frontiers

Supplementary Materials

Physio-Biochemical and Agronomic Responses of Faba Beans to Exogenously Applied Nano-Silicon under Drought Stress Conditions

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Supplementary Table 1. Soil properties at the experimental site.

Supplementary Table 2. Monthly minimum (Tmin, ˚C) and maximum (Tmax, ˚C) temperatures and precipitation (Prec., mm).

Supplementary Figure 1. Characterization of chemical silicon (Si) nanoparticles (SiNPs); (A) maximum UV absorbance at 260 nm, (B) spherical shape by transmission electron microscopy (TEM), (C, D) size (51.35 nm) and charge (-21.28) of SiNPs by zeta seizer, and zeta potential, respectively, and (E) X-ray diffraction (XRD) was used to identify the crystalline nature of SiNPs.

Supplementary Figure 2. Soluble sugars standard curve at 520 nm absorbance.

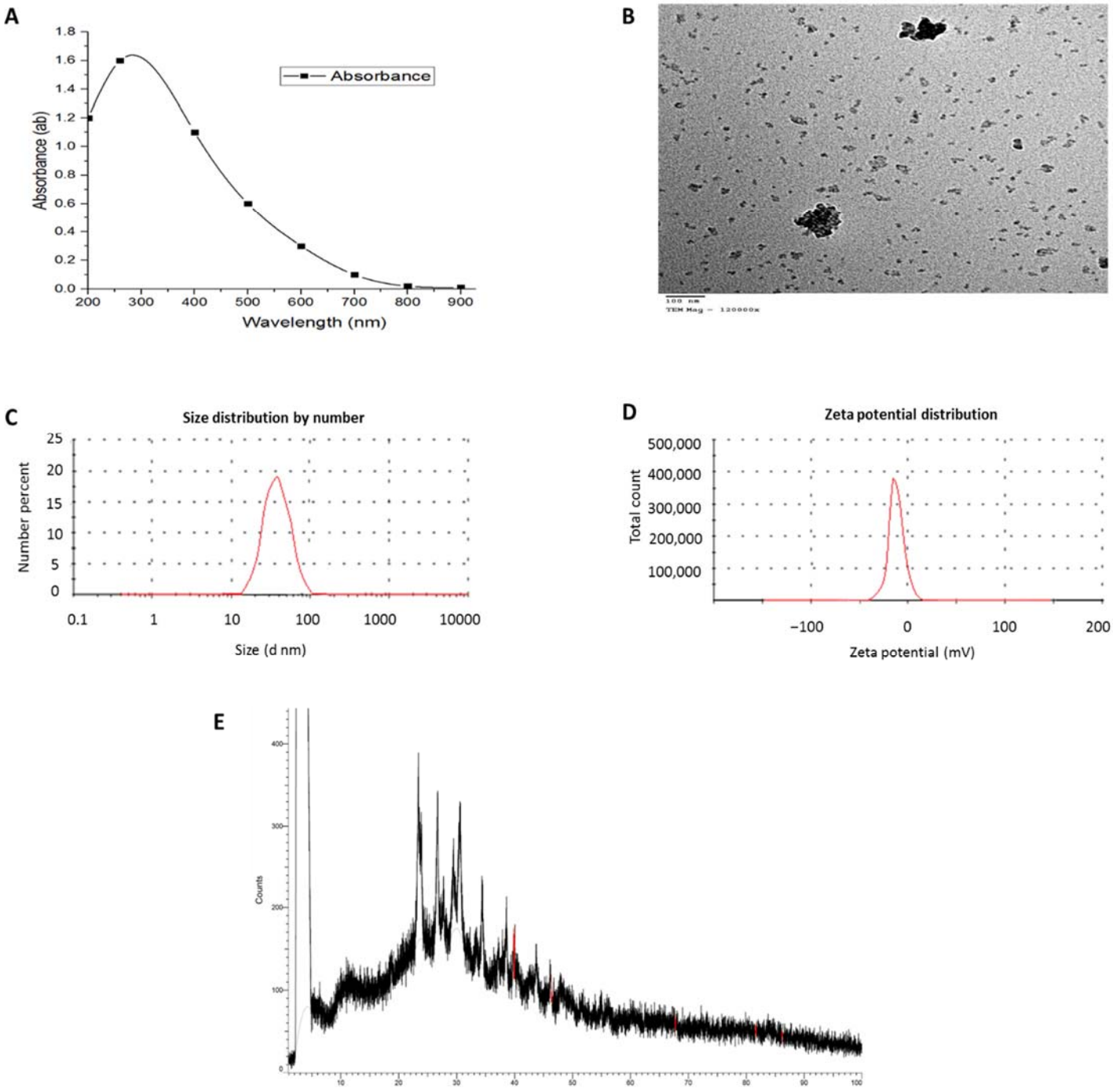
Supplementary Figure 3. Proline standard curve at 520 nm absorbance.

Supplementary Table 1. Soil properties at the experimental site.

Soil depth (cm)	Soil bulk density (g cm $^{-3}$)	Field capacity (%)	Wilting point (%)	pH	Sand (%)	Silt (%)	Clay (%)	Texture
0-30	1.49	7.25	1.65	8.05	94.95	3.33	1.72	Sandy
30-60	1.56	8.68	1.71	7.91	95.19	3.21	1.60	Sandy
60-90	1.61	8.11	1.55	7.80	96.33	2.54	1.13	Sandy

Supplementary Table 2. Monthly minimum (Tmin, ˚C) and maximum (Tmax, ˚C) temperatures and precipitation (Prec., mm).

Month	2018-2019			2019-2020			35-year average (1986-2020)		
	Tmin	**Tmax**	**Prec.**	**Tmin**	**Tmax**	**Prec.**	**Tmin**	**Tmax**	**Prec.**
November	14.4	26.9	5.7	14.9	28.5	5.9	13.6	25.6	9.7
December	10.9	21.2	9.8	9.6	21.0	9.2	9.8	21.1	7.1
January	7.0	19.1	10.3	7.3	18.0	9.6	8.2	19.5	11.0
February	9.0	20.1	12.9	8.1	20.5	15.1	9.1	20.7	10.3
March	11.3	23.0	11.2	10.1	24.8	15.6	11.3	23.7	8.1
April	13.8	26.2	3.2	12.4	25.3	4.1	14.2	28.0	4.8



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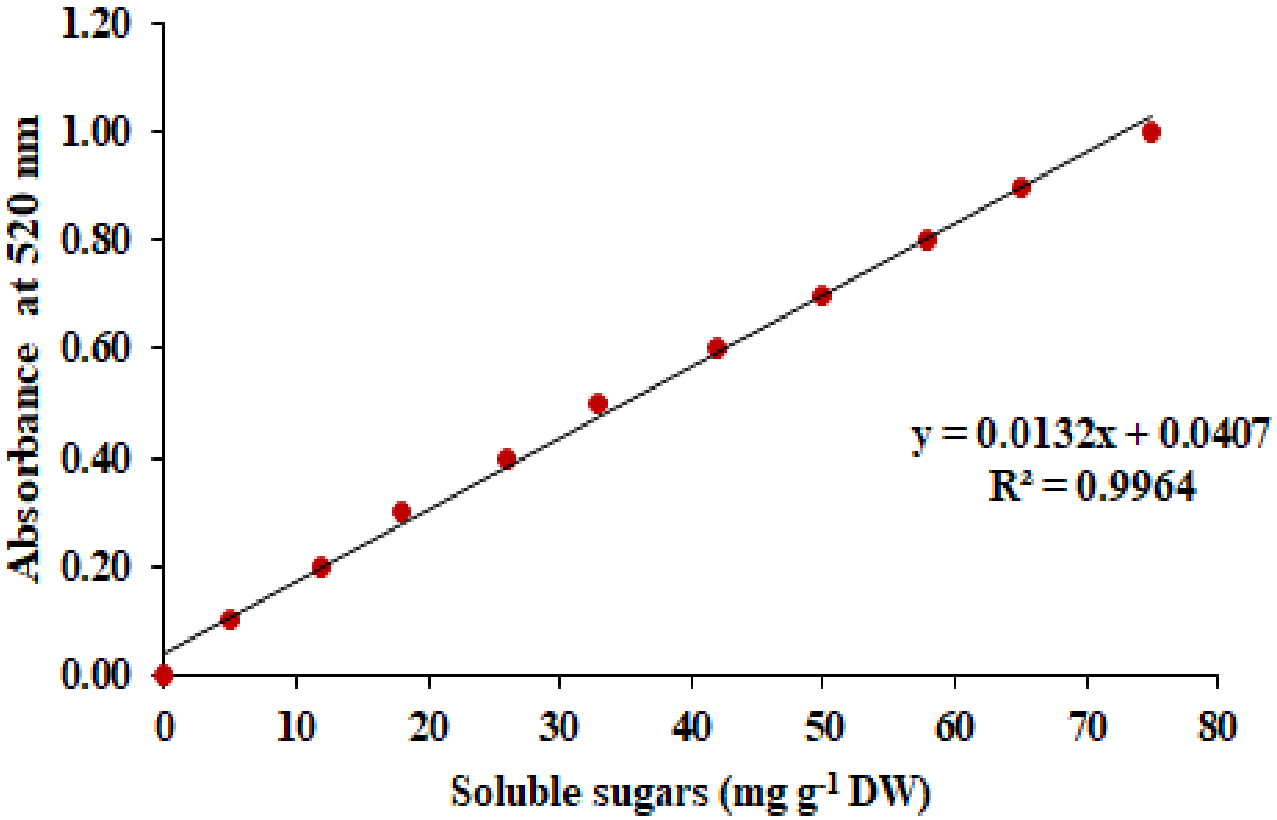
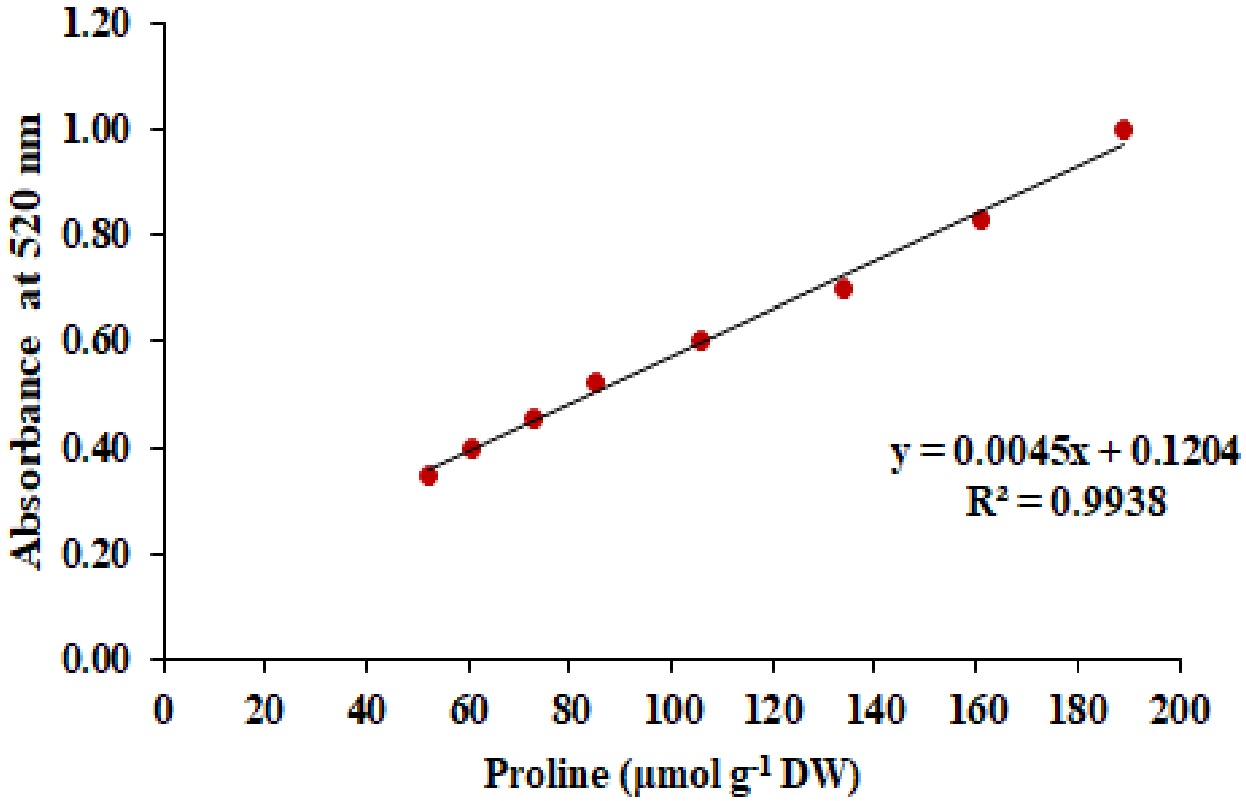


Supplementary Figure 2. Soluble sugars standard curve at 520 nm absorbance.



Supplementary Figure 3. Proline standard curve at 520 nm absorbance.