Supplementary Table S2 Statistically and biologically supported models, coefficients, and fit criteria to describe variation in dry matter and nutritional component yields of *Tithonia diversifolia* (Hemsl.) A. Gray across growth ages (per cut and per year)

Ítem	SM	Coefficients [c]				P-value	Model fit criteria		
		Intercept	β_1	β_2	β_3		R^2_{adj}	BIC	AIC
Yield per cut									
DM (g)	L	–67.5 ± 7.3[a]	4.21 ± 0.17[a]	—	—	< 0.0001	0.91	534	527
	Q	–111.9 ± 21.0[a]	6.749 ± 1.144[a]	–0.032 ± 0.014[c]	—	< 0.0001	0.92	533	524
CP (g)	Q	–19.1 ± 4.4[a]	1.35 ± 0.24[a]	-0.011 ± 0.003[a]	—	< 0.0001	0.77	345	337
	C	–53.8 ± 14.8[a]	4.42 ± 1.27[b]	–0.093 ± 0.034[b]	$6.9\cdot10^{-4} \pm 3\cdot10^{-4}$[c]	< 0.0001	0.79	343	333
aNDFn (g)	L	–29.0 ± 3.0[a]	1.60 ± 0.07[a]	—	—	< 0.0001	0.90	426	420
ADFn (g)	L	–38.3 ± 3.0[a]	1.98 ± 0.07[a]	—	—	< 0.0001	0.93	426	420
ADL (g)	L	–4.57 ± 2.02[c]	0.447 ± 0.047[a]	—	—	< 0.0001	0.60	378	372
	Q	–33.2 ± 4.5[a]	2.08 ± 0.24[a]	–0.020 ± 0.003[a]	—	< 0.0001	0.77	347	339
EE (g)	L	–1.31 ± 0.28[a]	0.07 ± 0.01[a]	—	—	< 0.0001	0.60	143	137
	Ex	0.167 ± 0.054[b]	0.049 ± 0.006[a]	—	—	—	0.66	141	135
NSCn (g)	L	–22.1 ± 3.1[a]	1.41 ± 0.07[a]	—	—	—	0.86	429	423
	Q	–51.7 ± 8.2[a]	3.10 ± 0.45[a]	–0.021 ± 0.006[a]	—	< 0.0001	0.89	420	411
OM (g)	L	–61.0 ± 6.4[a]	3.72 ± 0.15[a]	—	—	< 0.0001	0.91	517	511
	Q	–92.8 ± 18.6[a]	5.54 ± 1.01[a]	–0.023 ± 0.013[d]	—	< 0.0001	0.92	518	509
NE_L (cal)	L	–85.0 ± 8.8[a]	4.65 ± 0.21[a]	—	—	< 0.0001	0.89	555	549
Yield per year									
DM (g)	Q	–1201.2 ± 164.3[a]	87.351 ± 8.936[a]	–0.831 ± 0.111[a]	—	< 0.0001	0.84	779	771
CP (g)	Q	–161.3 ± 36.1[a]	14.46 ± 1.97[a]	-0.159 ± 0.024[a]	—	< 0.0001	0.56	598	589
	C	–589 ± 112.3[a]	52.31 ± 9.68[a]	–1.178 ± 0.257[a]	$8.5\cdot10^{-3} \pm 2\cdot10^{-3}$[a]	< 0.0001	0.65	587	576
aNDFn (g)	Q	–436.1 ± 68.2[a]	29.35 ± 3.71[a]	–0.259 ± 0.046[a]	—	< 0.0001	0.82	674	665
	C	–945.2 ± 229.4[a]	74.40 ± 19.78[a]	–1.472 ± 0.525[b]	$0.0101 \pm 4\cdot10^{-3}$[c]	< 0.0001	0.84	672	662
ADFn (g)	Q	–493.9 ± 67.4[a]	31.78 ± 3.66[a]	–0.260 ± 0.045[a]	—	< 0.0001	0.88	672	664
ADL (g)	Q	–316.7 ± 36.3[a]	21.32 ± 1.97[a]	–0.239 ± 0.024[a]	—	< 0.0001	0.72	598	590
NSCn (g)	Q	–483.5 ± 62.9[a]	33.91 ± 3.42[a]	–0.335 ± 0.042[a]	—	< 0.0001	0.82	664	656
OM (g)	Q	–1013 ± 144.1[a]	73.52 ± 7.834[a]	–0.687 ± 0.097[a]	—	< 0.0001	0.84	764	755
NE_L (cal)	Q	–712.3 ± 200.7[a]	55.18 ± 10.91[a]	–0.395 ± 0.135[b]	—	< 0.0001	0.79	803	795

SM, selected models: L, linear; C, cubic; Q, quadratic; Ex, exponential. Coefficients: values represent coefficient ± standard deviation; superscripts indicate significance for each coefficient (a: $P < 0.0001$, b: $P < 0.001$, c: $P < 0.01$, and d: $P < 0.05$). Model fit critera: R^2_{adj}, adjusted R-squared, BIC, Bayesian Information Criterion; AIC, Akaike Information Criterion. Ítem: DM, dry matter; CP, crude protein; aNDFn, neutral detergent fiber treated with α-amylase and corrected for nitrogen; ADFn, acid detergent fiber corrected for nitrogen; ADL, acid detergent lignin; NSCn, non-structural carbohydrates corrected for nitrogen; OM, organic matter; NE_L, net energy for lactation (1× maintenance; NRC, 2001).