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Supplementary Materials

Supplementary Table 1. Physiochemical properties of soil related to Qarah-Dam and Shalami regions.

Soil texture	K (mg/kg)	P (mg/kg)	Total N (%)	OM (%)	pH	EC	Clay (%)	Silt (%)	Sand (%)
Qarah-Dam									
Silt loam	183	10.2	0.09	0.71	8.01	1.32	8	58	34
Shalami									
Silt loam	161	7.8	0.07	0.58	7.95	1.24	18	53	29

Supplementary Table 2. Meteorological characteristics of the Qarah-Dam region.

Month	Air temperature (°C)			Relative humidity (%)			Total precipitation (mm)	Total evaporation (mm)
	Min	Max	Average	Min	Max	Average		
April	11.9	23.7	17.8	36	70	53	15.2	175.5
May	16.3	27.7	22	39	75	57	42.5	199.2
June	22.6	35.2	28.9	32	67	50	32.2	303.6
July	23.1	34.2	28.7	32	64	48	0.3	347.4
August	24.8	36.3	30.5	29	61	45	1.7	325.7
September	21.1	31.1	26.1	32	60	46	16	258.5

Supplementary Table 3. Analysis of variance of different characteristics related to Qarah-Dam region.

SOV	DF	EOC	EOY	Chl a	Chl b	TChl	a/b	Carotenoid	Anthocyanin
Block	2	0.0984**	18.52**	4.91**	0.703**	9.33**	0.16**	0.377**	0.797**
Nitrogen (A)	2	0.4003**	68.13**	51.57**	1.749**	71.33**	3.68**	7.404**	43.027**
Block × A	4	0.0019	0.34	0.15	0.001	0.16	0.03	0.022	0.032
Biofertilizer (B)	3	0.1241**	17.32**	8.50**	0.879**	14.82**	0.04 ^{ns}	0.355**	2.601**
Weeding (C)	1	0.1513**	3.40**	2.78**	0.344**	5.09**	0.01 ^{ns}	0.392**	0.633**
A × B	6	0.0195**	3.30**	0.11**	0.114**	0.10*	0.47**	0.007 ^{ns}	0.222**
A × C	2	0.0260**	1.43**	0.11*	0.019*	0.10 ^{ns}	0.08*	0.011 ^{ns}	0.055**
B × C	3	0.0107**	0.61**	0.10*	0.022**	0.21**	0.01 ^{ns}	0.047 ^{ns}	0.036 ^{ns}
A × B × C	6	0.0084**	0.59**	0.02 ^{ns}	0.019**	0.04 ^{ns}	0.03 ^{ns}	0.008 ^{ns}	0.005 ^{ns}
Error	42	0.0007	0.08	0.03	0.004	0.04	0.02	0.005	0.009
CV (%)	-	3.49	4.74	2.63	3.47	2.32	4.30	3.78	3.56

*, **, Significant at the 5 % and 1 % level of probability, respectively

doi: [10.22058/JPMB.2024.2042769.1307](https://doi.org/10.22058/JPMB.2024.2042769.1307)**Supplementary Table 4.** Analysis of variance of different characteristics related to Shalami region.

SOV	DF	EOC	EOY	Chl <i>a</i>	Chl <i>b</i>	TChl	a/b	Carotenoid	Anthocyanin
Block	2	0.1123**	15.59**	4.45**	0.368**	7.38**	0.002 ^{ns}	0.619**	0.82**
Nitrogen (A)	2	0.6419**	99.79**	57.67**	1.652**	78.24**	5.742**	0.181**	44.33**
Block × A	4	0.0005	0.43	0.13	0.010	0.20	0.045	0.015	0.04
Biofertilizer (B)	3	0.1625**	20.02**	8.94**	1.119**	16.36**	0.135**	0.356**	2.86**
Weeding (C)	1	1.1705**	28.18**	6.99**	0.794**	12.50**	0.085*	0.490**	1.15**
A × B	6	0.0185**	3.23**	0.20**	0.135**	0.11**	0.923**	0.015**	0.19**
A × C	2	0.1013**	5.55**	0.18**	0.039**	0.26**	0.147**	0.016**	0.07**
B × C	3	0.0295**	2.17**	0.46**	0.028**	0.72**	0.029 ^{ns}	0.051**	0.05 ^{ns}
A × B × C	6	0.0108**	0.97**	0.12**	0.021**	0.13**	0.118**	0.045**	0.01 ^{ns}
Error	42	0.0006	0.08	0.03	0.002	0.03	0.020	0.003	0.01
CV (%)	-	2.53	4.61	2.73	2.94	2.26	3.92	2.71	3.65

*, **, Significant at the 5 % and 1 % level of probability, respectively