

Supplementary Materials

Supplementary Table 1. Solution preparation protocol used in the analysis of different phytochemicals in chili.

Analyses	Solution	Protocol
Total ascorbic acid content	Preparation of extract solution	A 10 g fresh sample of chili was taken in a warring blender by adding distilled water to make a 50 ml volume solution. This 50 ml volume solution was centrifuged at 0°C for 10 minutes at the speed of 5000 rpm. The supernatant liquid was collected in the 250 ml volumetric flask.
Total antioxidant content	Preparation of extract solution	1.0 g of chili was homogenized with 5 ml of HPLC grade methanol to a uniform consistency by mortar and pestle. The samples were centrifuged at 30000× g at 4°C for 20 minutes and the supernatants were stored at -20°C for further analysis.
	Preparation of 0.2 mM DPPH solution	0.0788 g DPPH was added into 1 L methanol (0.0197 g DPPH was added into 250 ml methanol for 70-80 samples).
Chlorophyll and carotenoid content	Preparation of 80% (v/v) acetone	80 ml acetone was taken into a 100 ml volumetric flask and made the volume up to 100 ml by adding 20 ml distilled water and kept in an air-tight bottle.
Total anthocyanin content	Preparation of extraction solution [methanol:6 M HCl: water = 70: 7:23 (v/v/v)]	70 ml methanol was taken in a volumetric flask and 23 ml of distilled water and 7 ml 6 M HCl acid was added respectively.
Total phenolic content	Preparation of 10% (0.2 N) Folin-Ciocalteus reagent	1 ml of Folin-Ciocalteus reagent was added into 9 ml distilled water.
	Preparation of 700 mM Na ₂ CO ₃ solution	74.2 g Na ₂ CO ₃ was added into 1 L of distilled water (14.84 g Na ₂ CO ₃ was added into 200 ml of distilled water for 70-80 samples).
Total flavonoid content	Preparation of 5% NaNO ₂ :	5 g of NaNO ₂ was dissolved in distilled water and made the volume up to 100 ml.
	Preparation of 10% AlCl ₃	10 grams of AlCl ₃ was dissolved in distilled water and made the volume up to 100 ml.
	Preparation of 1M NaOH	40 grams of NaOH was dissolved in distilled water and made the volume up to 1000 ml.

doi: [10.22058/JPMB.2024.2030425.1300](https://doi.org/10.22058/JPMB.2024.2030425.1300)**Supplementary Table 2.** Mean performance of fruits of 28 chili genotypes for seven quality traits.

Genotype	CAP	AAC	BBC	Chl a	Chl b	TCC	ANC
G ₁	0.19	40.83	0.16	0.18	0.15	0.09	1.86
G ₂	0.16	74.60	0.25	0.12	0.11	0.08	1.45
G ₃	0.22	109.33	0.24	0.07	0.06	0.07	2.30
G ₄	0.30	61.36	0.23	0.18	0.21	0.07	1.24
G ₅	0.18	44.76	0.18	0.13	0.11	0.10	1.38
G ₆	0.23	57.70	0.21	0.24	0.22	0.13	1.58
G ₇	0.28	125.56	0.15	0.19	0.17	0.11	0.74
G ₈	0.18	75.56	0.19	0.07	0.06	0.10	1.31
G ₉	0.20	56.60	0.13	0.22	0.24	0.07	1.45
G ₁₀	0.29	102.53	0.22	0.09	0.09	0.14	1.71
G ₁₁	0.21	83.66	0.23	0.08	0.09	0.09	0.48
G ₁₂	0.22	79.70	0.29	0.15	0.11	0.09	1.10
G ₁₃	0.17	64.96	0.18	0.13	0.23	0.06	0.93
G ₁₄	0.27	101.16	0.18	0.14	0.14	0.47	1.49
G ₁₅	0.20	92.30	0.23	0.05	0.07	0.09	0.9
G ₁₆	0.28	71.33	0.24	0.12	0.10	0.11	1.26
G ₁₇	0.19	113.26	0.19	0.08	0.13	0.04	1.45
G ₁₈	0.26	84.26	0.16	0.06	0.04	0.07	4.18
G ₁₉	0.30	19.46	0.19	0.19	0.07	0.14	1.77
G ₂₀	0.44	19.45	0.25	0.08	0.10	0.06	1.71
G ₂₁	0.19	79.03	0.14	0.11	0.14	0.05	0.84
G ₂₂	0.22	48.16	0.23	0.12	0.12	0.08	2.23
G ₂₃	0.23	99.73	0.25	0.12	0.16	0.13	3.26
G ₂₄	0.24	46.46	0.19	0.30	0.32	0.08	2.83
G ₂₅	0.33	86.80	0.22	0.28	0.18	0.09	1.84
G ₂₆	0.19	58.70	0.13	0.09	0.08	0.10	1.04
G ₂₇	0.39	60.40	0.20	0.13	0.09	0.12	0.74
G ₂₈	0.08	88.33	0.24	0.11	0.11	0.08	1.13
SE	0.02	7.18	0.01	0.01	0.02	0.09	0.06
CV (%)	8.85	12.04	8.38	11.23	13.53	11.41	4.66
LSD (5%)	0.03	14.42	0.03	0.03	0.03	0.19	0.12

CAP- Capsaicin content (%), AAC - Ascorbic acid content (mg/100g), BCC - β - carotene content (mg/100g), Chl a - Chlorophyll a content (mg/g), Chl b - Chlorophyll b content (mg/g), TCC - Total carotenoid content (mg/g), ANC - Anthocyanin content (μ g/g FW)

doi: [10.22058/JPMB.2024.2030425.1300](https://doi.org/10.22058/JPMB.2024.2030425.1300)**Supplementary Table 3.** Mean performance of 28 chili genotypes mineral content of fruit extract of chili.

Genotype	Na	K	Ca	Mg
G ₁	0.10	2.00	1.20	0.51
G ₂	0.11	1.94	0.98	0.47
G ₃	0.11	1.86	0.87	0.44
G ₄	0.39	1.89	0.92	0.55
G ₅	0.08	1.99	1.20	0.58
G ₆	0.11	1.95	1.05	0.56
G ₇	0.08	1.99	0.94	0.60
G ₈	0.06	1.96	0.83	0.49
G ₉	0.13	2.02	0.72	0.46
G ₁₀	0.27	1.94	1.65	0.63
G ₁₁	0.16	1.84	1.48	0.58
G ₁₂	0.21	1.82	1.21	0.62
G ₁₃	0.23	1.84	0.75	0.40
G ₁₄	0.09	1.99	1.26	0.45
G ₁₅	0.12	1.83	1.41	0.50
G ₁₆	0.10	1.92	1.01	0.55
G ₁₇	0.15	2.01	1.10	0.48
G ₁₈	0.06	1.84	0.84	0.46
G ₁₉	0.08	1.94	0.72	0.56
G ₂₀	0.12	1.94	0.98	0.56
G ₂₁	0.11	2.07	0.86	0.61
G ₂₂	0.15	2.01	0.98	0.57
G ₂₃	0.12	1.79	1.10	0.6
G ₂₄	0.14	1.85	1.15	0.46
G ₂₅	0.11	1.71	1.01	0.50
G ₂₆	0.39	1.80	1.09	0.55
G ₂₇	0.12	1.90	0.84	0.61
G ₂₈	0.15	1.98	0.97	0.54
SE	0.11	0.03	0.06	0.01
Mean value	0.15	1.92	1.04	0.54
CV (%)	6.85	2.02	7.53	3.78
LSD	0.23	0.05	0.13	0.03

Na - Sodium content (%), K - Potassium content (%), Ca - Calcium content (%), Mg -Magnesium content (%)