SUPPLEMENTARY DATA
Dewasme, C., Avezedo, W., & Gambetta, G. (2024). Vineyard age-specific cohorts display similar climate x esca relationships but suggest hidden drivers in younger vineyards. OENO One, 58(2).
https://doi.org/10.20870/oeno-one.2024.58.2.7818

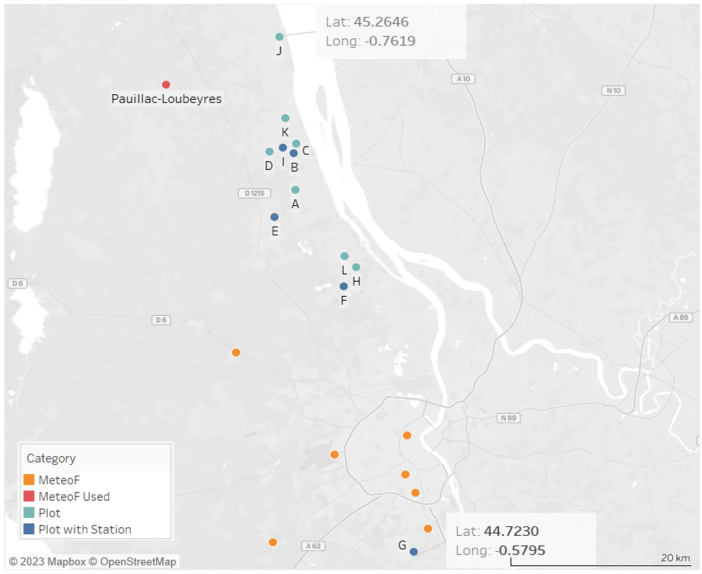
SUPPLEMENTARY DATA

Supp. Table 1. Key Plot Data

Plot Code	Year Planted	Inter-row	Intra-row	Varietal	Rootstock	Soil texture	Lat (dec)	Long (dec)
A	1995	1.50 m	1.00 m	CS	101-14 MGt	Sandy Loam	45.105	- 0.746
B	1996	1.20 m	1.00 m	CS	3309 C	Gravelly Sandy	45.143	- 0.747
C	1987	1.50 m	1.00 m	CS	101-14 MGt	Gravelly Sandy	45.153	- 0.744
D	1988	1.00 m	1.00 m	CS	SO4	Sandy	45.145	- 0.782
E	1989	1.50 m	1.00 m	CS	101-14 MGt	Clayey	45.077	- 0.774
F	1998	1.20 m	1.00 m	CS	101-14 MGt	Gravelly Sandy	45.005	- 0.677
G	1992	1.00 m	1.00 m	CS	420A MGt	Sandy	44.728	- 0.578
H	1995	1.00 m	1.00 m	CS	3309 C	Gravelly Sandy	45.025	- 0.659
I	1985	1.15 m	1.00 m	CS	101-14 MGt	Gravelly Sandy	45.149	- 0.763
J	1979	1.15 m	1.15 m	MN	5BB	Clayey	45.263	- 0.768
K	1960	1.15 m	1.00 m	CS	3309 C	Gravelly	45.179	- 0.760
L	1997	1.00 m	1.00 m	CS	101-14 MGt	Sandy	45.036	- 0.676

(CS= Cabernet Sauvignon; MN = Merlot noir)

Supp. Figure 1. Plot locations in green and blue dots, with the available MeteoFrance stations in the region shown in orange and used MeteoFrance stations in red dots. Table shows the aerial distance in km between each plot in the study and the closest most complete weather station in km.



Plot	Weather data used	Distance Plot to Weather Station (km)
A	Station on plot E	3.9
B*	Station on plot B	<1.0
C	Station on plot B	1.1
D	Station on plot I	1.6
E*	Station on plot E	<1.0
F*	Station on plot E	11.0
G*	Station on plot G	<1.0
H	Station on plot E	10.7
I*	Station on plot I	<1.0
J	MeteoFrance Station Pauillac	13.6
K	Station on plot I	3.4
L	Station on plot E	8.9

* indicates a plot with its own complete weather station

Color in last column show weather data closeness to plot (smaller distances = green. larger distances = red)

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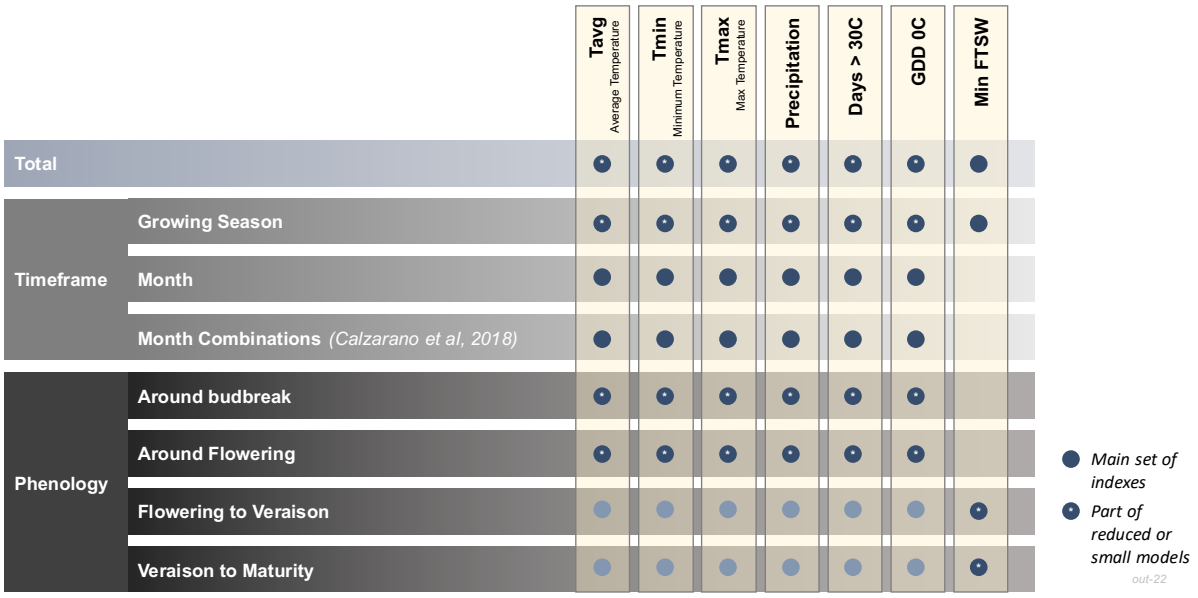
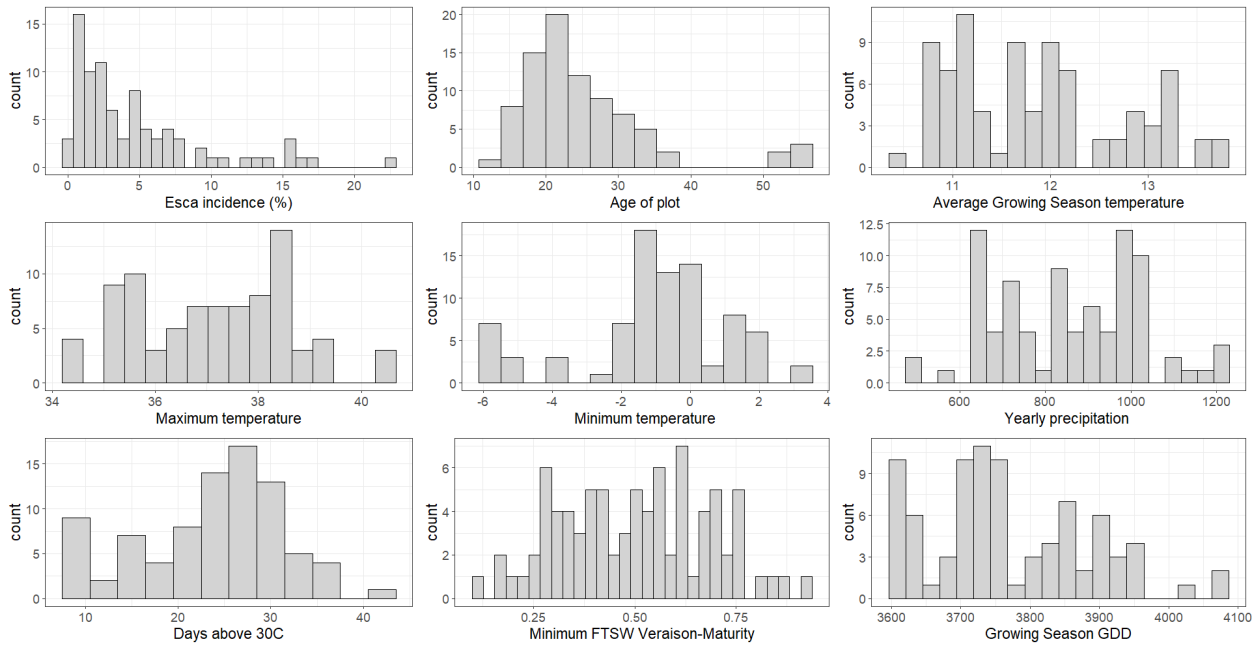
Supp. Table 2. Schematic set of indexes analyzed. The final index database, comprising 108 observations of 130 variables was subject to a series of analytical approaches that aimed at explaining the climate drivers of variation in the incidence of esca per plot in different years.



Supp. Figure 2. Major variables and their distributions on the database.



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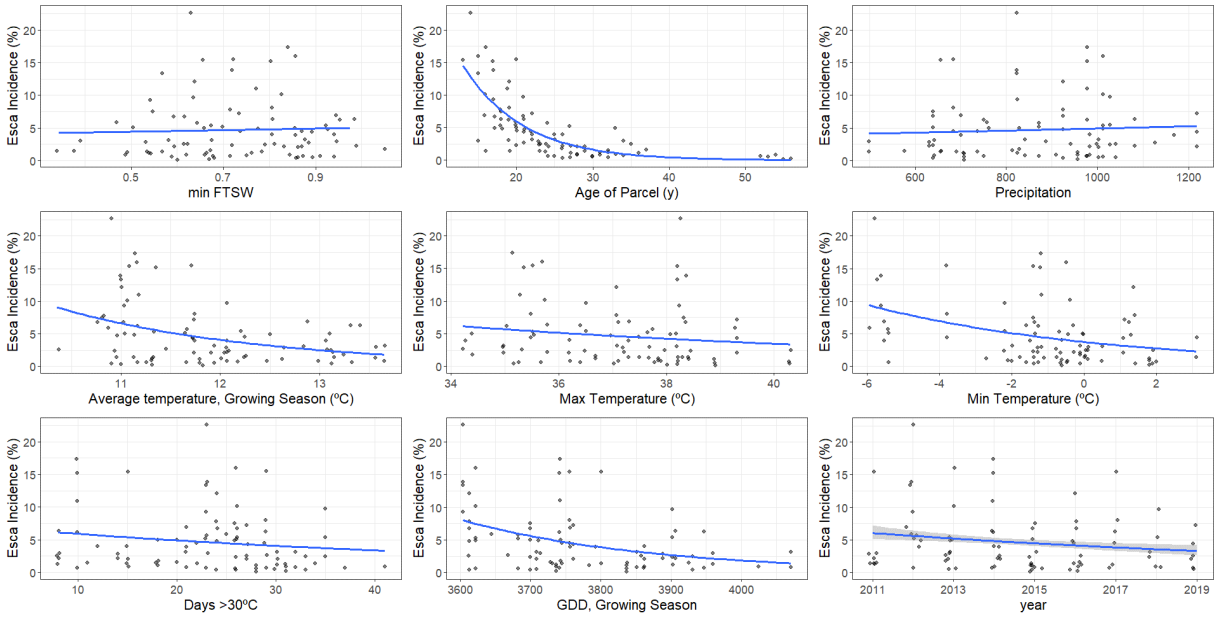
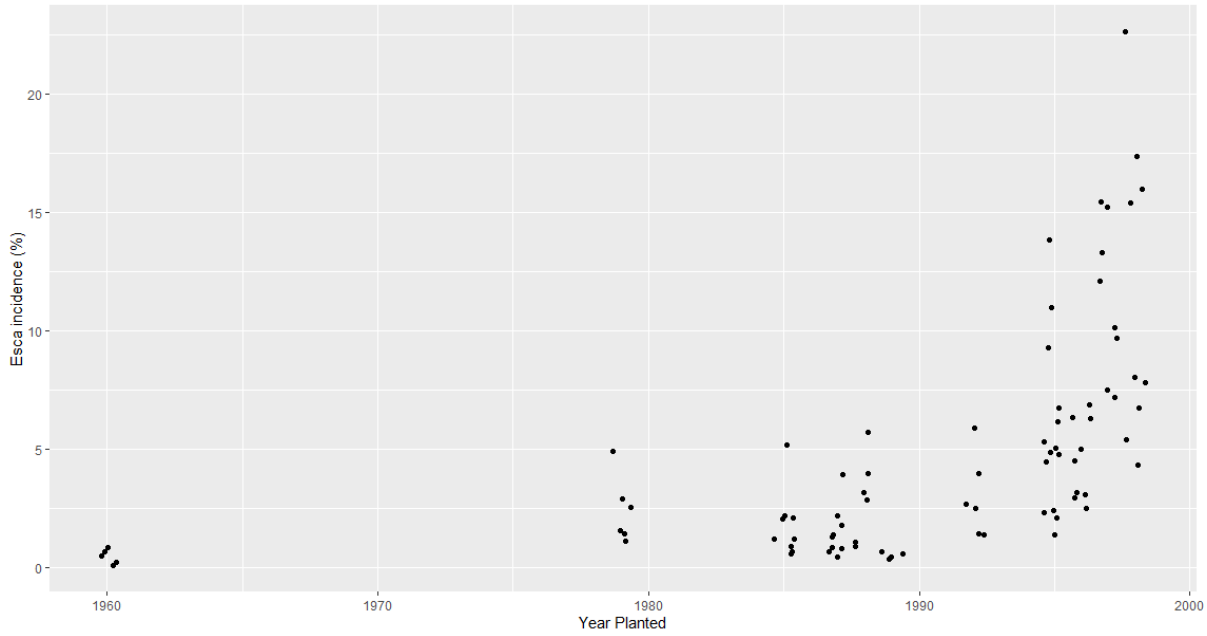
Supp. Figure 3. Esca incidence vs different variables, visualized in flexplots versus each major variable, where the blue line is a Poisson model fit.



Supp. Figure 4. Esca incidence vs year planted, jitter added to prevent overplotting.



Supp. Table 3. Stepwise regression results, all indices – Initial model.

	Esca Incidence			
Predictors	*Estimates*	*Conf. Int (95%)*	*P-Value*	
Intercept	75.89	42.43 – 109.34	< 0.001	***
Age of Plot	-0.27	-0.35 – -0.18	< 0.001	***
Min FTSW Flowering-veraison	-16.25	-27.81 – -4.70	0.006	**
Min Temperature. July (°C)	1.08	0.21 – 1.94	0.015	*
Min Temperature. August (°C)	-1.09	-1.97 – -0.20	0.017	*
Precipitation. April (mm)	0.03	0.01 – 0.05	0.004	**
Precipitation. July (mm)	-0.09	-0.16 – -0.01	0.024	*
Max Temperature, June (°C)	-0.40	-0.70 – -0.10	0.011	*
Max Temperature, July (°C)	-0.51	-1.17 – 0.14	0.124	
Max Temperature, August (°C)	-0.56	-0.92 – -0.20	0.002	**
Days >30°C, May	1.28	0.38 – 2.18	0.006	**
Observations	85			
R^2 / R^2 adjusted	0.542 / 0.480			
Significance Level noted as	*** p < 0.001, ** p < 0.01, * p < 0.05			
Studentized Breusch-Pagan test	BP = 7.958, df = 10, p-value = 0.6329			

Supp. Table 4. Full dataset GLM Results before clustering, when we see Age of Plot as one of the most important predictors of the model, explaining close to 90% of the variance.

	Esca Incidence			
Predictors	*Estimates*	*Conf. Int (95%)*	*P-Value*	
(Intercept)			**< 0.001**	***
Age of Plot	0.92	0.91 – 0.92	**< 0.001**	***
Average Temperature around Budbreak (ºC)	1.05	1.05 – 1.05	**< 0.001**	***
GDD Parker 0C	1.00	1.00 – 1.00	**< 0.001**	***
Minimum Temperature (ºC)	0.95	0.94 – 0.95	**< 0.001**	***
Min FTSW Veraison to Maturity	0.22	0.22 – 0.22	**< 0.001**	***
Precipitation, April (mm)	1.01	1.00 – 1.01	**< 0.001**	***
Precipitation, May (mm)	1.01	1.00 – 1.01	**< 0.001**	***
Precipitation, July (mm)	0.99	0.99 – 0.99	**< 0.001**	***
Max Temperature, July (ºC)	0.90	0.90 – 0.90	**< 0.001**	***
Max Temperature, August (ºC)	0.89	0.88 – 0.89	**< 0.001**	***
Random Effects				
σ^2	0.17			
$\tau_{00\ randomvar}$	0.19			
ICC	0.52			
$N_{\ randomvar}$	61			
Observations	85			
Marginal R^2 / Conditional R^2	0.733 / 0.872			
Significance Level noted as	*** p < 0.001, ** p < 0.01, * p < 0.05			

Supp. Table 5. Cluster 2 (older plants) results.

	Esca Incidence			
Predictors	*Estimates*	*Conf. Int (95%)*	*P-Value*	
(Intercept)	11.36	4.66 – 18.06	**0.002**	**
Min FTSW Flowering-Veraison	-5.45	-9.20 – -1.70	**0.006**	**
Precipitation, April (mm)	0.02	0.01 – 0.03	**< 0.001**	***
Precipitation, June (mm)	-0.01	-0.02 – 0.00	0.085	.
Precipitation, July (mm)	0.03	0.02 – 0.05	**< 0.001**	***
Precipitation, August (mm)	-0.02	-0.03 – -0.00	**0.045**	*
Days > 30ºC, May	0.44	0.20 – 0.68	**0.001**	***
Days > 30ºC, June	-0.08	-0.18 – 0.01	0.080	.
Max Temperature, August (ºC)	-0.17	-0.28 – -0.06	**0.004**	**
Observations	39			
R^2 / R^2 adjusted	0.809 / 0.758			
Significance Level noted as	*** p < 0.001, ** p < 0.01, * p < 0.05			
Studentized Breusch-Pagan test	BP = 11.909, df = 8, p-value = 0.1553			

Supp. Table 6. Results from Cluster 3 (more recent plantings).

	Esca Incidence			
Predictors	*Estimates*	*Conf. Int (95%)*	*P-Value*	
(Intercept)	61.12	-0.89 – 123.14	0.053	
Min FTSW Veraison-Maturity	-8.95	-19.27 – 1.36	0.087	
Precipitation, April (mm)	0.04	0.00 – 0.08	**0.047**	*
Precipitation, June (mm)	0.07	0.00 – 0.13	**0.048**	*
Precipitation, July (mm)	-0.20	-0.35 – -0.05	**0.010**	*
Precipitation, August (mm)	0.18	0.06 – 0.30	**0.004**	**
Max Temperature, May (ºC)	1.08	0.03 – 2.14	**0.044**	*
Max Temperature, June (ºC)	-1.42	-2.35 – -0.49	**0.004**	**
Max Temperature, July (ºC)	-1.16	-2.51 – 0.19	0.090	
Observations	41			
R^2 / R^2 adjusted	0.391 / 0.239			
Significance Level noted as	*** p < 0.001, ** p < 0.01, * p < 0.05			
Studentized Breusch-Pagan test	BP = 12.306, df = 8, p-value = 0.1381			