Table S1. The effect of irrigation and potassium fertilization on the total tuber yield (fresh matter basis) of the analyzed Jerusalem artichoke cultivars. Means with the same letters do not differ significantly at $P \leq 0.05$ in Tukey`s test.

Cultivar	Irrygation	Potassium fertilizer (kg K_2O ha^{-1})			Mean
		150	250	350	
Violette de Rennes	Not irrigated	24.74 c	33.43 bc	32.22 bc	30.13 c
	Irrigated	75.32 ab	49.09 bc	44.24 bc	56.21 b
Waldspindel	Not irrigated	33.16 bc	29.31 bc	46.54 bc	36.34 c
	Irrigated	55.48 abc	53.73 bc	63.45 ab	57.55 b
Topstar	Not irrigated	53.55 bc	43.01 bc	39.65 bc	45.41 bc
	Irrigated	92.20 a	75.59 ab	59.20 abc	75.64 a
Not irrigated		37.15 d	35.25 d	39.47 cd	37.29 b
Irrigated		74.32 a	59.47 ab	55.63 bc	63.14 a
Violette de Rennes		50.03 ab	41.26 b	38.23 b	43.17 b
Waldspindel		44.32 b	41.52 b	55.00 ab	46.94 b
Topstar		72.85 a	59.30 ab	49.43 ab	60.53 a
Mean		55.73 a	47.36 a	47.55 a	

Table S2. The effect of irrigation and potassium fertilization on the total tuber yield (dry matter basis) of the analyzed Jerusalem artichoke cultivars. Means with the same letters do not differ significantly at $P \leq 0.05$ in Tukey`s test.

Cultivar	Irrygation	Potassium fertilizer (kg K_2O ha^{-1})			Mean
		150	250	350	
Violette de Rennes	Not irrigated	5.74 b	6.45 b	6.97 b	6.38 d
	Irrigated	14.70 ab	10.47 b	8.67 b	11.29 bc
Waldspindel	Not irrigated	8.84 b	7.68 b	12.18 b	9.57 cd
	Irrigated	15.76 a	13.71 ab	15.24 ab	14.90 ab
Topstar	Not irrigated	12.09 b	10.54 b	9.29 b	10.64 c
	Irrigated	19.51 a	21.48 a	12.18 b	17.72 a
Not irrigated		8.89 c	8.40 c	9.30 c	8.86 b
Irrigated		16.66 a	15.22 ab	12.04 bc	14.64 a
Violette de Rennes		10.22 cd	8.72 cd	7.57 d	8.84 b
Waldspindel		12.30 cd	10.69 cd	13.71 bc	12.24 a
Topstar		15.80 b	16.01 a	10.73 cd	14.18 a
Mean		12.77 a	11.81 a	10.67 a	

Table S3. The effect of irrigation and potassium fertilization on the above-ground biomass yield (fresh matter basis) of the analyzed Jerusalem artichoke cultivars. Means with the same letters do not differ significantly at $P \leq 0.05$ in Tukey`s test.

Cultivar	Irrygation	Potassium fertilizer (kg K_2O ha^{-1})			Mean
		150	250	350	
Violette de Rennes	Not irrigated	43.83 bc	43.21 bc	44.44 bc	43.87 d
	Irrigated	89.50 a	58.64 bc	56.17 bc	68.10 ab
Waldspindel	Not irrigated	40.12 c	40.74 c	56.79 bc	45.88 d
	Irrigated	58.02 bc	57.41 bc	67.28 ab	60.90 bc
Topstar	Not irrigated	66.67 ab	51.23 bc	48.15 bc	55.35 cd
	Irrigated	88.27 a	70.99 a	69.14 a	76.13 a
Not irrigated		50.21 c	45.06 c	49.79 c	48.35 b
Irrigated		78.60 a	62.34 b	64.20 b	68.38 a
Violette de Rennes		66.67 ab	50.93 bc	50.31 c	55.97 b
Waldspindel		49.07 c	49.07 c	62.04 abc	53.39 b
Topstar		77.47 a	61.11 bc	58.64 bc	65.74 a
Mean		64.40 b	53.70 b	57.00 b	

Table S4. The effect of irrigation and potassium fertilization on the above-ground biomass yield (dry matter basis) of the analyzed Jerusalem artichoke cultivars. Means with the same letters do not differ significantly at $P \leq 0.05$ in Tukey`s test.

Cultivar	Irrygation	Potassium fertilizer (kg K_2O ha^{-1})			Mean
		150	250	350	
Violette de Rennes	Not irrigated	16.20 b	15.97 b	16.43 b	16.20 c
	Irrigated	33.11 a	21.69 ab	20.76 ab	25.19 ab
Waldspindel	Not irrigated	14.84 b	15.06 b	20.11 ab	16.67 c
	Irrigated	21.45 ab	21.23 ab	24.87 ab	22.52 b
Topstar	Not irrigated	24.65 ab	18.94 b	17.81 b	20.47 bc
	Irrigated	32.64 a	26.91 ab	25.57 ab	28.37 a
Not irrigated		18.56 bcd	16.66 d	18.12 cd	17.78 b
Irrigated		29.07 a	23.28 bc	23.73 ab	25.36 a
Violette de Rennes		24.65 ab	18.83 b	18.60 b	20.69 b
Waldspindel		18.15 b	18.15 b	22.49 ab	19.59 b
Topstar		28.65 a	22.92 ab	21.69 ab	24.42 a
Mean		23.82 a	19.97 b	20.93 ab	