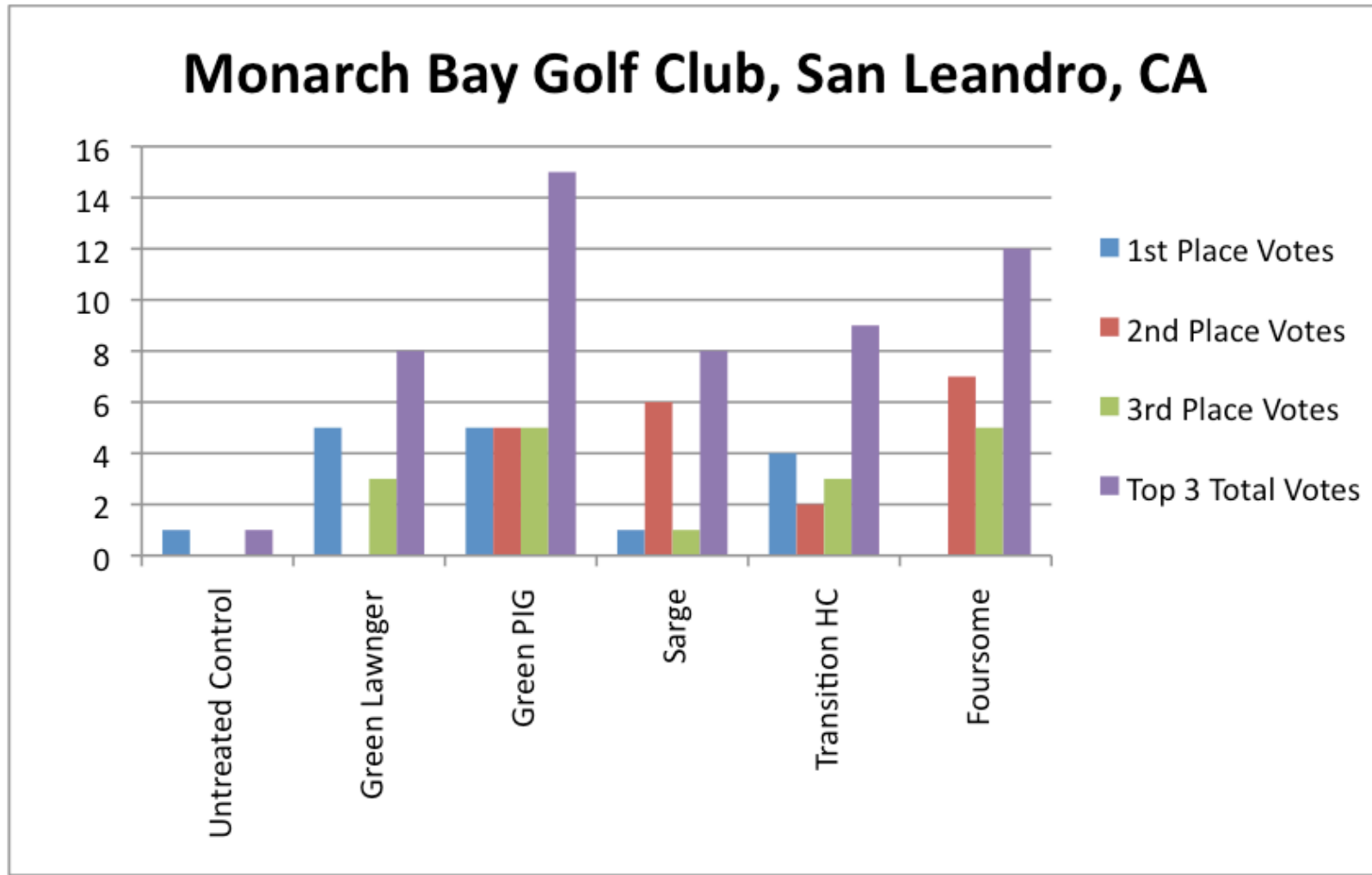
Monarch Bay Turf Quality 11-20-12



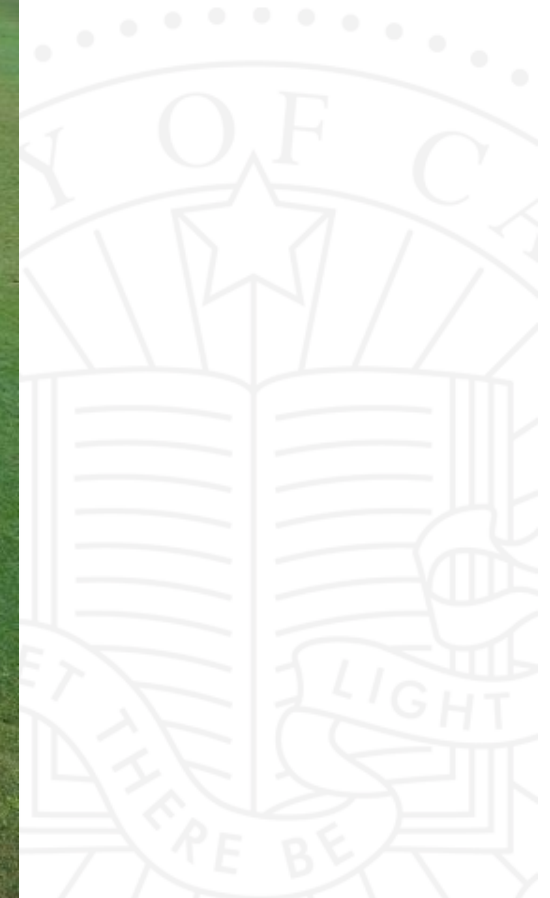
Monarch Bay GC (after application on 20 Nov 2012)



Top Performers



Monarch Bay GC (20 Nov 2012)



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

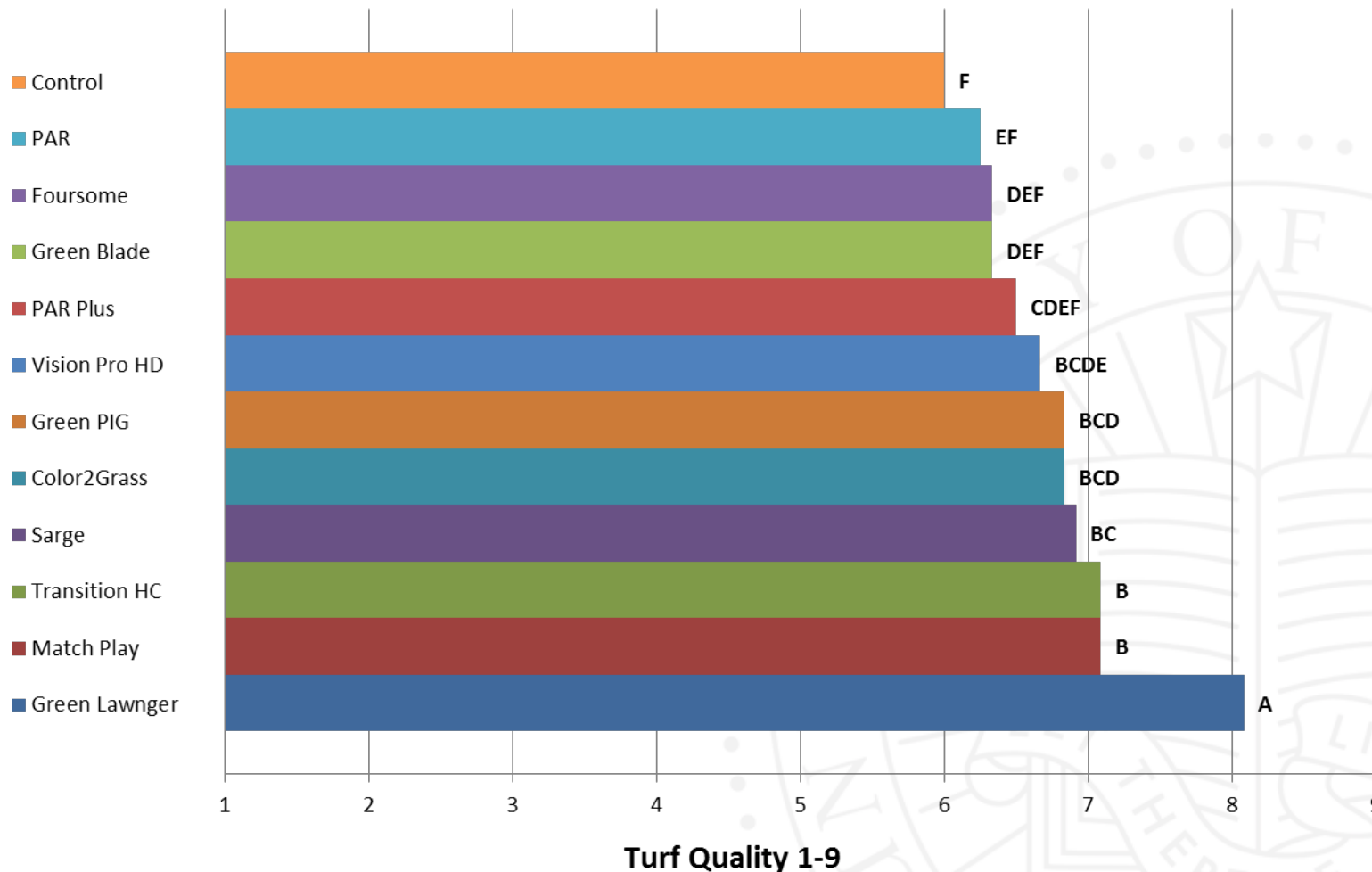
A = 6 November 2012 (1x rate)

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

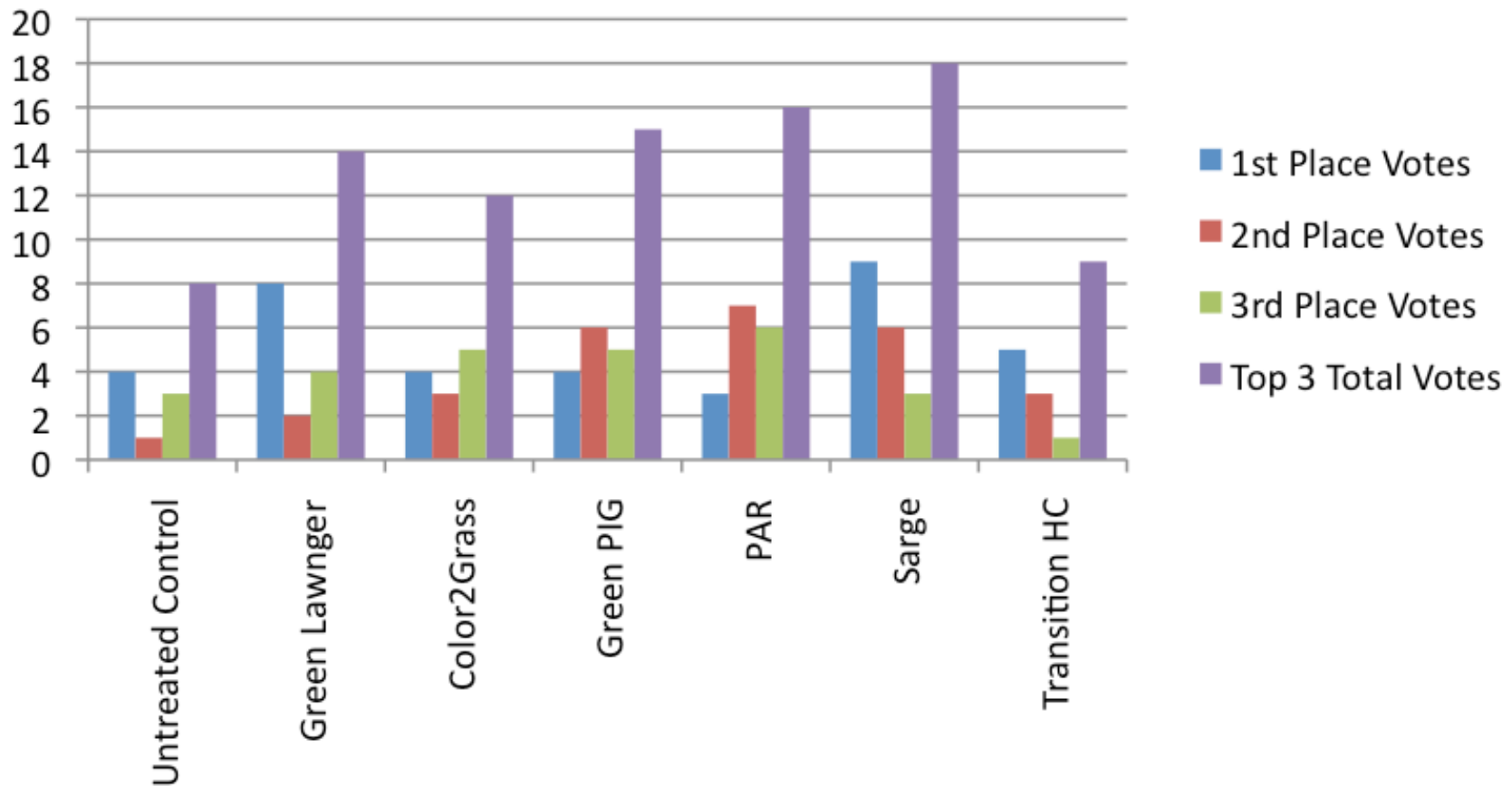


Empire Ranch GC (after application on 3 Dec 2012)

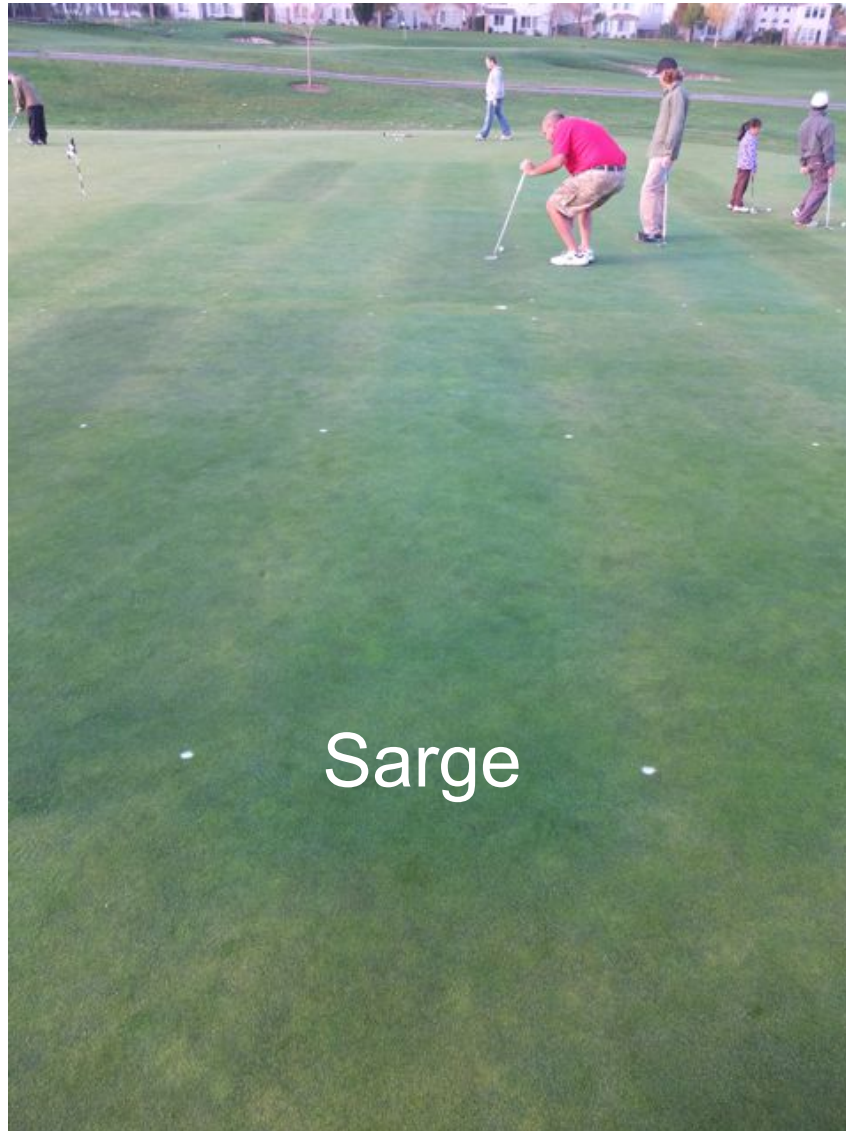


Top Performers

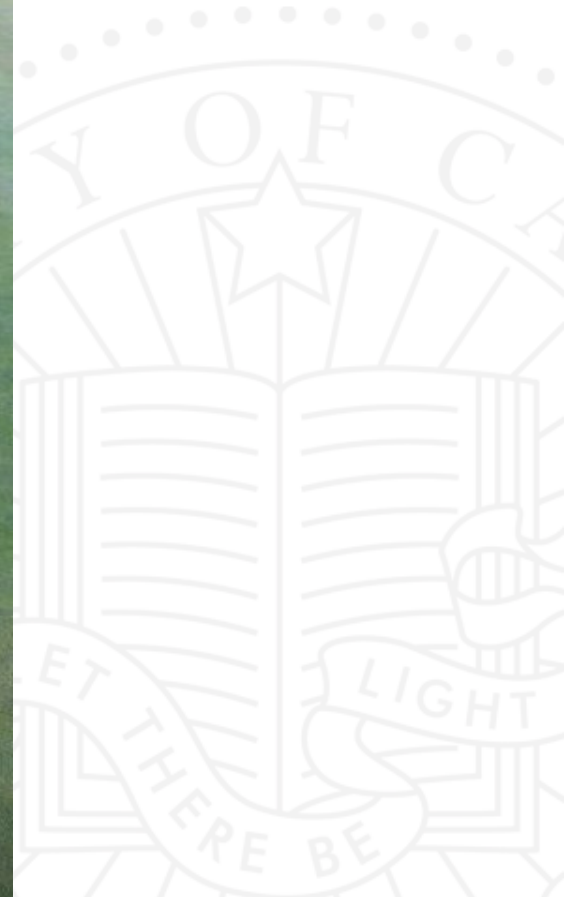
Empire Ranch Golf Club, Folsom, CA



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

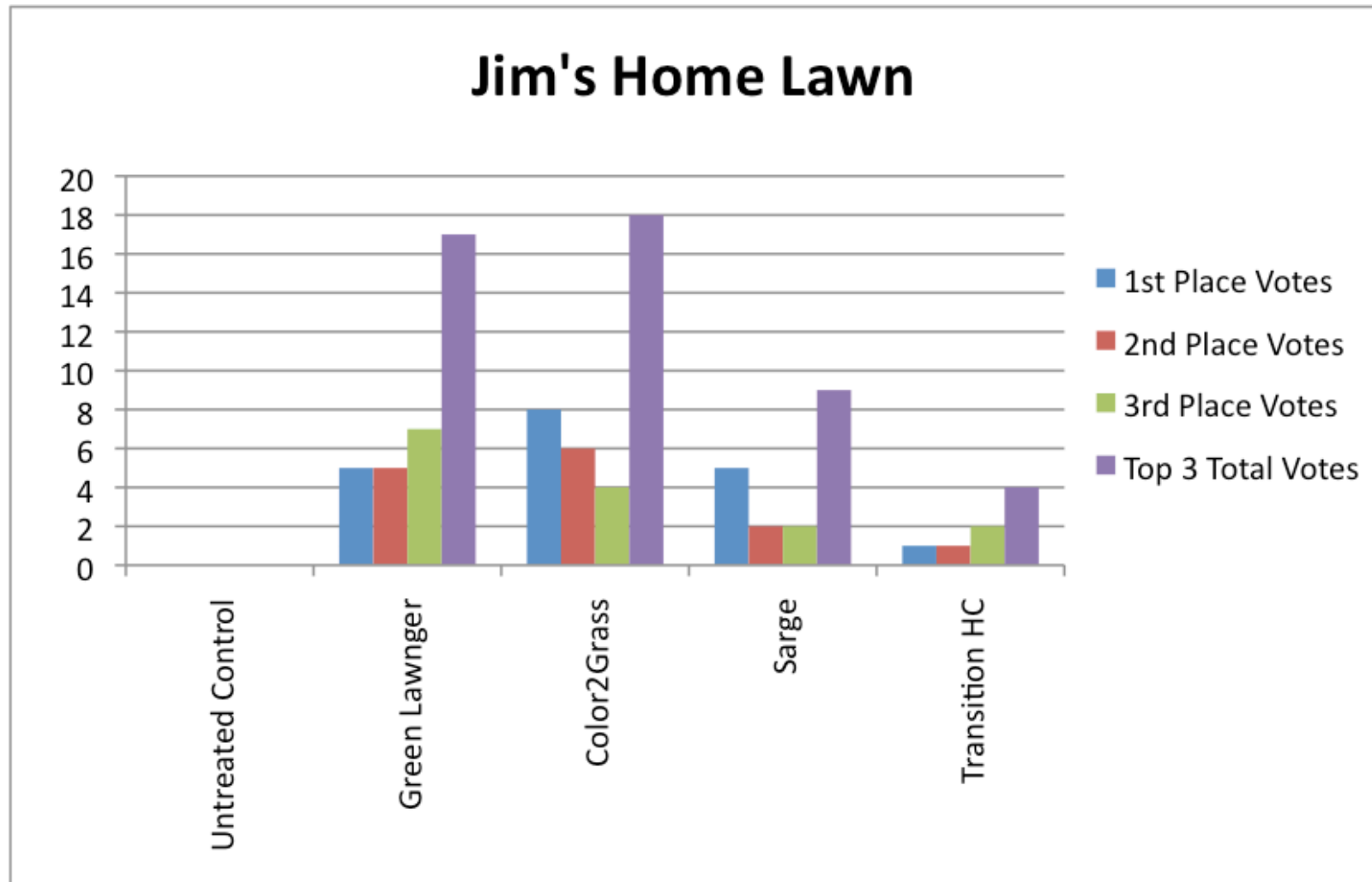
A = 18 November 2012

Plots sprayed at 4x rate

Jim's Home Lawn (18 Nov 2012)



Top Performers

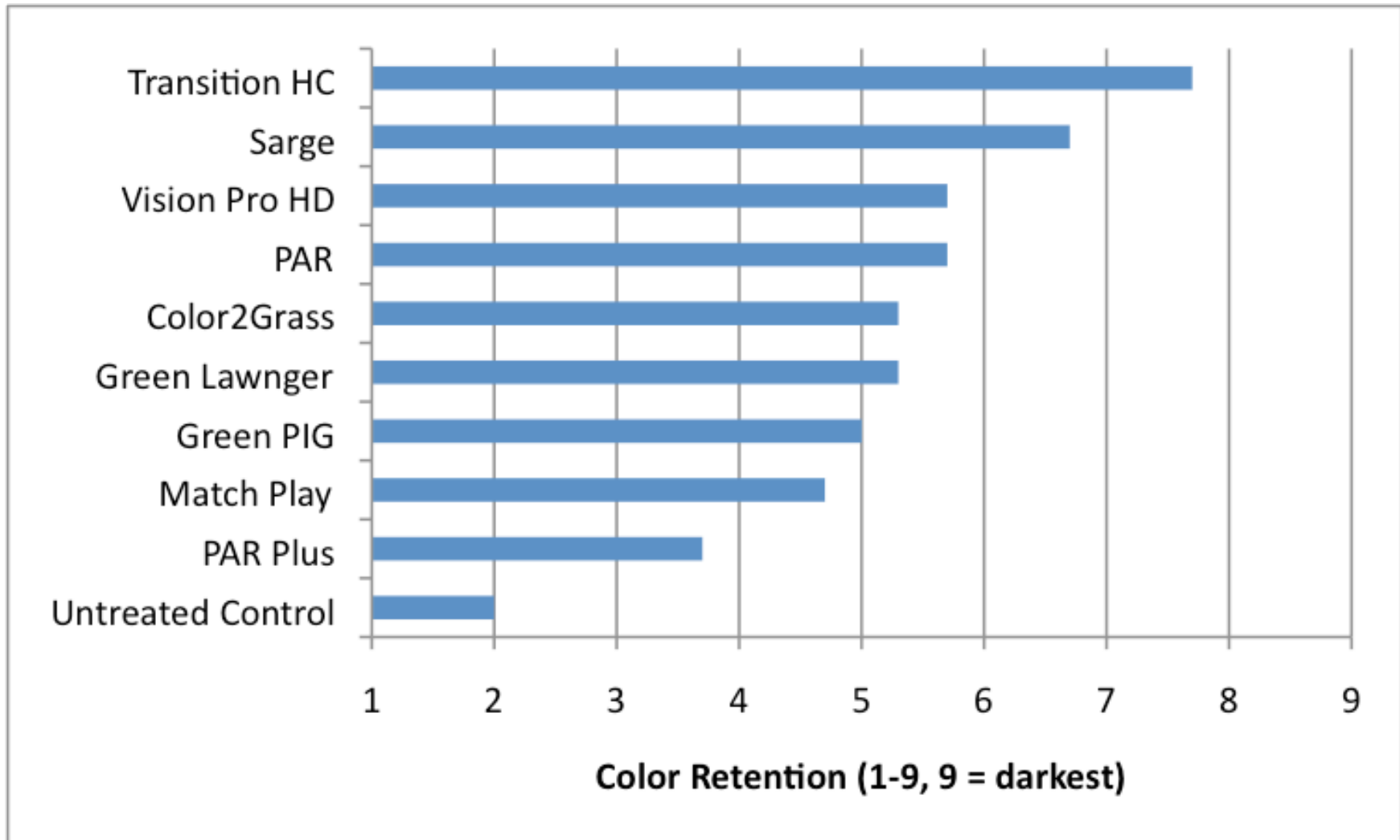


Jim's Home Lawn

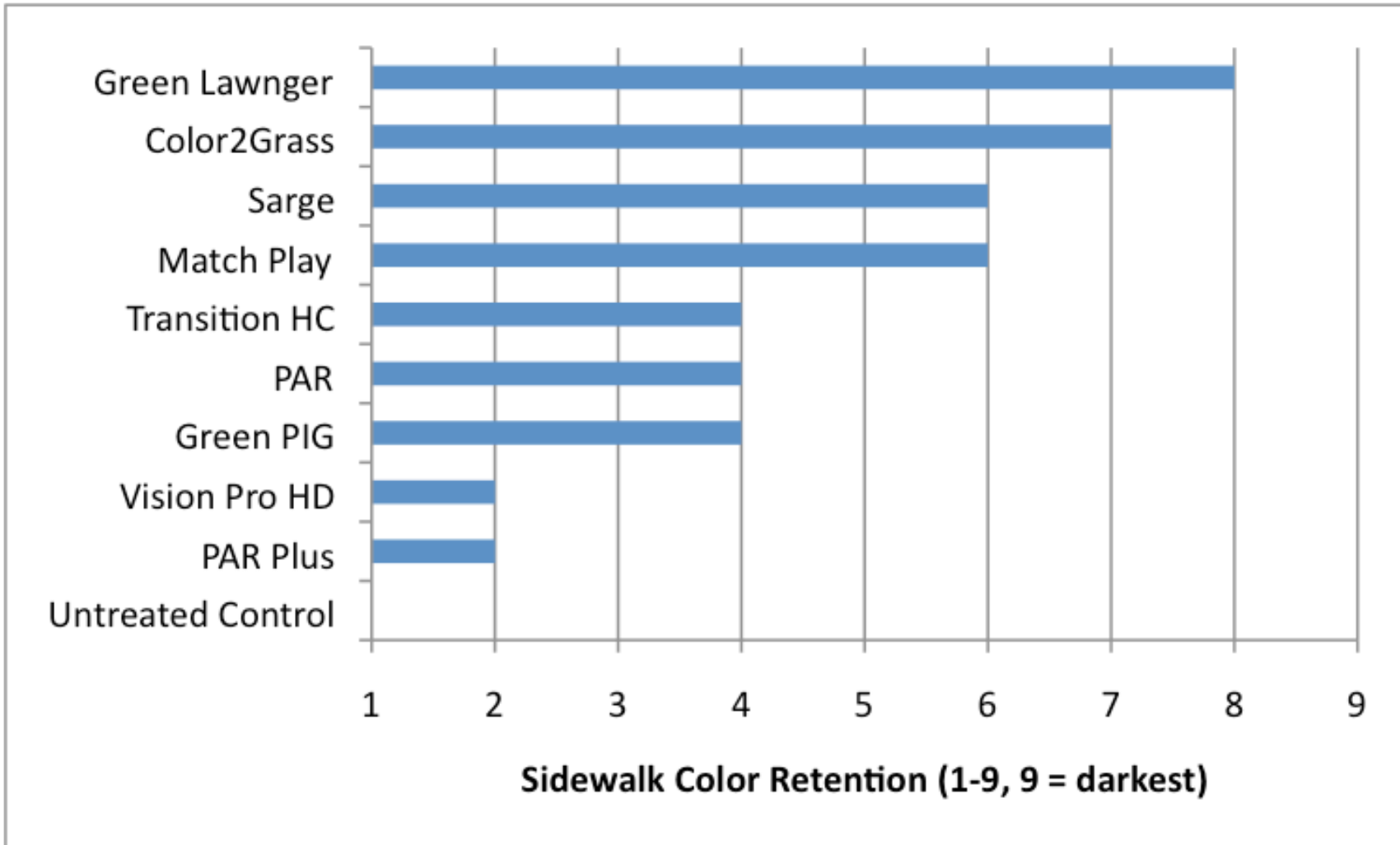
2 Dec 2012



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 Lawngr	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

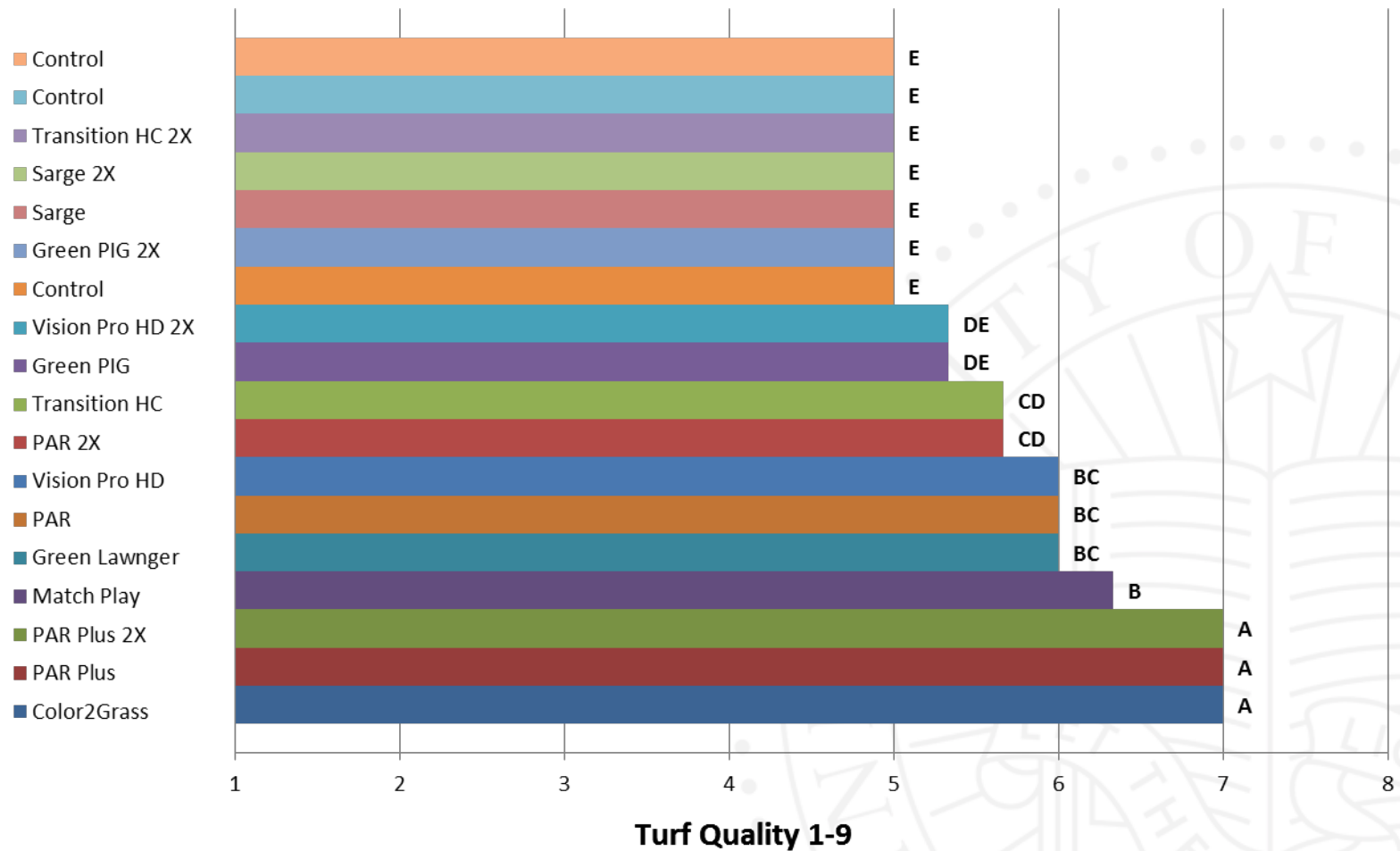
B = 30 November 2012 (pigments only)

C = 14 December 2012

D = 11 January 2013

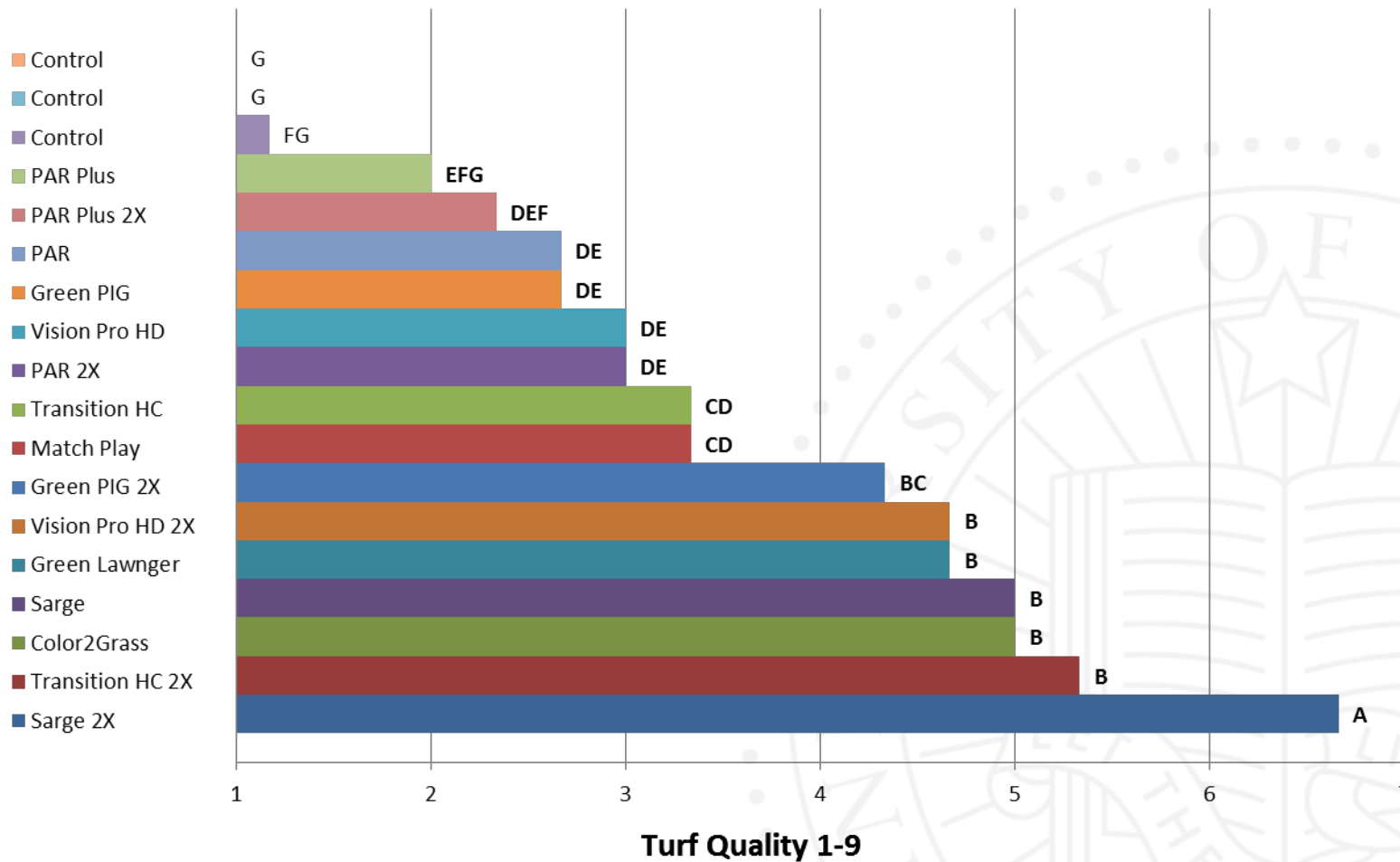
Researcher Ratings Before Full Dormancy

Marriott Desert Springs Turf Quality 12-14-12

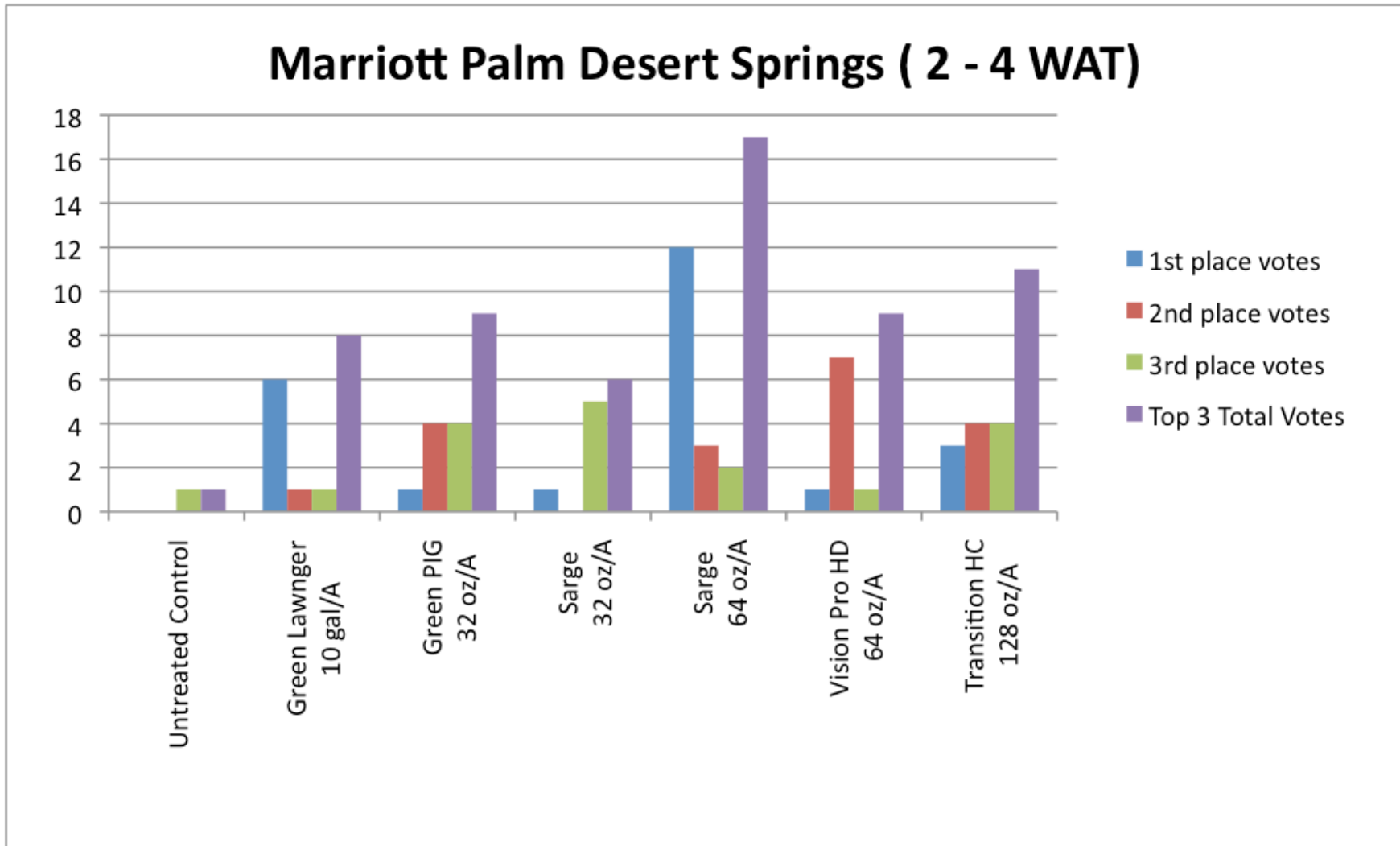


Researcher Ratings During Dormancy

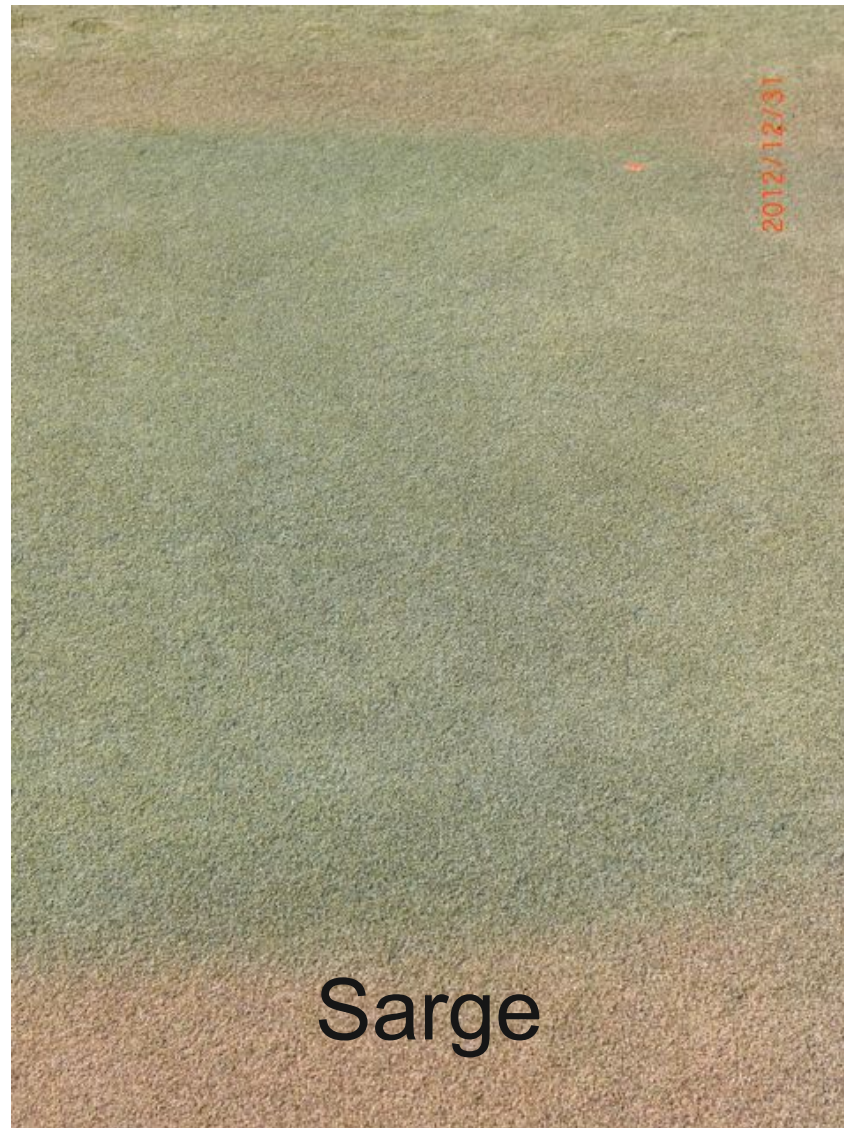
Marriott Desert Springs Turf Quality 12-31-12



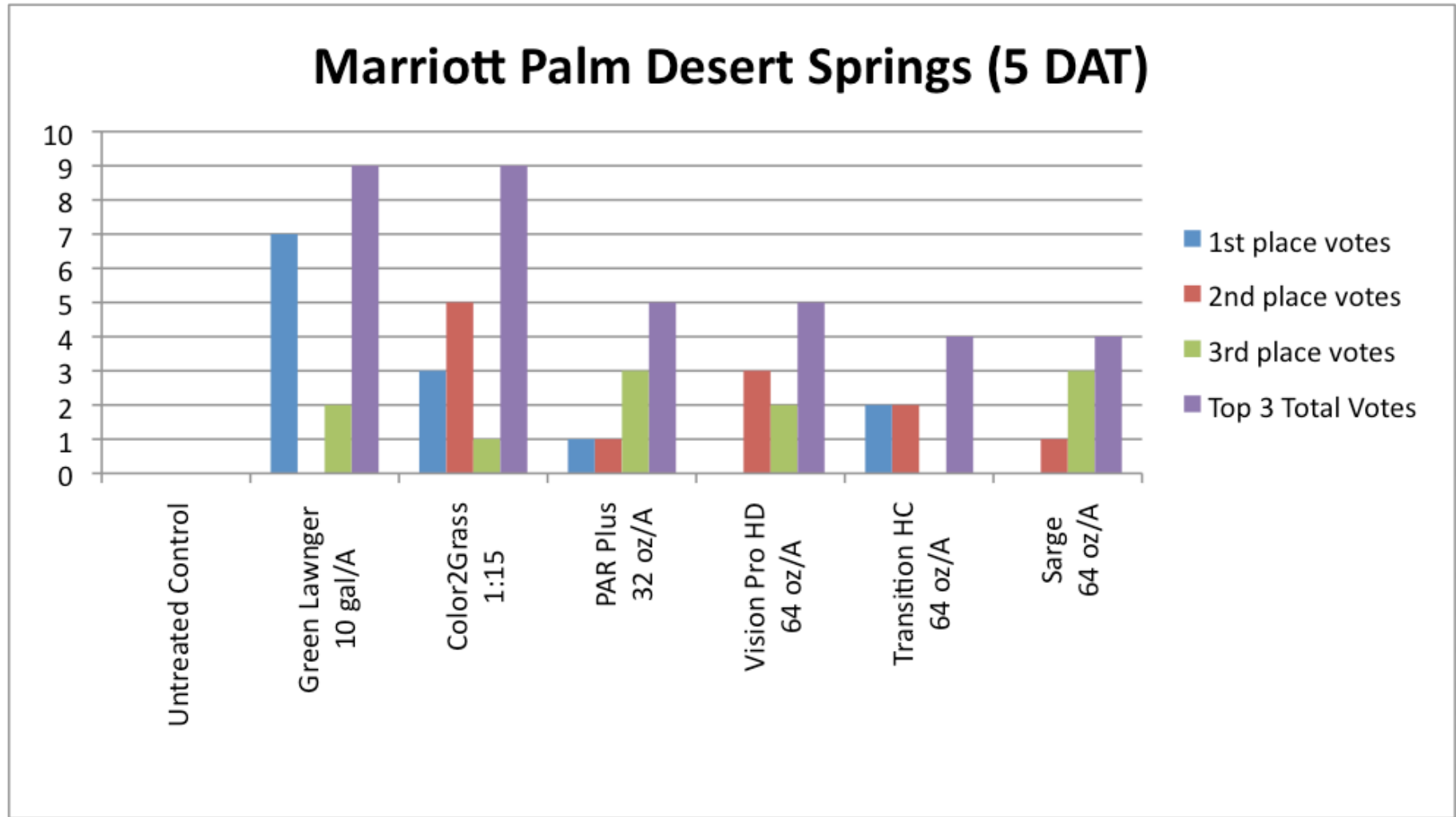
Top Performers (rated between 31 Dec 2012 and 10 Jan 2013)



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.

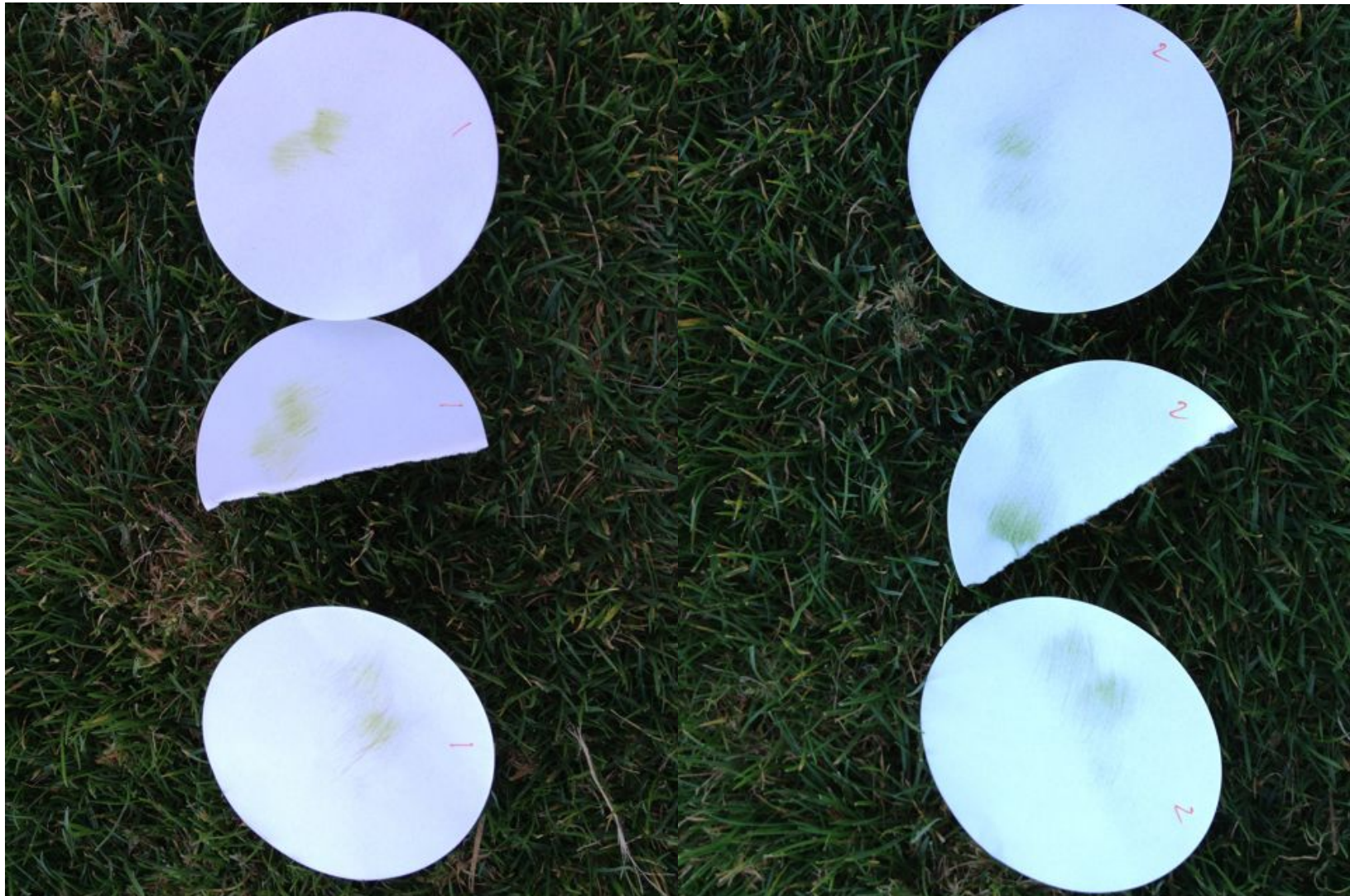
Summary

- 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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