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Agronomic performance of 21 new disease resistant winegrape varieties grown in northeast Italy

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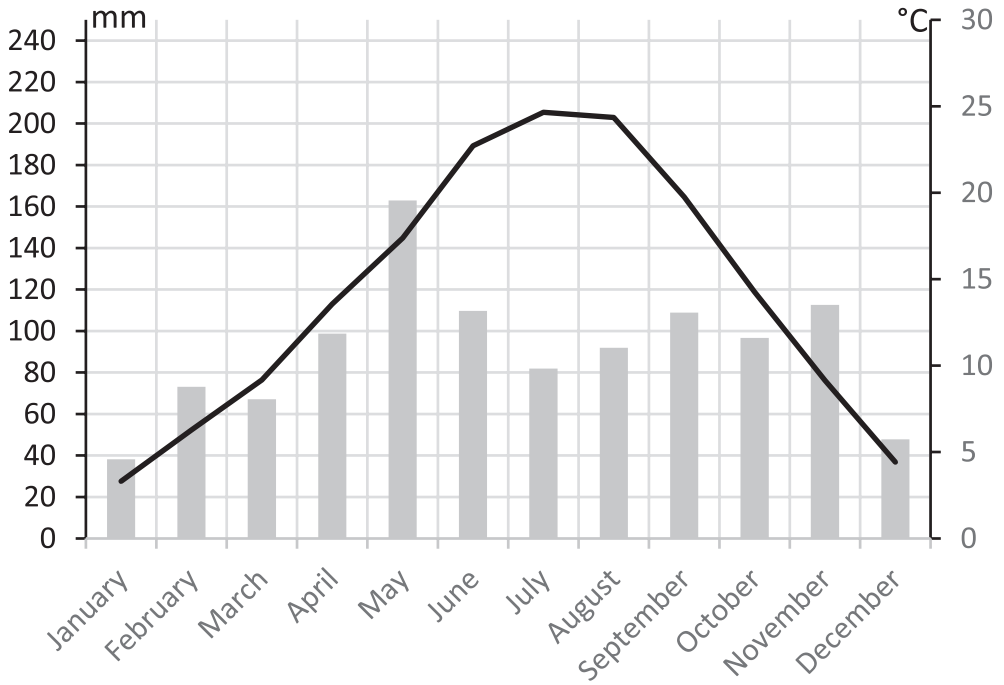
Supplementary material



Supplementary Fig. 1: Castelfranco Veneto: monthly average temperature (T °C, line) and rainfall summation (R mm, histogram) for the period 2015-2021; average annual rainfall = 1089 mm

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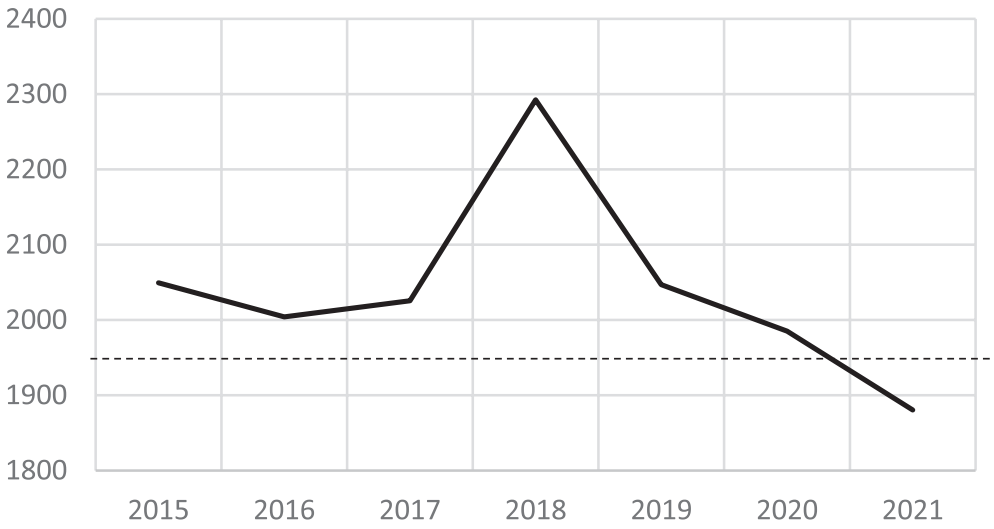
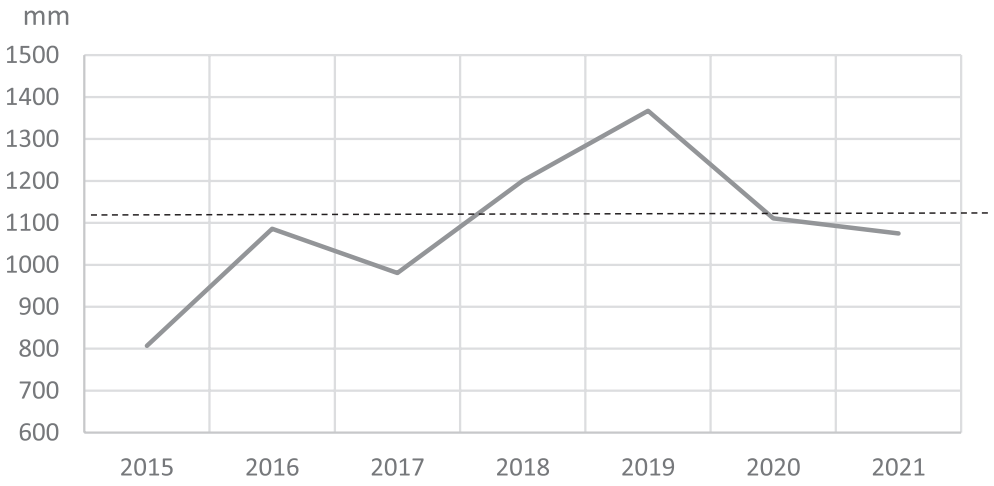


Supplementary Fig. 2: Castelfranco Veneto: heat summation ∑ DD (Apr-Oct) for the 7 experimental years and the average value of the period 1994-2021 (dotted line = 1960 ∑ DD). DD: Degree-Days (°C)



Supplementary Fig. 3: Castelfranco Veneto: annual rainfall for the 7 experimental years and the average value of the period 1994-2021 (dotted line = 1130 mm).

		Monarch	
Bud burst		UD 31.103	
		Vinera	Cabernet Carbon
		Cabernet Volos	Merlot Kanthus
		Julius	**Merlot**
	Prior	Merlot Khorus	Cabernet Eidos
April			
1st week	*2nd week*	*3rd week*	*4th week*
Glera	Sauvignon Nepis	Fleurtai	Aromera
	Muscaris	Souvignier gris	Soreli
		Solaris	Sauvignon Rytos
		Sauvignon Krethos	
		Johanniter	
		Bronner	

Supplementary Fig. 4: Graphic representation of bud burst time for the red (above) and the white (below) varieties.

		Merlot		
Ripening		Monarch		
	Julius	Cabernet Carbon		
	Merlot Kanthus	Prior	Cabernet Eidos	
UD 31.103	Cabernet Volos	Merlot Khorus	Vinera	
August				*September*
1st week	*2nd week*	*3rd week*	*4th week*	*1st week*
Solaris	Sauvignon Krethos	Aromera		**Glera**
Muscaris	Sauvignon Nepis			
	Fleurtai			
	Johanniter			
	Bronner			
	Souvignier gris			
	Soreli			

Supplementary Fig. 5: Graphic representation of ripening time for the red (above) and white (below) varieties.

Supplementary Table 1: Black rot damage (%) in young leaves and clusters of the red varieties, assessed mid-July 2017, according to Townsend and Heuberger (1943) formula

Damage %	**2017**			
Varieties	**Black rot leaves**		**Black rot clusters**	
Monarch	0.0	a	5.0	
Prior	0.8	ab	20.7	
Vinera	12.5	bc	20.8	
Julius	25.0	c	16.7	
UD 31103	2.4	ab	11.7	
Cabernet Carbon	8.3	ab	14.2	
Cabernet Volos	9.2	ab	12.5	
Cabernet Eidos	0.8	a	5.0	
Merlot Khorus	5.8	ab	16.7	
Merlot Kanthus	1.7	a	20.8	
MERLOT	0.0	a	0.0	
F Variety (V)	*4.87*	**	*0.48*	*ns*

F (Fisher statistic), ns = not significant, * = significant $p < 0.05$, ** = significant $p < 0.01$; the values followed by different letters were significantly different according to the Fisher and Duncan tests calculated on the angular transformations of the %.

Supplementary Table 2: Black rot damage (%) in young leaves and clusters of the white varieties, assessed mid-July 2017, according to Townsend and Heuberger (1943) formula

Damage %	**2017**			
Varieties	**Black rot leaves**		**Black rot clusters**	
Solaris	0.0	a	1.7	a
Joahnniter	12.5	ab	30.0	cde
Muscaris	0.0	a	0.0	a
Bronner	0.8	a	2.5	a
Aromera	21.7	bcd	25.0	bcd
Souvignier Gris	0.0	a	0.0	a
Soreli	20.8	bc	41.7	de
Fleurtai	33.3	d	33.3	de
Sauvignon Rytos	5.0	a	8.3	ab
Sauvignon Nepis	5.0	a	14.2	abc
Sauvignon Kretos	25.0	de	45.8	e
GLERA	0.0	a	0.0	a
F Variety (V)	14.37	**	13.19	**

F (Fisher statistic), ns = not significant, * = significant $p < 0.05$, ** = significant $p < 0.01$; the values followed by different letters were significantly different according to the Fisher and Duncan tests calculated on the angular transformations of the %.