Supplementary Materials

Altitude modulates the effect of agricultural management on phenolic compounds, caffeine, and cup quality of roasted coffee (*Coffea arabica* L.) from Veracruz, Mexico.

Table S1. F statistics and P values (in parentheses) from two-way ANOVA for management system (M), altitudinal zone (A) and their interaction (M × A). Sensory attributes were analyzed with the Q-Grader as a blocking factor.

Variable	M (df = 1)	A (df = 2)	M × A (df = 2)	Q-Grader (df = 2)	Error df
pH	1.48 (0.248)	51.46 (< 0.001)	3.06 (0.084)	—	12
Titratable acidity	6.94 (0.022)	24.91 (< 0.001)	2.12 (0.163)	—	12
L*	0.43 (0.523)	2.31 (0.142)	0.70 (0.516)	—	12
C*	1.43 (0.256)	6.46 (0.012)	1.57 (0.248)	—	12
h°	1.57 (0.234)	6.59 (0.012)	2.19 (0.155)	—	12
Total phenolic content	44.73 (< 0.001)	435.41 (< 0.001)	90.86 (< 0.001)	—	12
Total flavonoid content	19.59 (< 0.001)	256.12 (< 0.001)	40.29 (< 0.001)	—	12
Chlorogenic acids	59.80 (< 0.001)	102.98 (< 0.001)	23.12 (< 0.001)	—	12
Condensed tannins	0.95 (0.349)	31.64 (< 0.001)	21.78 (< 0.001)	—	12
Hydrolyzable tannins	134.15 (< 0.001)	13.62 (< 0.001)	5.81 (0.017)	—	12
Caffeine	170.72 (< 0.001)	81.95 (< 0.001)	57.29 (< 0.001)	—	12
DPPH	151.33 (< 0.001)	486.58 (< 0.001)	92.45 (< 0.001)	—	12
ABTS	23.60 (< 0.001)	23.03 (< 0.001)	9.04 (0.004)	—	12
FRAP	53.82 (< 0.001)	74.37 (< 0.001)	102.23 (< 0.001)	—	12
Fragrance/aroma	1.57 (0.239)	9.12 (0.006)	0.69 (0.526)	0.29 (0.751)	10
Flavor	0.22 (0.651)	13.26 (0.002)	4.13 (0.049)	4.13 (0.049)	10
Aftertaste	0.25 (0.628)	13.00 (0.002)	1.00 (0.402)	4.00 (0.053)	10
Acidity	0.95 (0.352)	25.71 (< 0.001)	0.95 (0.418)	2.14 (0.168)	10
Body	0.69 (0.426)	5.34 (0.026)	3.28 (0.080)	1.21 (0.339)	10
Overall	1.82 (0.207)	14.09 (0.001)	0.45 (0.647)	0.45 (0.647)	10
Total SCA score	0.31 (0.591)	157.23 (< 0.001)	16.00 (< 0.001)	7.92 (0.009)	10

Physicochemical, bioactive and antioxidant variables: n = 3 analytical replicates of each composite sample. Sensory attributes: n = 3 Q-Graders. Uniformity, clean cup, sweetness and balance were not analyzed because they did not vary among samples. —: not applicable. TA: titratable acidity; L*: lightness; C*: chroma; h°: hue angle.

Table S2. Pearson correlation coefficients (r) between chemical variables and SCA sensory attributes, calculated on the means of the six management × altitude combinations (n = 6).

Variable	Fragrance/aroma	Flavor	Aftertaste	Acidity	Body	Overall	Total score
TA	0.17	0.22	0.51	0.40	-0.02	0.10	0.26
TPC	-0.57	-0.23	-0.14	-0.35	-0.25	-0.54	-0.37
TFC	-0.74	-0.44	-0.36	-0.54	-0.42	-0.66	-0.57
CGA	0.54	0.53	0.74	0.54	0.33	0.32	0.54
CT	0.16	-0.05	-0.23	-0.08	0.05	0.06	-0.01
HT	-0.07	-0.27	-0.24	-0.44	-0.26	-0.48	-0.30
Caffeine	0.70	0.68	0.71	0.56	0.58	0.45	0.66
DPPH	-0.72	-0.36	-0.36	-0.50	-0.32	-0.61	-0.52
ABTS	-0.41	-0.09	-0.04	-0.14	-0.13	-0.35	-0.21
FRAP	-0.12	0.12	0.19	-0.09	0.08	-0.27	-0.01

None of the correlations was significant ($p > 0.05$). TA: titratable acidity; TPC: total phenolic content; TFC: total flavonoid content; CGA: chlorogenic acids; CT: condensed tannins; HT: hydrolyzable tannins.