Title	Impact of water deficit on growth, productivity, and water use efficiency in potato genotypes (*Solanum tuberosum* L.)
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Table S1: Summary statistics and variance components for water deficit experiment in 15 potatoes genotypes. Standard deviation (std), Genetic variance (V.g), and Error variance (V.e).

Trait	mean	std	min	max	V.g	V.e	repeatability
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 (cm2)	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 (cm2/g)	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)	10.35	0.92	9.21	12.12	0.64	1.54	0.62
Tuber water use efficiency (g/L)	5.19	1.7	1.81	7.95	2.83	0.73	0.94

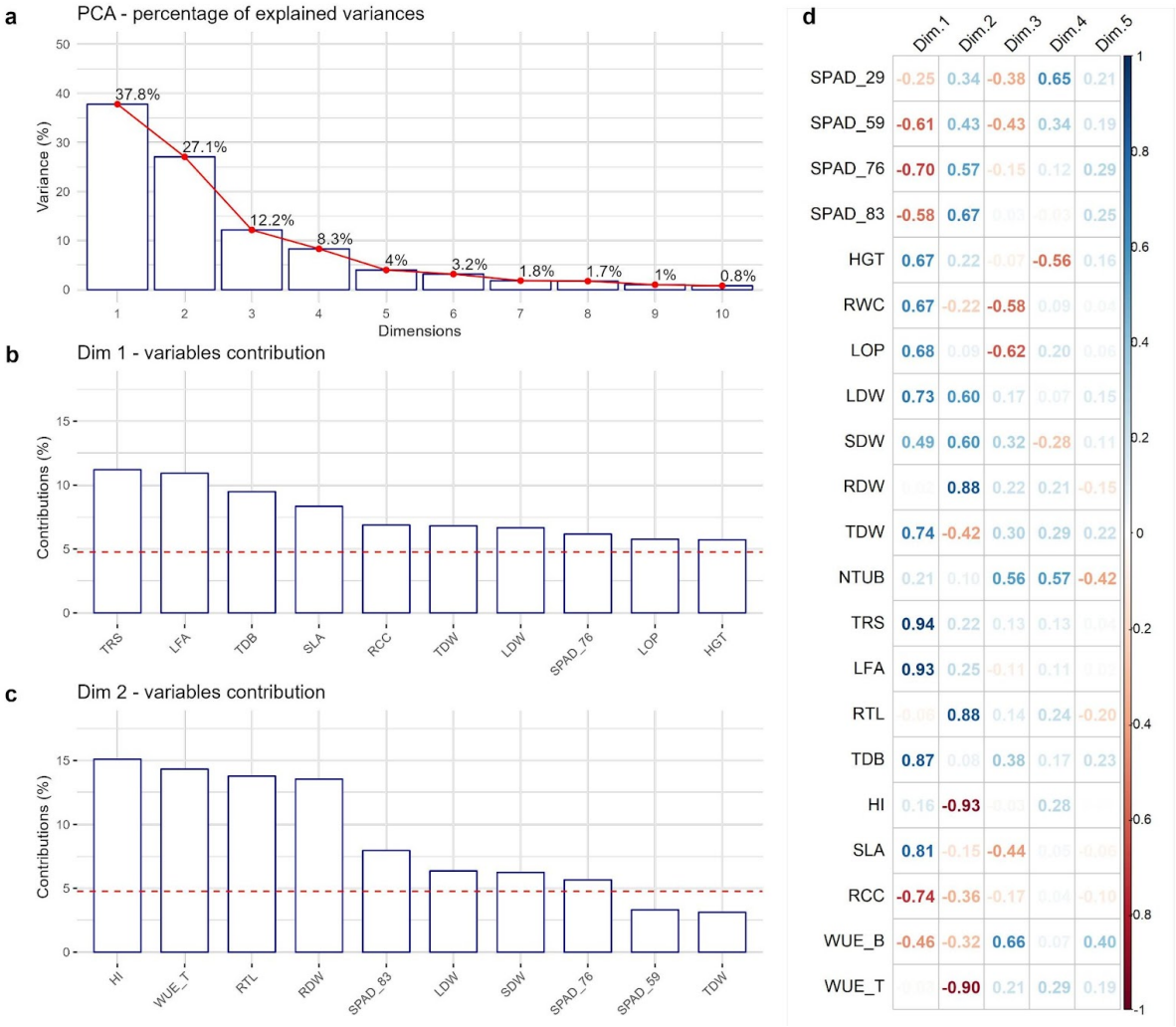

Fig. S1: Principal Component Analysis (PCA). (a) Percentage of the explained variance for each dimension. (b) Variance contribution of the first 10 traits in dimension 1. (c) Variance contribution of the first 10 traits in dimension 2. (d) Correlation between the studied traits and among the first 5 dimensions. The reference dashed lines on the bar plot correspond to the expected value if the contribution between the traits were uniform.

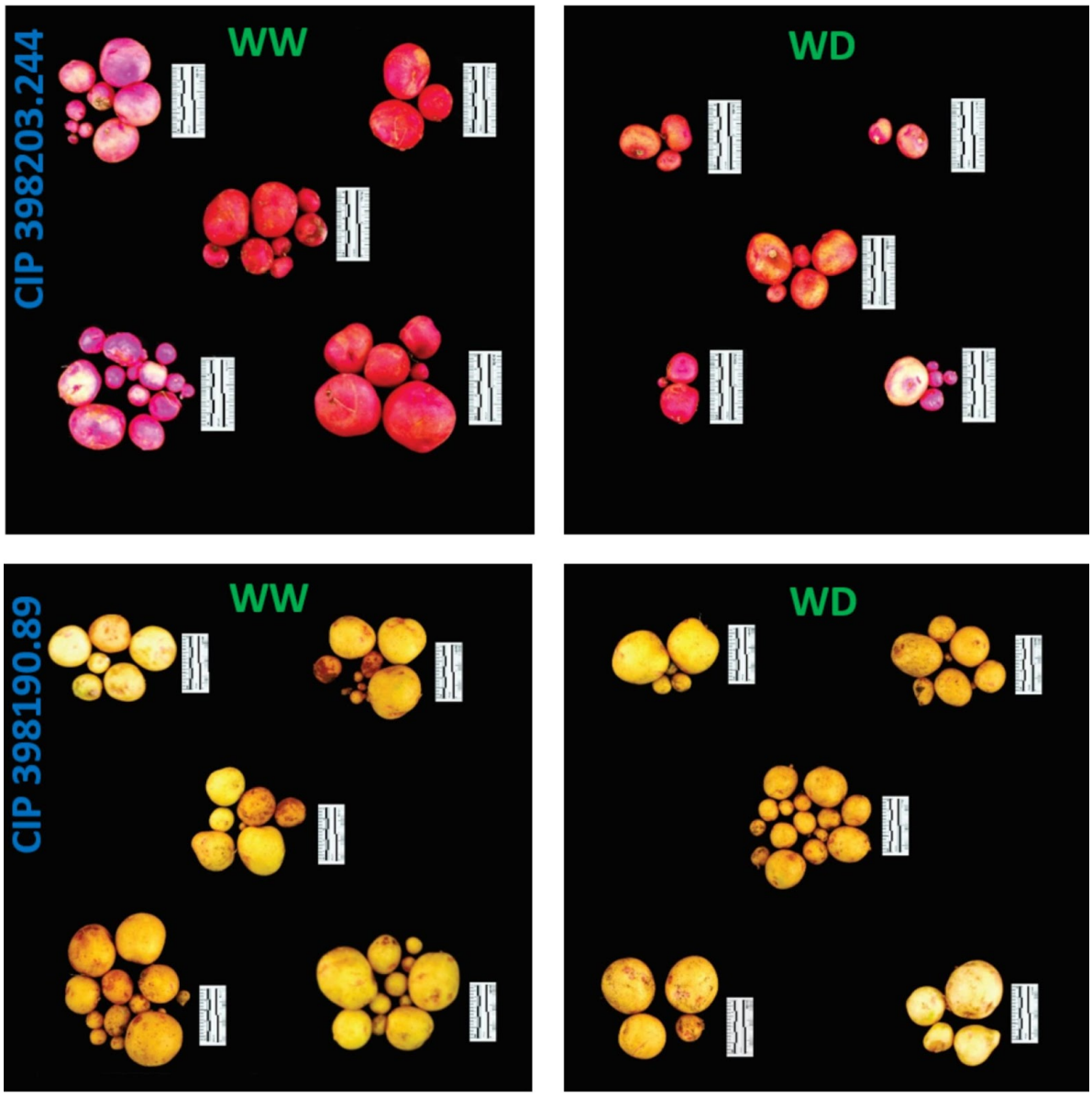

Fig. S2: Tuber yield performance from two contrasting potatoes genotypes. Genotype CIP 398203.244 with good performance under well-watered (WW) with reduced yields during water deficit (WD) conditions. Genotype CIP 398190.89 with good response under well-watered (WW) and water deficit (WD) treatment. Each group represent one replication (n = 5). Pictures were taken using the 5 cm scale (black/white segment = 1 cm) displayed alongside the tubers.