



**Figure S1.** Maximum likelihood (ML) phylogenetic tree inferred from longitude and latitude data for 283 Bermuda grass individuals and two outgroups (*Typha latifolia* L. and *Anomochloa marantoidea*). Numbers on branches are bootstrap frequency values for 1000 bootstrap replicates.

**Table S1.** Proportion of variance of the first ten principle components using PCA analysis in Bermuda grass.

Principle component	Proportion of variance			
	Leaf hyperspectral data	Canopy hyperspectral data	Early multispectral data (May 17)	Late multispectral data (June 1)
PC 1	61.72%	63.01%	99.04%	98.58%
PC 2	28.02%	20.95%	0.80%	1.29%
PC 3	8.77%	11.01%	0.12%	0.09%
PC 4	0.95%	4.04%	0.02%	0.02%
PC 5	0.25%	0.40%	0.01%	0.02%
PC 6	0.13%	0.19%	1.91e-003%	1.45e-003%
PC 7	0.09%	0.16%	2.87e-004%	2.14e-004%
PC 8	0.02%	0.13%	1.17e-004%	9.48e-005%
PC 9	0.02%	0.03%	3.38e-005%	1.70e-005%
PC 10	0.01%	0.03%	6.56e-006%	7.67e-006%