

Supplemental Table S1. Significance of *F* tests for the main effects and interactions of location (L), fertilizer N rate (N), and month (M; SPAD only) on *Miscanthus* biomass yield, leaf chlorophyll concentration (LCC; measured with SPAD), relative LCC, N conc. and content at harvest, residual soil NO₃-N (RSN) content to 0.9 m, and potentially mineralizable N to 0.3 m at 7 (PMN_{7d}) or 14 d (PMN_{14d}) in two experiments in Missouri during 2013 to 2015.

Response variables	Source of variation	Boone-LT, Cooper, Moniteau				Boone-JF			
		2013	2014	2015	2013-15	2013	2014	2015	2013-15
----- <i>P</i> > <i>F</i> -----									
Biomass yield	L	<0.001	<0.001	0.020	0.034	n/a	n/a	n/a	n/a
	N	0.034	0.22	<0.001	<0.001	0.93	0.34	0.67	0.69
	L × N	0.13	0.016	0.008	0.018	n/a	n/a	n/a	n/a
LCC†	L	<0.001	<0.001	<0.001	n/a	n/a	n/a	n/a	n/a
	N	<0.001	<0.001	<0.001	n/a	0.37	<0.001	<0.001	n/a
	L × N	0.0045	<0.001	<0.001	n/a	n/a	n/a	n/a	n/a
	M	<0.001	<0.001	<0.001	n/a	<0.001	<0.001	<0.001	n/a
	L × M	<0.001	<0.001	<0.001	n/a	n/a	n/a	n/a	n/a
	N × M	0.012	<0.001	<0.001	n/a	0.52	0.44	<0.001	n/a
	L × N × M	0.69	0.010	<0.001	n/a	n/a	n/a	n/a	n/a
Relative LCC‡	L	0.46	<0.001	<0.001	n/a	n/a	n/a	n/a	n/a
	M	0.018	0.0056	<0.001	n/a	0.37	0.28	0.019	n/a
	L × M	0.0034	0.029	<0.001	n/a	n/a	n/a	n/a	n/a
Biomass N conc.	L	0.013	0.025	<0.001	<0.001	n/a	n/a	n/a	n/a
	N	0.38	0.0024	0.076	0.0048	0.011	0.060	0.48	0.032
	L × N	0.59	0.68	0.028	0.57	n/a	n/a	n/a	n/a
Biomass N content	L	<0.001	0.55	<0.001	<0.001	n/a	n/a	n/a	n/a
	N	0.12	<0.001	<0.001	<0.001	0.0092	0.098	0.55	0.012
	L × N	0.71	0.18	0.28	0.96	n/a	n/a	n/a	n/a
RSN	L	<0.001	0.79	0.34	n/a	n/a	n/a	n/a	n/a
	N	0.006	0.38	0.54	n/a	0.097	0.009	0.23	n/a
	L × N	0.69	0.56	0.99	n/a	n/a	n/a	n/a	n/a
PMN _{7d}	L	n/a	0.14	n/a	n/a	n/a	n/a	n/a	n/a
	N	n/a	0.24	n/a	n/a	n/a	0.103	n/a	n/a
	L × N	n/a	0.88	n/a	n/a	n/a	n/a	n/a	n/a
PMN _{14d}	L	n/a	0.14	n/a	n/a	n/a	n/a	n/a	n/a
	N	n/a	0.75	n/a	n/a	n/a	0.079	n/a	n/a
	L × N	n/a	0.96	n/a	n/a	n/a	n/a	n/a	n/a

† Data were analyzed for September separately than other months because no measurements were taken at Cooper this month. Location, N, and location × N all were significant at *P* < 0.001 for September.

‡ Data were analyzed for September separately than other months because no measurements were taken at Cooper this month. Only the main effect of location was significant (*P* = 0.0020) for September.

Supplemental Table S2. *Miscanthus* leaf chlorophyll concentration (LCC; measured with SPAD) in 2013 as affected by location, fertilizer N treatment (N trt), and month of sampling for two experiments (Exp.) in Missouri.

Exp.	Location	N trt	June	July	August	September	
----- LCC (SPAD values) -----							
Young	Boone-LT	Avg.	44.5aB†	39.2bC	39.6bC	33.0cC	
	Cooper	Avg.	49.8aA	44.1bB	45.1bB	41.8cB	
	Moniteau	Avg.	51.2aA	45.8cA	48.5bA	44.2dA	
		Avg.	1	44.4aD	40.5bC	42.0bC	37.9cC
		Avg.	2	47.9aC	42.8bB	42.1bC	37.6cC
		Avg.	3	49.9aB	43.7cAB	45.2bB	40.6dB
		Avg.	4	51.8aA	45.1cA	48.2bA	42.6dA
Mature	Boone-JF	Avg.	47.1a	44.0b	44.7b	41.6c	

† Within experiment and among locations or N trts, lowercase letters represent differences in leaf chlorophyll between month of sampling and uppercase letters represent differences in locations or N treatments within a month.

Supplemental Table S3. Relative (nonfertilized / highest N rate) *Miscanthus* leaf chlorophyll concentration (measured with SPAD) in 2013 to 2015 by location and month of sampling for two experiments (Exp.) in Missouri.

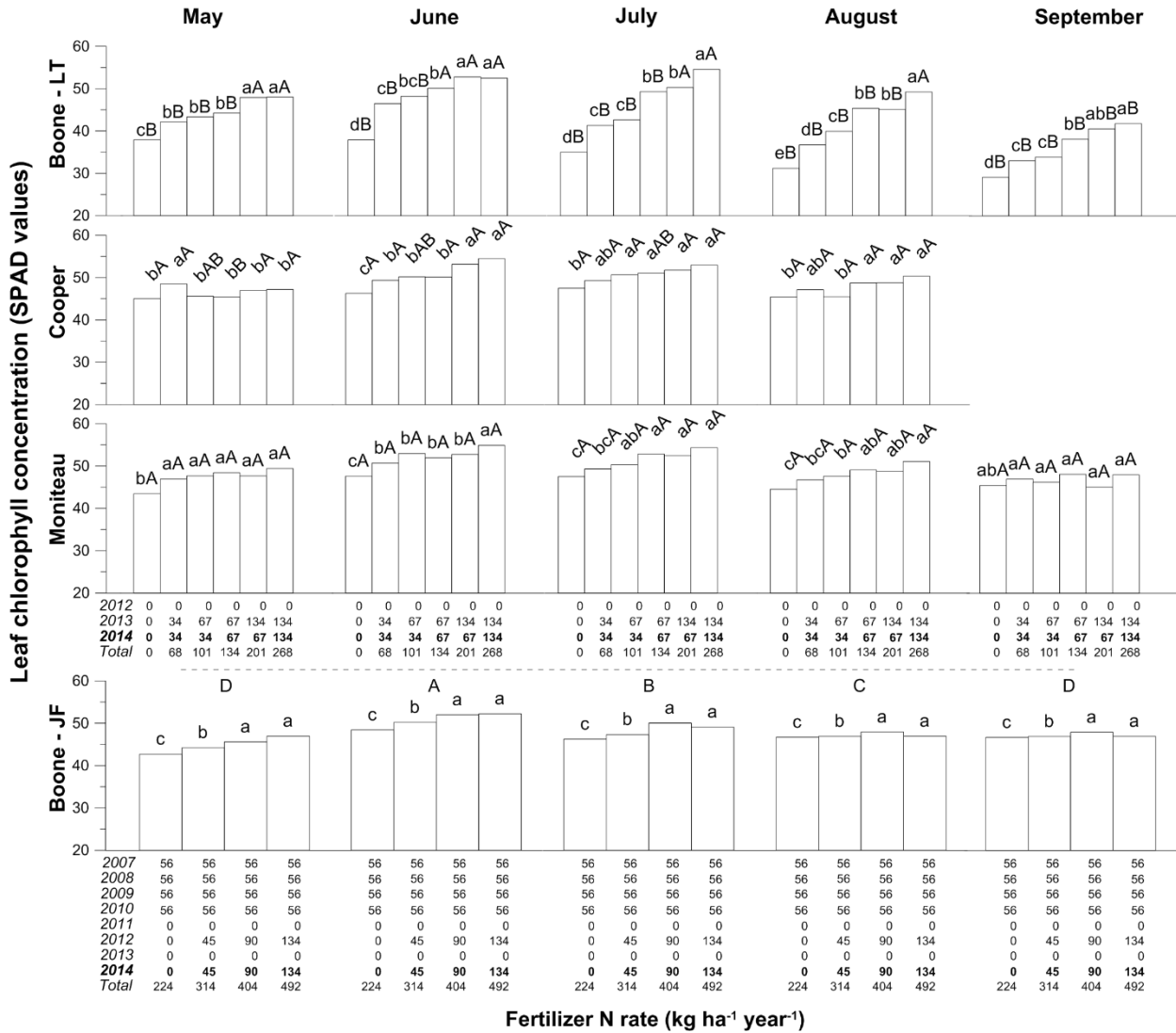
Exp.	Location	Year	May	June	July	August	September	
Young	Cooper	2013	.†	0.92aA‡	0.92aA	0.90aA	0.90aA	
			Boone-LT	.	0.76cB	0.90abA	0.87bA	0.95aA
			Moniteau	.	0.90aA	0.94aA	0.89aA	0.89aA
	Cooper	2014	0.96aA	0.85bcA	0.90abA	0.90abA	.	
			Boone-LT	0.78aC	0.72aB	0.64bB	0.63bB	0.70B§
			Moniteau	0.88aB	0.87aA	0.87aA	0.87aA	0.95A
	Cooper	2015	0.95aA	0.84bA	0.85abA	0.88abA	0.87abA	
			Boone-LT	0.94aA	0.61cB	0.72bcB	0.69bcB	0.69bcB
			Moniteau	0.89aA	0.88aA	0.84aA	0.89aA	0.91aA
Mature	Boone-JF	2013	.	0.95a	1.0a	1.0a	1.02a	
		2014	0.91a	0.93a	0.94a	0.99a	0.96a	
		2015	1.01a	0.93b	0.90b	0.99a	1.03a	

† Data were not collected.

‡ Within experiment and year, lowercase letters represent differences in relative leaf chlorophyll between month of sampling and uppercase letters represent differences in locations within a month.

§ Data were analyzed for September separately than other months because no measurements were taken at Cooper this month.

Supplemental Figure S1. SPAD values in 2014 for young stands at Boone–LT, Cooper and Moniteau and a mature stand at Boone–JF by month of measurement and fertilizer N rate treatment. Within sites, years, and months, lowercase letters above means denote significant differences among N rate treatments. Within years and months for the three sites with young stands, uppercase letters above means denote differences among sites by N rates. Uppercase letters at Boone–JF denote differences among months.



Supplemental Figure S2. SPAD values in 2015 for young stands at Boone–LT, Cooper and Moniteau and a mature stand at Boone–JF by month of measurement and fertilizer N rate treatment. Within location and month, lowercase letters above means denote significant differences among N rate treatments. Within month for the three sites with young stands, uppercase letters above means denote differences among location by N rate treatments. Data was not collected in September at Cooper. Uppercase letters at Boone–JF denote differences among months.

