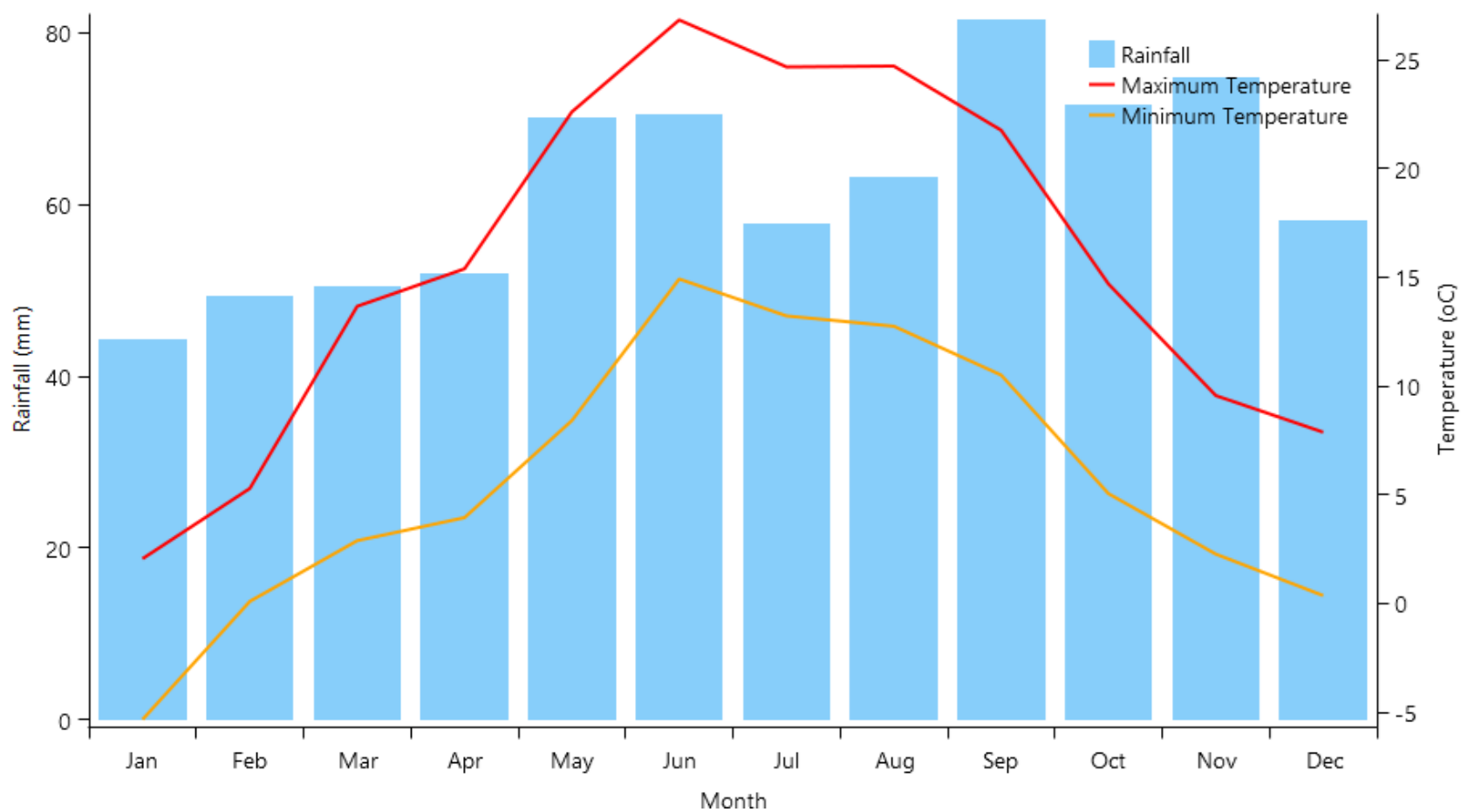


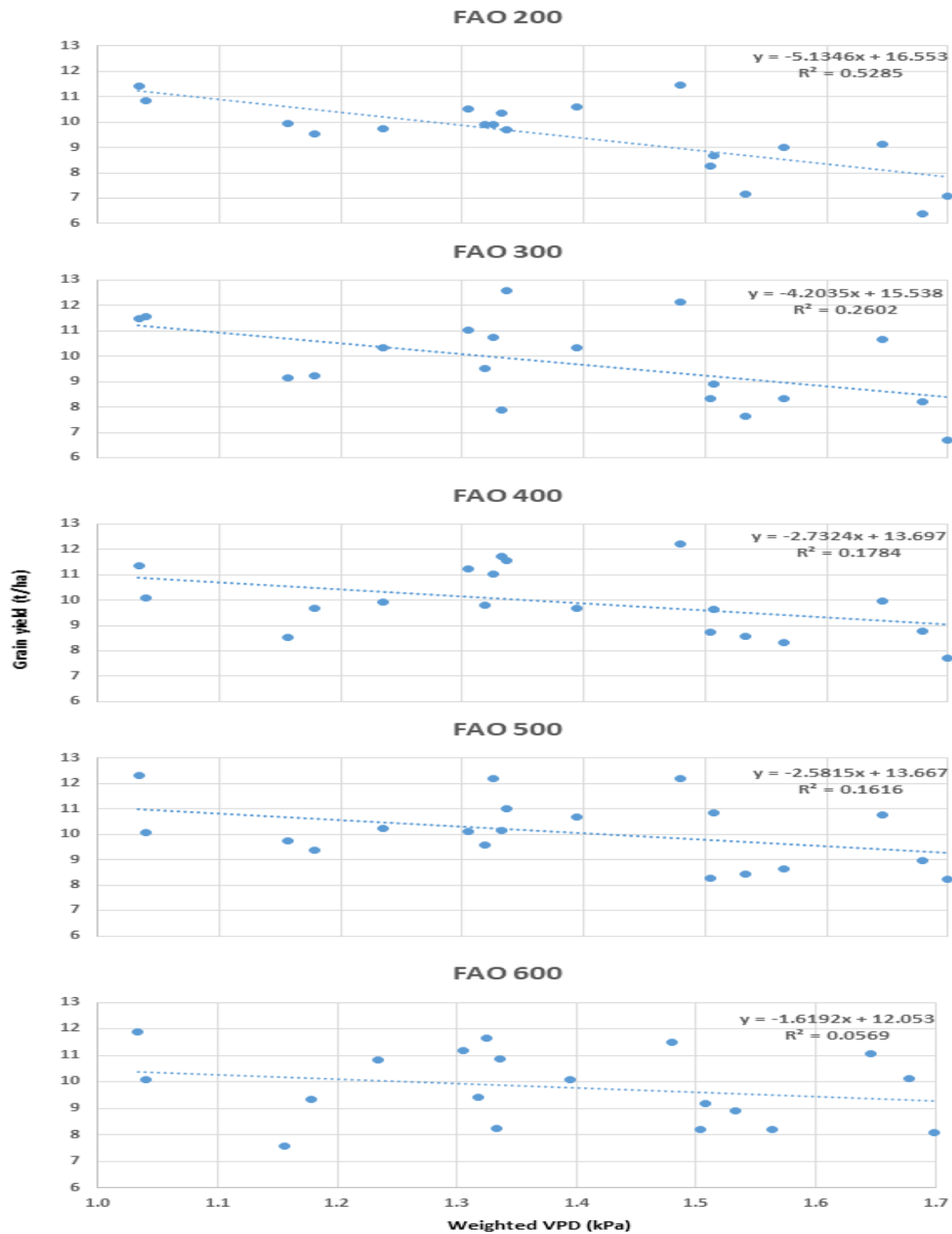
Supplementary Figure S1. Stress Degree Days (SDD) (Idso et al., 1981) for Zagreb (N 45.813; E 16.000) and Osijek (N 45.539 E 18.735) in Croatia in the period from 1961 to 2016



Supplementary Figure S2. Long term average climate data (1979-2019) for Rugvica near Zagreb, Croatia (N 45.6879; E 16.3094)

Supplementary Table S1. An overview of the field trials grown in Rugvica, Croatia (N 45.688; E 16.309) in the period 1996-2015 with number of entries (NoE), the annual means for grain yield (t/ha) and respective standard error (SE), and total mean with respective pooled error

Year	FAO 200		FAO 300		FAO 400		FAO 500		FAO 600	
	NoE	Mean±SE	NoE	Mean±SE	NoE	Mean±SE	NoE	Mean±SE	NoE	Mean±SE
1996	50	10.83±0.26	48	11.55±0.14	75	10.08±0.16	50	10.06±0.18	24	10.08±0.20
1997	50	9.92±0.28	50	10.73±0.28	72	11.02±0.17	48	12.19±0.25	24	11.66±0.28
1998	50	10.37±0.17	50	7.88±0.13	75	11.72±0.14	50	10.14±0.13	25	8.24±0.17
1999	50	9.69±0.19	50	12.60±0.15	75	11.55±0.13	50	11.03±0.19	25	10.88±0.27
2000	50	8.67±0.17	50	8.92±0.18	25	9.65±0.22	50	10.87±0.15	25	9.19±0.29
2001	46	10.46±0.23	63	11.33±0.22	107	11.26±0.14	63	10.04±0.16	40	11.32±0.23
2002	50	9.76±0.12	66	10.39±0.20	107	10.04±0.15	66	10.28±0.16	41	10.95±0.19
2003	23	7.10±0.19	36	6.60±0.15	49	7.73±0.15	37	8.15±0.14	31	7.98±0.20
2004	25	10.60±0.30	41	10.49±0.23	57	9.41±0.32	41	10.77±0.23	41	10.14±0.15
2005	24	9.94±0.26	40	9.06±0.20	41	8.30±0.24	55	9.64±0.19	38	7.46±0.23
2006	25	9.91±0.22	41	9.41±0.16	41	9.12±0.19	56	9.49±0.13	39	9.40±0.15
2007	25	11.44±0.16	41	12.01±0.20	39	12.16±0.22	40	12.10±0.17	57	11.68±0.17
2008	25	9.01±0.22	41	8.29±0.18	57	8.35±0.13	41	8.65±0.12	41	8.26±0.11
2009	25	9.11±0.36	41	10.76±0.18	41	9.98±0.21	57	10.78±0.12	41	10.85±0.23
2010	25	9.54±0.25	41	9.13±0.18	41	9.64±0.15	57	9.42±0.10	66	9.37±0.11
2011	25	6.40±0.22	41	8.26±0.21	41	8.82±0.20	82	9.12±0.14	41	10.13±0.15
2012	25	10.13±0.24	41	10.23±0.20	41	9.46±0.23	82	9.64±0.11	41	9.13±0.15
2013	25	8.29±0.27	41	8.18±0.17	82	8.72±0.09	41	8.29±0.14	41	8.15±0.16
2014	25	11.42±0.32	41	11.38±0.29	98	10.93±0.16	41	12.15±0.23	41	11.86±0.22
2015	25	7.16±0.20	41	7.54±0.14	66	8.41±0.10	16	8.45±0.26	16	8.90±0.18
Total mean		9.49±0.23		9.74±0.19		9.82±0.18		10.06±0.16		9.78±0.19



Supplementary Figure S3. Relationship between grain yield and weighted vapor pressure deficit (VPD) across five maturity groups (FAO 200 – FAO 600) in the experiment during the period of 1996 to 2015