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Functional Plant Biology

Supplementary Material

Biochemical and physiological time-of-day variations in early-development phase of *Agave mapisaga* and *Agave salmiana*

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Supplementary file

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Table S1. Effect of the time of day (CAM phases) on plant matter, and chemical compositions of five-months-old plants of *Agave mapisaga* Trel. and *A. salmiana* Otto ex Salm-Dyck.

Variable	Phase I (7:00 am)	Phase III (1:00 pm)	Phase IV (7:00 pm)	LSD
Fresh matter (g)	8.085 a	6.782 b	6.258 b	1.2383
Dry matter (g)	0.701 a	0.646 ab	0.589 b	0.0962
Glucose (µmol g^{-1})	63.799 a	68.379 a	77.430 a	19.5050
Fructose (µmol g^{-1})	8.101 b	23.668 a	23.348 a	6.7042
Sucrose (µmol g^{-1})	9.440 b	22.830 a	24.709 a	19.6551
Free amino acid (µmol g^{-1})	15.954 a	8.763 b	12.609 a	3.5928
Phenols (µmol g^{-1})	2.3145 ab	1.754 b	2.474 a	0.5628

* Different letters in a row indicate statistically significant difference at $P \leq 0.05$.

Table S2. Effect of seed provenance on plant matter, PSII photochemistry maximum quantum efficiency of (Fv / Fm), and chemical composition of five-months-old plants of *Agave mapisaga* Trel. and *A. salmiana* Otto ex Salm-Dyck.

Variable	Provenance*			LSD
	Metepec	Tlajomulco	Tlaxiaca	
Fresh matter (g)	7.178 a	7.384 a	6.427 a	1.4380
Dry matter (g)	0.592 b	0.713 a	0.684 ab	0.1171
Fv / Fm	0.780 a	0.800 a	0.800 a	0.0189
Glucose (µmol g^{-1})	72.464 a	64.961 a	69.361 a	20.353
Fructose (µmol g^{-1})	18.604 a	16.625 a	19.187 a	9.3561
Sucrose (µmol g^{-1})	19.365 a	18.862 a	18.114 a	8.5385
Free amino acids (µmol g^{-1})	11.761 a	12.766 a	13.746 a	4.9342
Phenols (µmol g^{-1})	2.017 a	2.191 a	2.496 a	0.7364

* Seeds collected from plantations at Metepec, Tlajomulco and Tlaxiaca, Hidalgo, Mexico (Metepec n = 10; Tlajomulco and Tlaxiaca n = 5). Different letters in a row indicate statistically significant difference at $P \leq 0.05$.

Table S3. Effect of species on plant matter, maximum quantum efficiency of PSII photochemistry (Fv/Fm), and chemical composition of five-months-old plants.

Variable	Species*		LSD
	A. mapisaga	*A. salmiana*	
Fresh matter (g)	7.811 a	6.785 a	1.0702
Dry matter (g)	0.597 a	0.661 a	0.0871
Fv / Fm	0.756 b	0.800 a	0.0154
Glucose (µmol g^{-1})	66.342 a	71.106 a	14.976
Fructose (µmol g^{-1})	16.940 a	18.74 a	6.8846
Sucrose (µmol g^{-1})	18.855 a	19.141 a	6.2830
Free amino acids (µmol g^{-1})	9.906 b	12.443 a	3.6308
Phenols (µmol g^{-1})	1.350 b	2.457 a	0.5481

* *Agave mapisaga*: n = 5, *A. salmiana*: n = 15. Different letters in a row indicate statistically significant difference at $P \leq 0.05$.

Table S4. Plant matter, maximum quantum efficiency of PSII photochemistry (Fv/Fm), and chemical composition (µmol g^{-1}) of five-months-old plants of *Agave mapisaga* and *A. salmiana* by the effect of their seed origin (species x provenance interaction).

Variable	*A. mapisaga* x	*A. salmiana* x			LSD
	Metepec	Metepec	Tlajomulco	Tlaxiaca	
Fresh matter (g)	7.811 a	6.545 a	7.384 a	6.427 a	1.5735
Dry matter (g)	0.597 ab	0.587 b	0.712 a	0.684 ab	0.1222
Fv / Fm	0.756 b	0.801 a	0.800 a	0.800 a	0.0230
Glucose (µmol g^{-1})	66.342 a	78.585 a	64.961 a	69.361 a	24.7900
Fructose (µmol g^{-1})	16.940 a	20.267 a	16.625 a	19.187 a	8.5208
Sucrose (µmol g^{-1})	19.141 a	19.590 a	18.862 a	18.114 a	7.5282
Free amino acids (µmol g^{-1})	9.240 b	14.283 a	12.766 ab	13.746 ab	4.5663
Phenols (µmol g^{-1})	1.350 b	2.685 a	2.191 a	2.496 a	0.7151

* n = 5. Different letters in a row indicate statistically significant difference at $P \leq 0.05$.

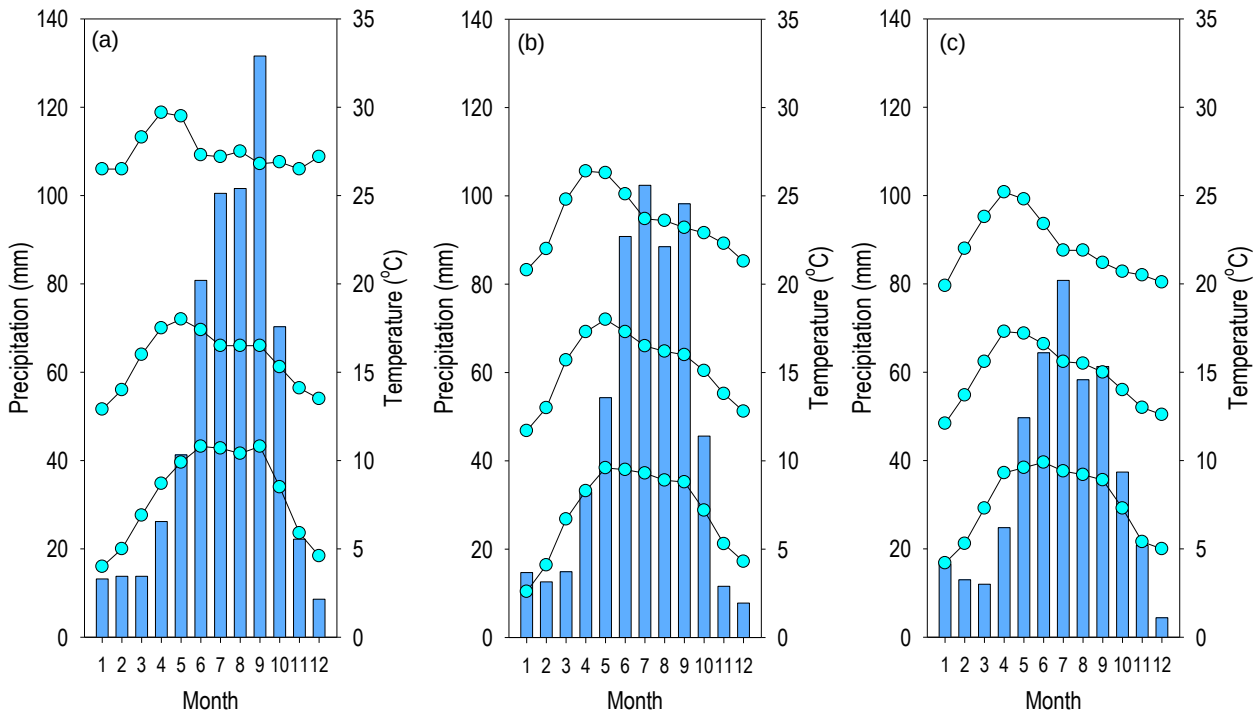

Fig. S1. Climographs based on average precipitation (bars), and average minimum, medium, and maximum temperature (circles) of Metepec (a), Tlajomulco (b), and Tlaxiaca (c), Hidalgo, Mexico. Each bar and circle represent the mean monthly (1: January … 12: December) data over a three-decade period (CONAGUA, 2020).