



Fig. S1. Root volume (A, B) and root surface area (C, D) of Jerusalem artichoke under planting by water limitation (W1 = 100% AW (FC), W2 = 2/3 AW, W3 = 1/3 AW) and inoculation of endophytic bacteria (isolate 3.13, 4.43, 5.2, 5.18) and control without bacteria (C) at 60 and 140 days after transplanting. Different letters indicated significant differences in volume and surface area by factorial analysis with LSD at $P < 0.05$.

Table S1. SPAD, Leaf area and Photosynthetic rate (Pn) of Jerusalem artichoke at 60 and 140 days after transplanting (DAT) with the endophytic bacteria under different water levels.

Water level	Isolate	SPAD		Leaf area (m ² plant ⁻¹)		Pn (μmol CO ₂ m ⁻² s ⁻¹)	
		60DAT	140DAT	60DAT	140DAT	60DAT	140DAT
W1	Control	32.06±0.40 ^{ab}	32.07±1.14 ^f	2.46±0.46 ^{bc}	10.40±0.50 ^{c-e}	23.82±1.58 ^b	15.32±0.35 ^{a-e}
	3.13	31.40±0.94 ^{ab}	35.47±1.03 ^{c-e}	2.36±0.45 ^{bc}	10.50±1.12 ^{cd}	25.76±2.14 ^a	19.26±3.51 ^a
	4.43	29.06±2.10 ^{bc}	33.72±0.98 ^{d-f}	1.97±0.51 ^{b-d}	8.62±0.37 ^f	23.35±0.63 ^{bc}	18.71±2.90 ^{ab}
	5.2	29.86±1.35 ^{a-c}	40.02±1.43 ^a	2.25±0.67 ^{bc}	9.37±0.44 ^{d-f}	24.00±1.29 ^{ab}	15.00±3.54 ^{a-e}
	5.18	30.12±2.61 ^{a-c}	34.92±1.02 ^{d-f}	1.42±0.34 ^{de}	11.07±0.96 ^{bc}	22.22±0.85 ^{ab}	16.11±1.02 ^{a-d}
W2	Control	27.40±1.93 ^c	38.47±0.98 ^{a-c}	1.45±0.18 ^{de}	10.87±0.33 ^c	22.57±1.58 ^{bc}	13.39±3.98 ^{c-e}
	3.13	31.23±0.42 ^{ab}	41.12±0.62 ^a	2.61±0.43 ^b	11.23±0.41 ^{bc}	23.31±0.85 ^{bc}	16.66±1.06 ^{a-c}
	4.43	29.10±0.71 ^{bc}	35.07±4.28 ^{d-f}	1.93±0.71 ^{b-d}	12.09±0.46 ^b	19.47±0.30 ^{de}	14.53±1.53 ^{b-e}
	5.2	31.60±1.76 ^{ab}	34.22±2.02 ^{d-f}	1.83±0.04 ^{cd}	9.23±0.07 ^{ef}	23.04±2.44 ^{bc}	13.61±1.68 ^{c-e}
	5.18	32.30±2.90 ^a	35.62±1.67 ^{c-e}	2.45±1.27 ^{bc}	10.76±0.35 ^c	21.39±0.65 ^c	14.19±1.05 ^{c-e}
W3	Control	32.53±4.75 ^a	32.80±0.73 ^{ef}	1.81±0.15 ^{cd}	8.20±0.37 ^f	17.70±0.52 ^e	14.17±2.22 ^{c-e}
	3.13	29.00±2.34 ^{bc}	36.17±2.22 ^{cd}	3.64±0.33 ^a	10.53±0.30 ^{cd}	23.10±0.71 ^{bc}	12.13±1.39 ^{de}
	4.43	31.36±1.44 ^{ab}	39.72±3.31 ^{ab}	2.37±0.05 ^{bc}	13.46±2.18 ^a	23.46±1.07 ^{bc}	11.73±4.29 ^c
	5.2	30.56±1.73 ^{ab}	35.60±1.51 ^{c-e}	1.86±0.34 ^{cd}	11.49±0.81 ^{bc}	19.82±2.04 ^d	13.60±1.40 ^{c-e}
	5.18	23.56±2.74 ^d	36.67±5.34 ^{b-d}	1.06±0.12 ^e	11.25±0.36 ^{bc}	19.78±0.60 ^d	16.70±7.31 ^{a-d}
%CV		7.21	6.40	24.18	7.94	5.92	20.29

Values with different letters are significantly different at P < 0.01 probability levels by least significant difference (LSD) test and coefficient of variation (CV) values. W1 = 100% AW (FC), W2 = 2/3 AW, W3 = 1/3 AW.

Table S1. (con't) Water use efficiency (WUE), Stomatal conductance (Gs), Transpiration rate (Tr) and Relative water content of Jerusalem artichoke at 60 and 140 days after transplanting (DAT) with the endophytic bacteria under different water levels.

Water level	Isolate	WUE ($\mu\text{mol CO}_2 / \text{mmol H}_2\text{O}$)		Gs ($\text{H}_2\text{O m}^{-2} \text{s}^{-1}$)		Tr ($\text{mmol H}_2\text{O m}^{-2} \text{s}^{-1}$)		Relative water content (%)	
		60DAT	140DAT	60DAT	140DAT	60DAT	140DAT	60DAT	140DAT
W1	Control	4.87±0.33 ^g	4.03±0.20 ^{bc}	0.61±0.01 ^{ab}	0.29±0.04 ^{b-c}	4.43±0.26 ^{ab}	3.95±0.17 ^{a-c}	87.34±2.48 ^{de}	63.11±4.93 ^{d-f}
	3.13	6.02±0.37 ^{ab}	4.53±0.33 ^{ab}	0.59±0.00 ^{ab}	0.39±0.06 ^a	4.24±0.16 ^{b-d}	4.10±0.51 ^{a-c}	81.03±3.47 ^{cde}	67.49±4.77 ^{d-f}
	4.43	5.37±0.10 ^{d-f}	4.57±1.31 ^{ab}	0.57±0.02 ^{b-d}	0.34±0.06 ^{a-c}	4.32±0.07 ^{bc}	4.26±0.69 ^{ab}	82.16±6.06 ^{ab}	67.91±1.34 ^{b-e}
	5.2	4.99±0.56 ^{fg}	4.40±0.12 ^{ab}	0.52±0.04 ^{c-e}	0.28±0.06 ^{c-f}	4.63±0.22 ^a	3.61±1.03 ^{a-e}	93.15±7.20 ^{c-e}	73.64±0.59 ^{a-c}
	5.18	5.53±0.17 ^{b-e}	4.35±0.32 ^{a-c}	0.47±0.06 ^{c-g}	0.35±0.02 ^{ab}	3.80±0.35 ^{ef}	4.29±1.16 ^a	85.18±1.42 ^{b-d}	78.82±9.35 ^f
W2	Control	5.51±0.35 ^{c-e}	4.94±0.76 ^a	0.64±0.12 ^a	0.17±0.02 ^{gh}	4.45±0.07 ^{ab}	3.51±0.35 ^{a-f}	88.56±2.12 ^{b-d}	73.25±1.97 ^{ab}
	3.13	5.17±0.65 ^{e-g}	4.69±0.54 ^{ab}	0.51±0.02 ^{d-f}	0.32±0.05 ^{bc}	4.25±0.11 ^{b-d}	2.90±0.64 ^{d-f}	86.99±0.74 ^a	81.60±1.91 ^{b-e}
	4.43	4.86±0.11 ^g	4.45±0.16 ^{ab}	0.54±0.01 ^{b-d}	0.23±0.03 ^{e-g}	4.05±0.16 ^{c-e}	3.45±0.49 ^{a-f}	97.17±3.43 ^{c-e}	72.87±8.10 ^{ef}
	5.2	6.08±0.16 ^a	4.51±0.28 ^b	0.55±0.03 ^{b-d}	0.16±0.03 ^h	4.24±0.25 ^{b-d}	3.45±0.39 ^{a-f}	81.77±2.68 ^{c-e}	65.88±4.74 ^{b-e}
	5.18	5.76±0.33 ^{a-d}	4.24±0.31 ^{a-c}	0.51±0.01 ^{de}	0.21±0.03 ^{f-h}	4.22±0.14 ^{b-d}	3.35±0.14 ^{b-f}	83.63±5.14 ^{b-d}	73.82±5.50 ^{b-e}
W3	Control	5.24±0.51 ^{e-g}	4.51±0.32 ^{ab}	0.41±0.02 ^{gh}	0.24±0.08 ^{d-g}	4.23±0.19 ^{b-d}	2.39±0.45 ^{c-f}	81.43±10.64 ^{ef}	67.91±12.56 ^{a-d}
	3.13	5.91±0.15 ^{a-c}	3.65±0.39 ^c	0.44±0.02 ^{gh}	0.30±0.03 ^{b-d}	3.79±0.04 ^{de}	3.83±0.06 ^{a-d}	77.68±4.87 ^f	75.57±2.34 ^{c-e}
	4.43	5.43±0.21 ^{c-f}	4.31±0.31 ^{a-c}	0.58±0.08 ^{a-c}	0.18±0.05 ^{gh}	4.37±0.13 ^{ab}	2.69±0.89 ^{ef}	72.18±7.48 ^{bc}	72.44±2.60 ^a
	5.2	5.49±0.34 ^{c-e}	4.36±0.23 ^{a-c}	0.40±0.05 ^h	0.15±0.02 ^h	3.85±0.32 ^{ef}	2.58±0.15 ^f	88.94±7.47 ^{c-e}	82.82±5.98 ^{a-c}
	5.18	5.08±0.17 ^{e-g}	4.27±0.78 ^{a-c}	0.44±0.03 ^{f-h}	0.30±0.06 ^{b-d}	3.61±0.28 ^f	3.67±1.17 ^{a-d}	84.89±7.32 ^{c-e}	77.33±10.00 ^{d-f}
F-test	**	**	**	**	**	**	**	**	**
%CV	6.30	11.86	8.65	17.99	4.85	18.63	6.54	8.43	

Values with different letters are significantly different at $P < 0.01$ probability levels by least significant difference (LSD) test and coefficient of variation (CV) values. W1 = 100% AW (FC), W2 = 2/3 AW, W3 = 1/3 AW