

Supplementary Table S1 Statistically and biologically supported models, coefficients, and fit criteria describing variation in the nutritional composition of *Tithonia diversifolia* (Hemsl.) A. Gray across growth ages

Ítem	SM	Coefficients				P-value	Model fit criteria		
		Intercept	β_1	β_2	β_3		R ² _{adj}	BIC	AIC
DM (g·kg ⁻¹)									
Plant	Q	180.3 ± 9.7 ^a	-4.21 ± 0.53 ^a	0.052 ± 0.007 ^a	—	< 0.0001	0.51	440	432
	C	292.0 ± 30.6 ^a	-14.09 ± 2.64 ^a	0.318 ± 0.07 ^a	-0.002 ± 0.001 ^a	< 0.0001	0.60	431	420
Stems	Q	87.7 ± 9.0 ^a	-1.48 ± 0.49 ^b	0.028 ± 0.006 ^a	—	< 0.0001	0.70	431	423
	C	182.9 ± 28.8 ^a	-9.9 ± 2.5 ^a	0.255 ± 0.066 ^a	-0.002 ± 0.001 ^b	< 0.0001	0.75	424	413
-----g·kg ⁻¹ DM-----									
CP	Q	444.0 ± 23 ^a	-10.338 ± 1.25 ^a	0.085 ± 0.02 ^a	—	< 0.0001	0.87	543	535
aNDFn	L	172.6 ± 18.4 ^a	3.71 ± 0.43 ^a	—	—	< 0.0001	0.55	644	637
	C	-552.8 ± 162 ^b	63.86 ± 13.98 ^a	-1.512 ± 0.37 ^a	0.0118 ± 0.003 ^a	< 0.0001	0.67	631	620
ADFn	L	118.2 ± 21.2 ^a	6.07 ± 0.50 ^a	—	—	< 0.0001	0.71	661	654
ADL	Q	-134.4 ± 29.3 ^a	14.66 ± 1.59 ^a	-0.18 ± 0.02 ^a	—	< 0.0001	0.58	572	563
	C	-431.8 ± 94 ^a	40.98 ± 8.1 ^a	-0.888 ± 0.21 ^a	0.0059 ± 0.002 ^b	< 0.0001	0.65	566	555

SM, selected models: L, linear; C, cubic; Q, quadratic. Coefficients: values represent coefficient ± standard deviation; superscripts indicate significance for each coefficient (a: P < 0.0001 and b: P < 0.001). Model fit criteria: 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; NEL, net energy for lactation (1 × maintenance; NRC, 2001).