Supplementary Information

Journal	Journal of Crop Science and Biotechnology
Title	Harvest index is a key trait for screening drought-tolerant potato genotypes (*Solanum tuberosum*)

Table S1: Mean comparison and significance for genotype by treatment in 15 potato genotypes under well-watered (WW) and water deficit (WD) conditions. The table presents the mean and significance analysis for chlorophyll concentration (SPAD), relative chlorophyll content (RCC), tuber dry weight (TDW; g), harvest index (HI), and tuber water use efficiency (WUET; g L^{-1}). The mean comparisons were performed using the Tukey method with a significance level at 0.05. The different letters displayed indicate significant differences between the means, highlighting variations among the genotypes in response to different treatments.

Genotype	Treatment	SPAD_29	SPAD_83	RCC	TDW	HI	WUE_T
G01	WW	57.68 abcd	41.32 abc	0.03 a	23.22 f	0.75 a	6.53 abc
G02	WW	58.63 abc	34.14 c	0.01 b	46.38 abcd	0.63 abc	6.73 abc
G03	WW	62.54 a	40.38 abc	0.01 b	51.39 abc	0.65 abc	7.32 ab
G04	WW	53.92 cd	41.82 abc	0.01 b	34 cdef	0.47 efg	4.31 ef
G05	WW	59.28 abc	42.42 ab	0 b	25.08 def	0.36 g	3.05 fg
G06	WW	56.16 abcd	36.54 bc	0 b	51.2 abc	0.58 bcde	5.35 cde
G07	WW	51.44 de	39.52 abc	0 b	63.83 ab	0.6 bcd	6.13 abcd
G08	WW	55.88 bcd	38.64 abc	0.01 b	29.87 def	0.55 bcdef	5.07 cde
G09	WW	55.54 bcd	38.54 abc	0.01 b	44.26 bcde	0.5 def	4.57 def
G10	WW	60.72 ab	45.06 a	0.01 b	28.39 def	0.43 fg	3.77 efg
G11	WW	61.66 ab	46.62 a	0.01 b	17.19 f	0.22 h	2.11 g
G12	WW	51.86 de	39.96 abc	0.01 b	25.03 ef	0.46 efg	4.01 ef
G13	WW	47.06 e	35 bc	0 b	52.51 abc	0.55 cdef	5.52 bcde
G14	WW	60.98 ab	35.18 bc	0 b	35.09 cdef	0.44 fg	4.03 efg
G15	WW	56.52 abcd	40.5 abc	0.01 b	66.8 a	0.68 ab	7.47 a
G01	WD	59.94 abc	36.62 d	0.06 a	15.5 cde	0.69 a	7.12 abc
G02	WD	55.82 bcde	40.14 cd	0.02 b	30.29 abcd	0.59 ab	7.64 ab
G03	WD	60.26 ab	40.6 cd	0.02 b	35.24 abc	0.67 a	8.59 a
G04	WD	56.2 bcde	45.9 bc	0.02 b	23.05 abcde	0.43 cde	4.61 ef
G05	WD	59.1 abcd	46.36 abc	0.01 b	16.68 bcde	0.35 de	3.42 f
G06	WD	55.68 bcde	42.1 cd	0.02 b	27.11 abcd	0.45 cd	5.27 de
G07	WD	50.46 ef	44.94 bc	0.01 b	36.53 ab	0.51 bc	5.78 cde
G08	WD	54.98 bcde	40.04 cd	0.01 b	26.55 abcde	0.58 ab	6.61 bcd
G09	WD	52.82 def	43.08 cd	0.02 b	21.65 abcde	0.41 cde	4.21 ef
G10	WD	63.2 a	51.72 ab	0.02 b	13.1 de	0.32 e	3.31 fg
G11	WD	59.3 abcd	54.56 a	0.02 b	6.06 e	0.14 f	1.52 g
G12	WD	54.2 bcde	44.82 bcd	0.02 b	14.32 de	0.41 cde	4.28 ef
G13	WD	46.8 f	40.42 cd	0.01 b	25.88 abcde	0.49 bc	5.42 cde
G14	WD	58.82 abcd	45.96 bc	0.01 b	23.96 abcde	0.39 cde	4.63 ef
G15	WD	53.5 cde	44.2 bcd	0.03 b	39.51 a	0.59 ab	7.1 abc

Table S2: Summary statistics and variance components for 18 traits under water deficit experiment in 15 potato genotypes. Standard deviation (std), Genetic variance (V.g), Error variance (V.e), and plot-based heritability (H2).

Trait	mean	std	min	max	V.g	V.e	H2
Chlorophyll concentration (SPAD) at 29 dap	56.36	4.14	46.93	61.96	16.2	9.19	0.88
Chlorophyll concentration (SPAD) at 59 dap	46.84	3.32	40.88	52.97	10.4	6	0.87
Chlorophyll concentration (SPAD) at 76 dap	43.88	3.6	39.03	52.1	11.43	15.04	0.75
Chlorophyll concentration (SPAD) at 83 dap	42.02	3.66	37.14	50.59	11.57	17.6	0.72
Plant height (cm)	141.19	13.62	111.4	161.3	169.19	163.2	0.81
Relative water content (%)	63.46	2.73	58.67	70.53	1.19	62.53	0.07
Leaf osmotic potential (MPa)	-2.55	0.1	-2.69	-2.39	0	0.17	0
Leaf dry weight (g)	14.62	4.17	3.42	20.03	16	14.12	0.82
Stem dry weight (g)	12.6	4.75	2.82	22.3	19.96	9.41	0.89
Root dry weight (g)	3.54	1.76	0.82	6.45	3.02	0.63	0.95
Tuber dry weight (g)	31.66	12.18	11.63	53.15	131.65	168.57	0.76
Tuber number (N°)	12.04	3.43	6	17.4	9.55	21.9	0.64
Total transpiration (mL)	6.18	1.39	2.77	8.37	1.49	4.53	0.57
Leaf area (cm^2)	4938.49	1467.31	1027.44	7072.8	1431807.63	7188488.76	0.44
Root length (cm)	32.85	4.72	24.6	39.5	20.57	16.6	0.83
Total dry biomass (g)	62.74	15.58	26.42	87.8	209.08	341.65	0.71
Harvest index (HI)	0.5	0.14	0.18	0.72	0.02	0	0.96
Specific leaf area ($cm^2\ g^{-1}$)	319.39	43.38	256.34	410.06	115.92	14981.6	0.03
Relative chlorophyll content (RCC)	0.01	0.01	0.01	0.04	0	0	0.8
Biomass water use efficiency ($g\ L^{-1}$)	10.35	0.92	9.21	12.12	0.64	1.54	0.62
Tuber water use efficiency ($g\ L^{-1}$)	5.19	1.7	1.81	7.95	2.83	0.73	0.94

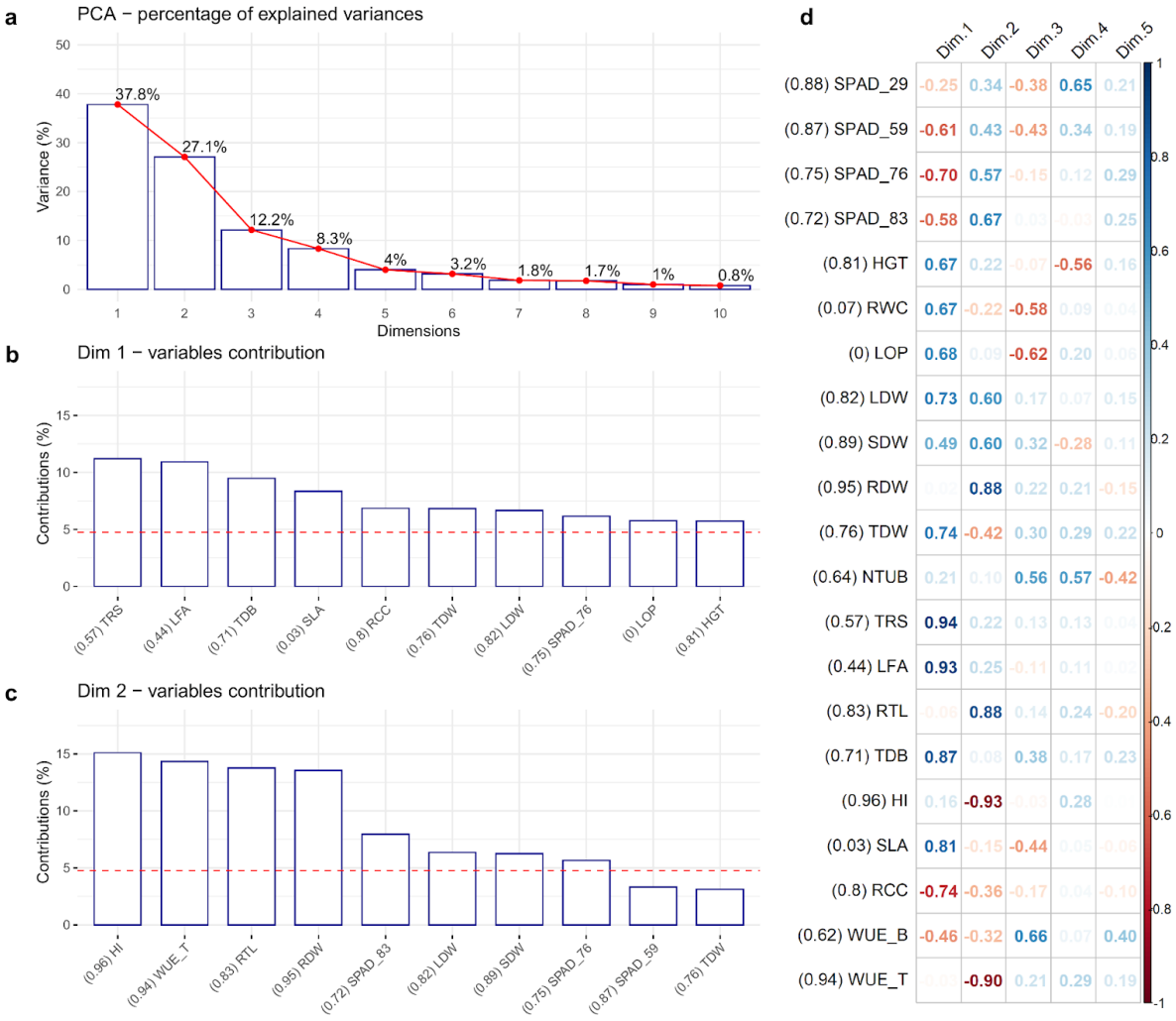

Fig. S1: Principal Component Analysis (PCA) from traits measured in 15 potato genotypes under well-watered (WW) and water deficit (WD) conditions. (a) Percentage of the explained variance for each dimension. (b) Variance contribution of the first 10 traits in dimension 1. (c) Variance contribution of the first 10 traits in dimension 2. (d) Correlation between the studied traits and among the first 5 dimensions. The reference dashed lines on the bar plot correspond to the expected value if the contribution between the traits were uniform.