

Supplementary Information

Supplementary Table 1. The potato breeding lines and Cultivars used in the research.

Genotypes	Pedigree	General characteristics
MEÇ1301.20	98.120 x (98-428 x Cicero)	Selected as heat tolerant (Çalışkan et al. 2015)
MEÇ1302.05	C31-5-91 x 07-406	Selected as heat tolerant (Çalışkan et al. 2015)
MEÇ1302.18	C31-5-91 x 07-406	Selected as heat tolerant (Çalışkan et al. 2015)
MEÇ1302.20	C31-5-91 x 07-406	Selected as heat tolerant (Çalışkan et al. 2015)
MEÇ1305.05	99.214 x (Lady Rosetta x S440)	Selected as heat tolerant (Çalışkan et al. 2015)
MEÇ1406.07	01.509 x Latona	Selected as heat tolerant (Çalışkan et al. 2015)
MEÇ1407.05	(Gala x Challenger) x Alegria	Selected as heat tolerant (Çalışkan et al. 2015)
MEÇ1407.08	(Gala x Challenger) x Alegria	Selected as heat tolerant (Çalışkan et al. 2015)
MEÇ1407.17	(Gala x Challenger) x Alegria	Selected as heat tolerant (Çalışkan et al. 2015)
MEÇ1409.09	99.463 x Kolibri	Selected as heat tolerant (Çalışkan et al. 2015)
MEÇ1411.06	Lady Rosetta x Soleia	Selected as heat tolerant (Çalışkan et al. 2015)
MEÇ1501.02	06.62 x Hermes	Selected as drought tolerant (Çalışkan et al. 2020)
MEÇ1502.04	01.536 x Hermes	Selected as drought tolerant (Çalışkan et al. 2020)
MEÇ1502.15	01.536 x Hermes	Selected as drought tolerant (Çalışkan et al. 2020)
MEÇ1502.16	01.536 x Hermes	Selected as drought tolerant (Çalışkan et al. 2020)
MEÇ1502.21	01.536 x Hermes	Selected as drought tolerant (Çalışkan et al. 2020)
MEÇ1502.25	01.536 x Hermes	Selected as drought tolerant (Çalışkan et al. 2020)
MEÇ1504.01	Alegria x Amora	Selected as drought tolerant (Çalışkan et al. 2020)
MEÇ1505.02	Amora x CIP397039.51	Selected as drought tolerant (Çalışkan et al. 2020)
MEÇ1505.06	Amora x CIP397039.51	Selected as drought tolerant (Çalışkan et al. 2020)
MEÇ1505.07	Amora x CIP 397039.51	Selected as drought tolerant (Çalışkan et al. 2020)
MEÇ1525.02	Pomqueen x CIP397039.51	Selected as drought tolerant (Çalışkan et al. 2020)
MEÇ1525.03	Pomqueen x CIP397039.51	Selected as drought tolerant (Çalışkan et al. 2020)
MEÇ1525.17	Pomqueen x CIP397039.51	Selected as drought tolerant (Çalışkan et al. 2020)
MEÇ1530.02	Atlantic x CIP 397039.51	Selected as drought tolerant (Çalışkan et al. 2020)
Agria	Quarta x Semlo	Sensitive to heat and drought stresses, high yielding under non-stress conditions (Demirel et al. 2020)
Desiree	Urgenta x Depesche	Tolerant to drought stress, have high adaptability to diverse conditions (Demirel et al. 2020)
Petek	387521.3 x Aphrodite	Local potato cultivar with high yield potential under non-stress conditions
Russet Burbank	Burbank mutant 1	Sensitive to heat and drought stresses, high yielding under non-stress conditions (Demirel et al. 2020)

Supplementary Table 2: soil properties of the study area

Property	2022	2023
Texture	Silt Clay	Silt Clay
pH	8.01	7.93
Electrical conductivity (dS/m)	1.20	1.10
CaCO ₃ (g/kg)	23.40	22.85
Organic matter (g/kg)	2.65	2.75
Total N (g/kg)	0.13	0.15
P ₂ O ₅ (kg/ha)	9.87	9.86
K ₂ O (kg/ha)	198.95	200.05
Ca (mg/kg)	5583.00	5512.00
Mg (mg/kg)	522.50	541.30
Mn (mg/kg)	10.55	10.65
Fe (mg/kg)	3.20	2.98
Zn (mg/kg)	2.12	2.16
Cu (mg/kg)	1.24	1.18

Supplementary Table 3: average monthly relative humidity and total precipitation of the experimental area in both seasons.

Year	Month	Relative humidity (%)		Precipitation (mm)	
		Control	Heat	Control	Heat
2022	May	66.42	58.12	46.60	0
	June	61.93	53.38	103.60	0
	July	43.92	49.51	7.40	0
	August	42.15	39.11	1.40	0
	September	50.73	49.32	11.80	0
	October	65.74	59.71	6.80	0
				177.6	0
2023	May	62.95	57.43	26.80	0
	June	66.53	55.16	69.00	0
	July	40.61	33.37	10.60	0
	August	37.64	30.01	36.20	0
	September	47.83	41.41	27.20	0
	October	64.48	62.00	17.00	0
				186.8	0