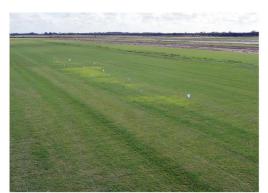
Characterization of Genetic Off-types in 'Celebration' Bermudagrass by Inferred Ploidy Level through Flow Cytometry

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Vegetatively propagated turfgrasses such as *Cynodon dactylon* 'Celebration' (2n=36), bermudagrass, are inspected visually for genetic off-types by the Southern Seed Certification Association. A lanky yellow-green (LYG) off-type was observed in fields under certification. We genetically characterized off-types by flow cytometery.³ Among 11 paired samples from farms (Celebration vs. LYG), 7 of 11 LYG off-types, when planted from a single stolon and grown out, had estimated DNA content consistent with 2n=3x=27 (Table, below) and were morphotypically homogeneous, but differed from putative 'Celebration' genotypes, nearby in the same field which had inferred 2n=4x=36. While there were inconsistencies in 4 of 11 off-types, LYG off-types in 'Celebration are not environmental variation.







LYG off-type spots in 'Celebration' bermudagrass. Left and right, spots found during inspection; center, spots killed before harvest.

Primary	Grow-out		Inferred	pg DNA/	Paired off-type	Grow-out		Inferred	pg DNA/	
collection	morphotype	pg DNA/2C	ploidy	ploidy	collection	morphotype	pg DNA/2C	ploidy	ploidy	Comments
Celebration morphotypes with inferred 2n=4x					Lanky yellow-green off-types with inferred 2n=3x					
C003	Celebration	3.76	4x	0.94	C003-LYG	LYG	2.83	3x	0.94	
C005	Celebration	3.71	4x	0.93	C005-LYG	LYG	2.93	3x	0.98	
C007	Celebration	3.80	4x	0.95	C007-LYG	LYG	3.10	3x	1.03	
C017	Celebration	3.66	4x	0.92	C017-LYG	LYG	3.17	3x	1.06	
C019	Celebration	3.64	4x	0.91	C019-LYG	LYG	3.05	3x	1.02	
C021	Celebration	3.74	4x	0.94	C021-LYG	LYG	3.00	3x	1.00	
C023	Celebration	3.69	4x	0.92	C023-LYG	LYG	3.02	3x	1.01	
					Average		3.01		1.00	
					Minimum		2.83		0.94	
					Maximum		3.17		1.06	
						Inconsistent off-types				
C009	Celebration	3.95	4x	0.99	C009-LYG	African	2.45	2x	0.82	
C011	Celebration	3.70	4x	0.93	C011-LYG	Tetraploid?	3.32	3x	1.11	
C001	Celebration	4.10	4x	1.03	C001-LYG	Common	3.80	4x	1.27	Ran two samples
C025	Celebration	3.98	4x	1.00	C025-LYG	LYG	4.08	4x	1.36	Ran two samples
Average		3.79		0.95						
Minimum		3.64		0.91						
Maximum		4.10		1.03						
	Standard	ds with knowr	n ploidy							
Celebration Celebration		3.77	4x	0.94						
TifEagle	TifEagle	3.05	3x	1.02						

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³ CyStain absolute P kit with extraction buffer and staining buffer and stained with propidium iodide.