

BULLETIN

Campaigns 2026-27

February 2026

Seasonal & decadal predictions for Viticulture

Earth Sciences
Department



DESDE 1551
CODORNIU

www.aspect-project.eu

FROST PROTECTION SUMMARY

Below normal probability of spring frost in Catalunya

A below normal number of frost days is predicted in March-April 2026 across Catalunya, and the same applies to the region where the Raïmat vineyard is located. Decadal forecasts also show a lower than normal probability of having spring frost in March-April 2027.

WATER MANAGEMENT SUMMARY

Drier than normal growing season in Catalunya

Seasonal predictions show above normal average temperatures across Catalunya during the first half of the 2026 growing season (April-June), although no clear signal is predicted for precipitation and drought conditions.

Decadal forecasts indicate drier than normal conditions across Catalunya, and also in the region of Raïmat, during the growing seasons 2026-2027. Above normal average temperatures and growing degree days are also predicted across Catalunya. An above normal number of heatwaves (>3) is predicted in western regions, including the Raïmat vineyard, during the 2026 and 2027 growing seasons.



If you have queries or feedback, contact us:

hello-aspect@bsc.es



Funded by
the European Union

This project has received funding from the European Union's Horizon Europe research and innovation programme under Grant Agreement No 101081460. The sole responsibility for the content of this document lies with the ASPECT project and does not necessarily reflect the opinion of the European Union.



USER GUIDE

FROST PROTECTION INDICATORS

FROST DAYS (FD)

Number of days with minimum temperature below 0°C between March 1st and April 30th

GROWING DEGREE DAYS (GDD)

Accumulated sum of daily differences between daily mean temperature and 10°C (vegetative growth minimum temperature), excluding days with mean temperature above 30°C, between March 1st and April 30th

WATER MANAGEMENT INDICATORS

GROWING SEASON TOTAL PRECIPITATION

Total precipitation from April 1st to September 30th

GROWING SEASON AVERAGE TEMPERATURE

Average of daily average temperatures between April 1st and September 30th

STANDARDISED PRECIPITATION AND EVAPOTRANSPIRATION INDEX (SPEI)

Index that assesses water availability for the plants by comparing the balance between precipitation and potential evapotranspiration during the growing season of the vineyard (April-September). SPEI6 is useful to predict agricultural drought

GROWING DEGREE DAYS (GDD)

Accumulated sum of daily differences between daily mean temperature and 10°C (vegetative growth minimum temperature), excluding days with mean temperature above 30°C, between April 1st and September 30th

HEATWAVE

Count of times with at least 3 consecutive days when the daily maximum temperature exceeds 36°C between April 1st and September 30th

TIME SCALES

SEASONAL PREDICTIONS

Probabilistic forecasts of climate conditions for the next months and seasons. Results are shown for prediction systems with the best performance (best skill scores)

DECADAL PREDICTIONS

Probabilistic forecasts of climate conditions for the next years. Results are shown for prediction systems with the best performance (best skill scores)

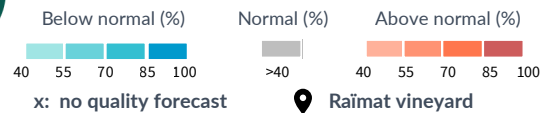
LEGENDS

PREDICTIONS

Climate predictions are shown using terciles, which represent three categories - below normal, normal, and above normal - and the probabilities of each category to occur. The most likely tercile refers to the tercile with more probability to occur. The 'normal' category refers to the average conditions for a variable or indicator in a particular time of the year. In the past, the probability of each tercile is considered to be the same (that is, one third). This is what we call the climatology

FORECAST QUALITY

No quality forecast (indicated with an X the maps) means that past predictions were not better than climatology, and it is indicated with a cross on the map. In these cases, the use of the climatology (or business as usual) is recommended. When the prediction has quality, it means that using the prediction is better than using the climatology. Note that it is possible that there is 'no quality' for a province (aggregated) but that some quality exists at the local level (e.g. vineyard)

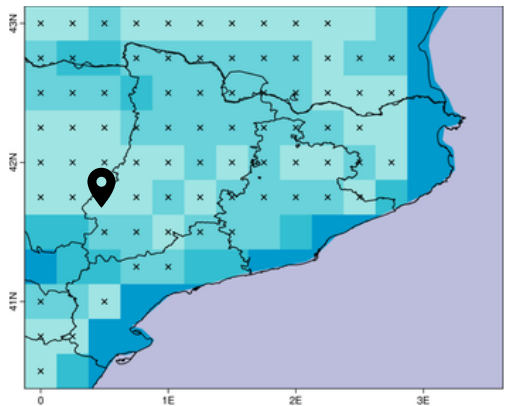


SEASONAL

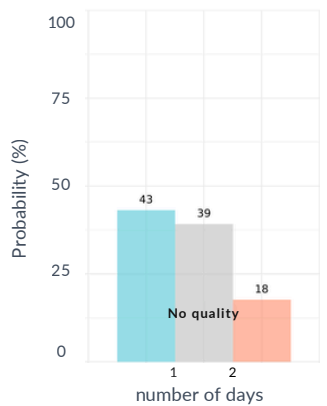
Prediction System: ECMWF S5 Model start date: Jan 1st 2026 Calibration method: Quantile mapping Reference dataset: ERA5 Reference period: 1993-2016

FROST DAYS

March 2026

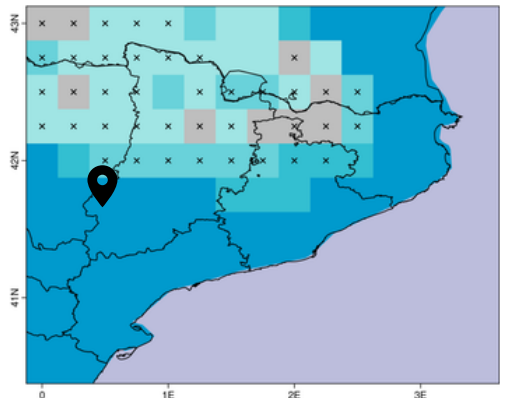


Raïmat vineyard

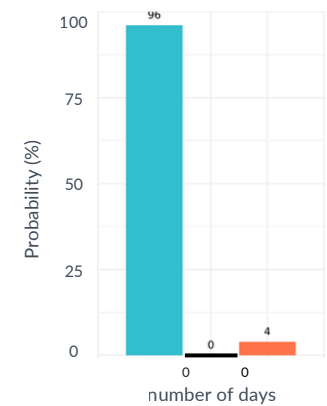


Higher probability of below normal number of frost days across Catalunya, with the forecast showing no quality in Raïmat. In Raïmat, the normal number of frost days in March is between 1 and 2.

April 2026



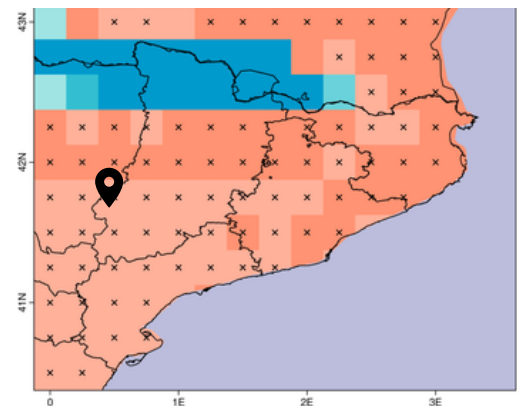
Raïmat vineyard



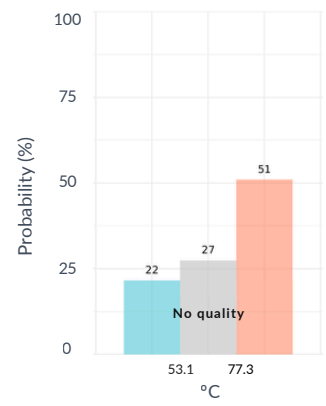
Higher probability of below normal number of frost days across Catalunya. Probability of 96% of zero frost days in April in the Raïmat vineyard. In Raïmat, the normal number of frost days in April is zero.

GROWING DEGREE DAYS

March 2026

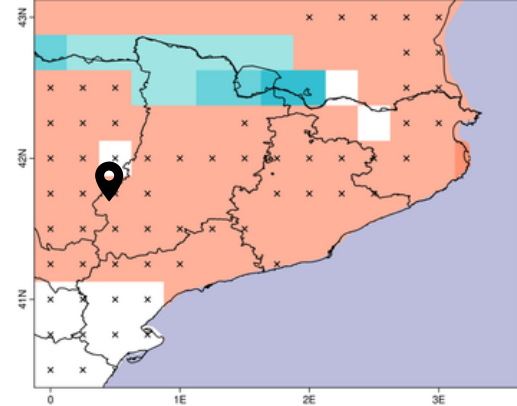


Raïmat vineyard

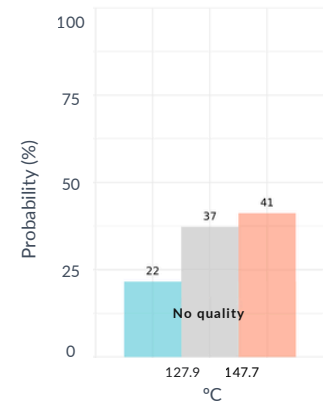


Higher probability of above normal growing degree days across Catalunya, except in the north-western part, with a below normal growing degree days. The forecast shows no quality in Raïmat. In Raïmat, the normal number of growing degree days in March is between 53.1 and 77.3.

April 2026



Raïmat vineyard



Higher probability of above normal growing degree days across Catalunya, except in the north-western part. The forecast shows no quality in Raïmat. In Raïmat, the normal number of growing degree days in April is between 127.9 and 147.7.



DECADAL

Prediction System: **Multi-model** Model start date: **January 2025** Calibration method: **Quantile mapping** Reference dataset: **ERA5Land** Reference period: **1991-2020**

FROST DAYS

2026 (March-April)

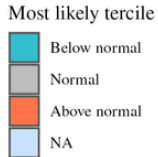


Higher probability of below normal number of frost days in all the regions of Catalunya in March-April 2026.

2027 (March-April)



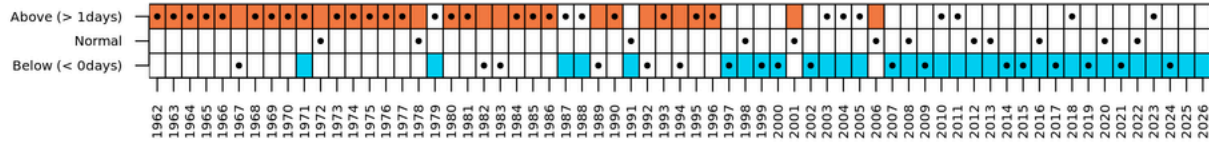
Higher probability of below normal number of frost days in all the regions of Catalunya in March-April 2027.



Raïmat vineyard

Time series showing observations and predictions of frost days in March-April in the Raïmat vineyard. The normal number of frost days in this period is one. Coloured squares show the predicted most likely tercile whereas black dots are observations.

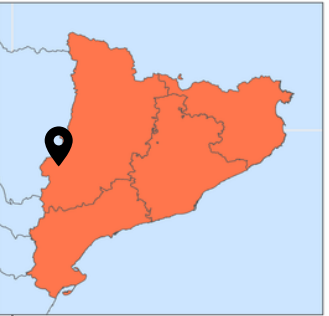
Some quality



Higher probability of below normal number of frost days (zero days) in the Raïmat vineyard in March-April 2026.

GROWING DEGREE DAYS

2026 (March-April)

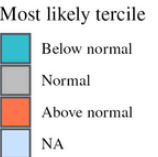


Higher probability of above normal growing degree days in all regions of Catalunya in March-April 2026.

2027 (March-April)



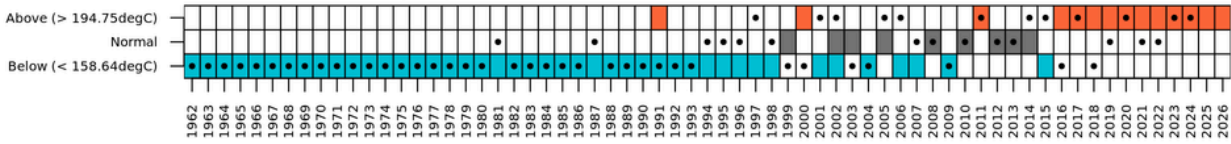
Higher probability of above normal growing degree days in all regions of Catalunya in March-April 2027.



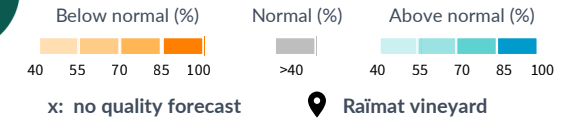
Raïmat vineyard

Time series showing observations and predictions of growing degree days in March-April in the Raïmat vineyard. The normal number of growing degree days in this period ranges between 158.6 and 194.7°C. Coloured squares show the predicted most likely tercile whereas black dots are observations.

High quality



Higher probability of above normal growing degree days (above 195°C) in the Raïmat vineyard in March-April 2026



SEASONAL

Seasonal prediction System: ECMWF S5

Model start date: Jan 1st 2026

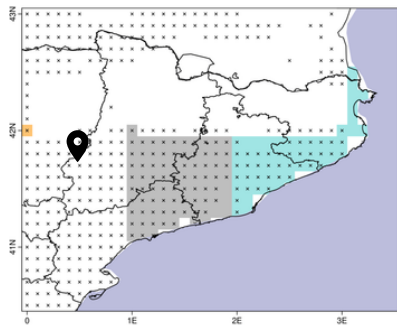
Calibration method: Quantile mapping

Reference dataset: ERA5

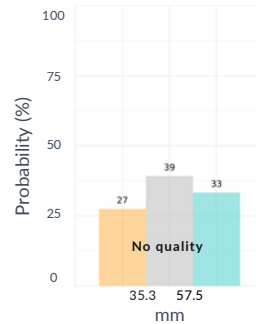
Reference period: 1993-2016

TOTAL PRECIPITATION

April 2026

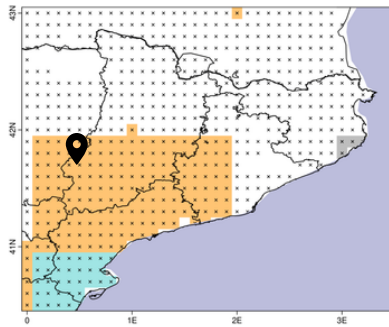


Raïmat vineyard

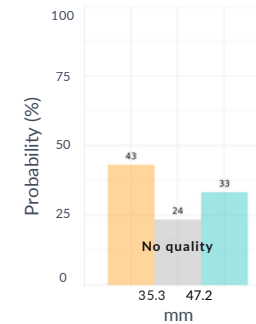


Higher probability of normal precipitation in the central region of Catalunya and above normal precipitation in the north east. Forecast showing no quality in the Raïmat vineyard. The normal precipitation in April in Raïmat ranges between 35.3 and 57.5 mm.

May 2026

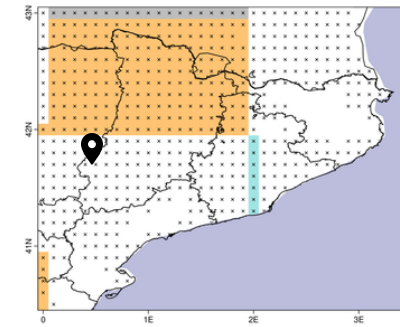


Raïmat vineyard

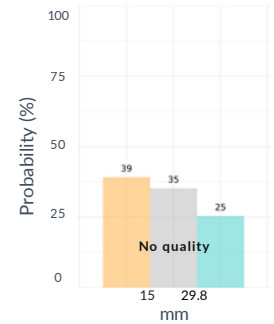


Higher probability of below normal precipitation in the central western region of Catalunya and above normal precipitation in the south. Forecast showing no quality in the Raïmat vineyard. The normal precipitation in May in Raïmat ranges between 35.3 and 47.2 mm.

June 2026

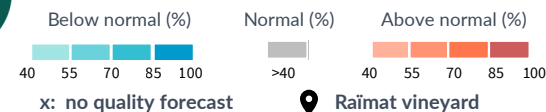


Raïmat vineyard



Higher probability of below normal precipitation in the north-western region of Catalunya. Forecast showing no quality in the Raïmat vineyard. The normal precipitation in June in Raïmat ranges between 15 and 29.8 mm.

Note: The seasonal predictions provide a 6 months view into the future. Predictions for the following months will be included in next bulletins



SEASONAL

Seasonal prediction System: ECMWF S5

Model start date: Jan 1st 2026

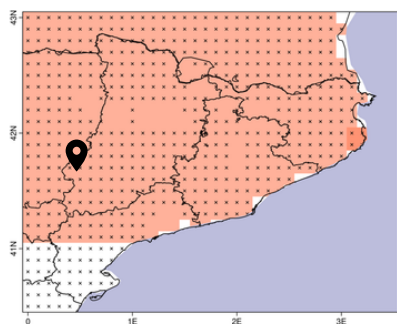
Calibration method: Quantile mapping

Reference dataset: ERA5

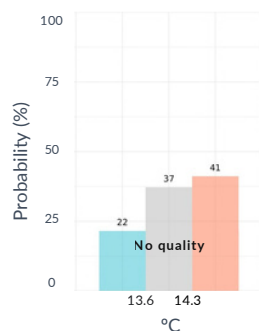
Reference period: 1993-2016

AVERAGE TEMPERATURE

April 2026

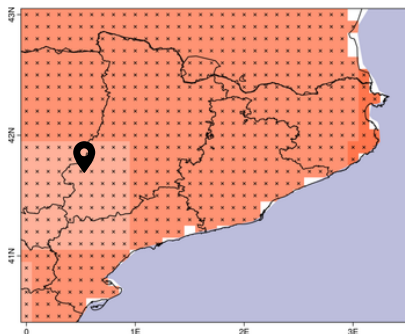


Raïmat vineyard



Higher probability of above normal temperature across Catalunya. Forecast showing no quality in the Raïmat vineyard. The normal average temperature in April in Raïmat ranges between 13.6 and 14.3 °C.

May 2026

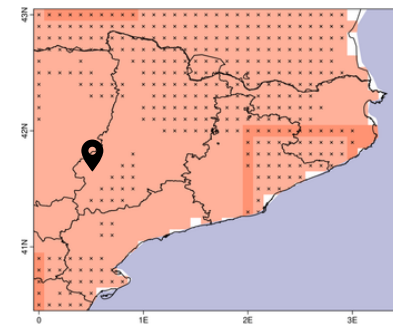


Raïmat vineyard

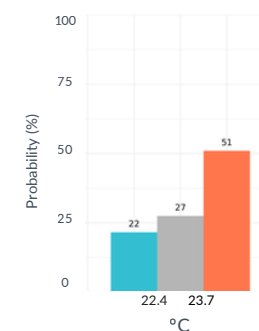


Higher probability of above normal temperature across Catalunya. Forecast showing no quality in the Raïmat vineyard. The normal average temperature in May in Raïmat ranges between 17.4 and 18.8 °C.

June 2026

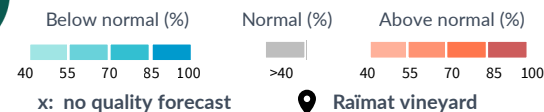


Raïmat vineyard



Higher probability of above normal temperature across Catalunya. 51% probability of having higher than normal temperature in the Raïmat vineyard, exceeding 23.7°C average in June.

Note: The seasonal predictions provide a 6 months view into the future. Predictions for the following months will be included in next bulletins



SEASONAL

Seasonal prediction System: ECMWF S5

Model start date: Jan 1st 2026

Calibration method: Quantile mapping

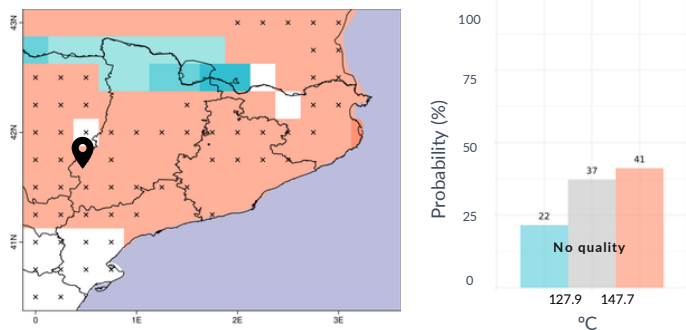
Reference dataset: ERA5

Reference period: 1993-2016

GROWING DEGREE DAYS

April 2026

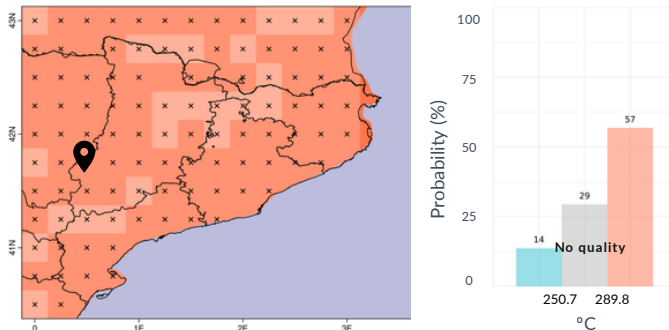
Raïmat vineyard



Higher probability of higher than normal growing degree days across Catalunya, except in the northern part, where lower than normal growing degree days are predicted in April. Forecast showing no quality in the Raïmat vineyard. In Raïmat, the normal growing degree days in April range from 127.9 to 147.7 °C.

May 2026

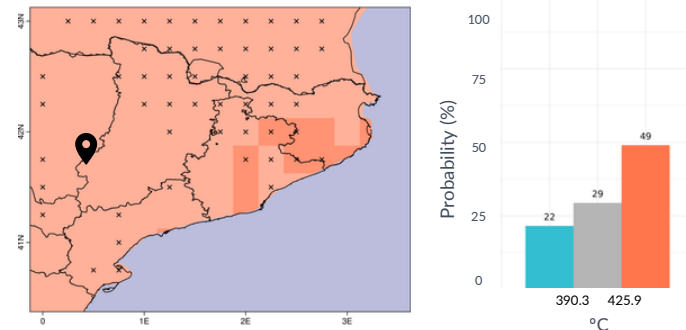
Raïmat vineyard



Higher probability of higher than normal growing degree days across Catalunya. Forecast showing no quality in the Raïmat vineyard. In Raïmat, the normal growing degree days in May range from 250.7 to 289.8 °C.

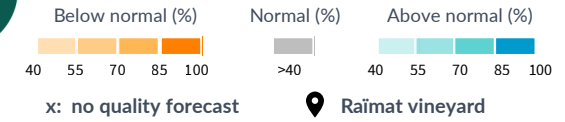
June 2026

Raïmat vineyard



Higher probability of above normal growing degree days across Catalunya. Probability of 49% of having higher than normal growing degree days (above 426°C) in June in the Raïmat vineyard.

Note: The seasonal predictions provide a 6 months view into the future. Predictions for the following months will be included in next bulletins



SEASONAL

Seasonal prediction System: **ECMWF S5**

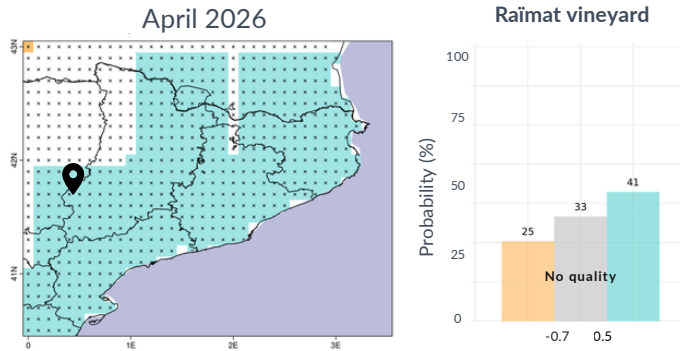
Model start date: **Jan 1st 2026**

Calibration method: **Quantile mapping**

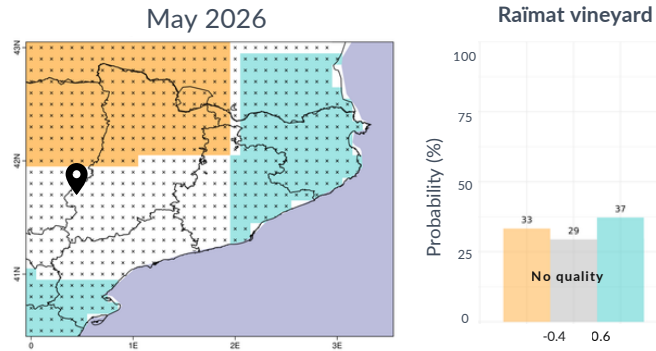
Reference dataset: **ERA5**

Reference period: **1993-2016**

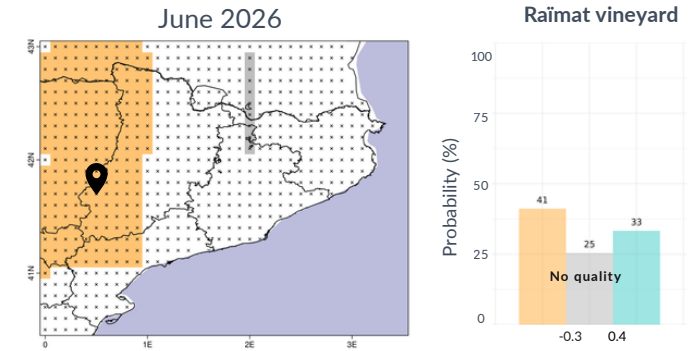
SPEI



Higher probability of wetter than normal conditions across Catalunya. Forecast showing no quality in the Raïmat vineyard.



Higher probability of wetter than normal conditions in the north east and south of Catalunya and drier than normal conditions in the north west. Forecast showing no quality in the Raïmat vineyard.



Higher probability of drier than normal conditions in the north and mi-west of Catalunya. Forecast showing no quality in the Raïmat vineyard.

Note: The seasonal predictions provide a 6 months view into the future. Predictions for the following months will be included in next bulletins



DECADAL

Prediction System: **Multi-model**

Model start date: **January 2025**

Calibration method: **Quantile mapping**

Reference dataset: **ERA5Land**

Reference period: **1991-2020**

TOTAL PRECIPITATION

2026 (April-September)



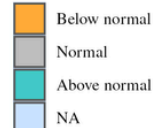
Higher probability of above normal precipitation conditions in the north-western and north-eastern regions of Catalonia in April-September 2026.

2027 (April-September)



Higher probability of above normal precipitation in the northern regions of Catalonia, and high probability of below normal precipitation over the south-western region in April-September 2027.

Most likely tercile

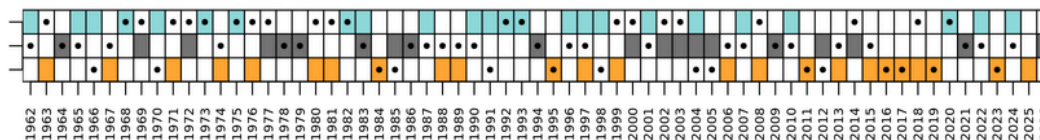


Above (> 46.06mm/month)
Normal
Below (< 32.29mm/month)

Raïmat vineyard

Time series showing observations and predictions of total precipitation in April-September in the Raïmat vineyard. The normal precipitation in this period ranges between 32.3 and 46.1 mm/month. Coloured squares show the predicted most likely tercile whereas black dots are observations.

No quality forecast



Higher probability of near-normal precipitation in the Raïmat vineyard in April-September 2026.

AVERAGE TEMPERATURE

2026 (April-September)



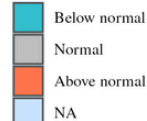
Higher probability of above normal temperatures across all regions of Catalonia.

2027 (April-September)



Higher probability of above normal temperatures across all regions of Catalonia.

Most likely tercile

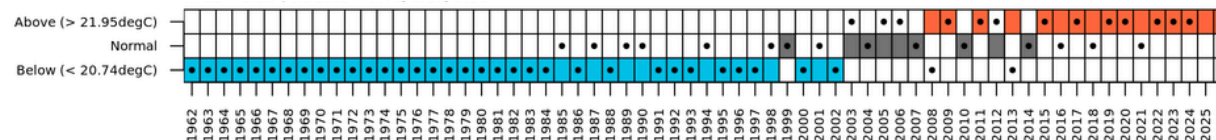


Above (> 21.95degC)
Normal
Below (< 20.74degC)

Raïmat vineyard

Time series showing observations and predictions of average temperature in April-September in the Raïmat vineyard. The normal temperature in this period ranges between 20.7°C and 21.9°C. Coloured squares show the predicted most likely tercile whereas black dots are observations.

High quality



Higher probability of above-normal temperature in the Raïmat vineyard in April-September 2026.



DECADAL

Prediction System: **Multi-model**

Model start date: **January 2025**

Calibration method: **Quantile mapping**

Reference dataset: **ERA5Land**

Reference period: **1991-2020**

SPEI

2026 (April-September)



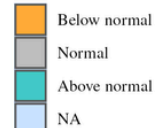
Higher probability of drier than normal conditions in all the regions of Catalunya in April-September 2026.

2027 (April-September)



Higher probability of drier than normal conditions in all the regions of Catalunya in April-September 2027.

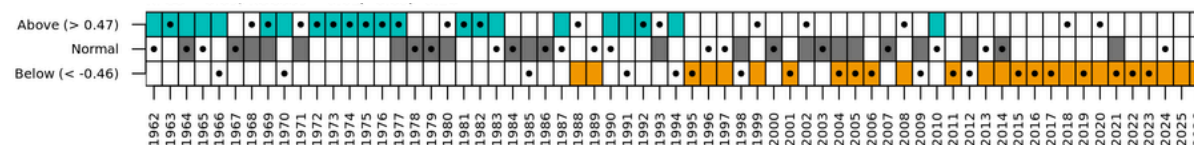
Most likely tercile



Raïmat vineyard

Time series showing observations and predictions of the SPEI6 (April-September accumulation) in the Raïmat vineyard. The normal range for the SPEI6 in this period ranges between -0.46 and 0.47. Coloured squares show the predicted most likely tercile whereas black dots are observations.

Some quality



High probability of drier than normal conditions in the Raïmat vineyard in April-September 2026.

GROWING DEGREE DAYS

2026 (April-September)



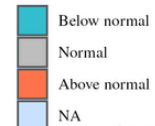
Higher probability of above normal growing degree days in all the regions of Catalunya in April-September 2026.

2027 (April-September)



Higher probability of above normal growing degree days in all regions of Catalunya in April-September 2027.

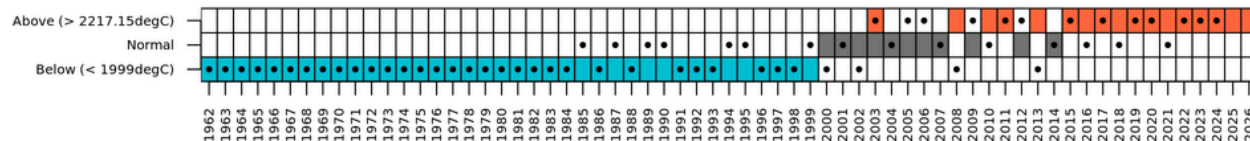
Most likely tercile



Raïmat vineyard

Time series showing observations and predictions of growing degree days in April-September in the Raïmat vineyard. The normal growing degree days in this period range between 1999 and 2217°C. Coloured squares show the predicted most likely tercile whereas black dots are observations.

High quality



High probability of above normal growing degree days in Raïmat vineyard in April-September 2026.



DECADAL

Prediction System: **Multi-model**

Model start date: **January 2025**

Calibration method: **Quantile mapping**

Reference dataset: **ERA5Land**

Reference period: **1991-2020**

HEATWAVES

2026 (April-September)



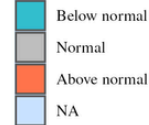
Higher probability of above normal number of heatwaves in the western regions of Catalunya and below normal conditions in the central and eastern regions in April-September 2026.

2027 (April-September)



Higher probability of above normal number of heatwaves in the western regions of Catalunya and below normal conditions in the central and eastern regions in April-September 2027.

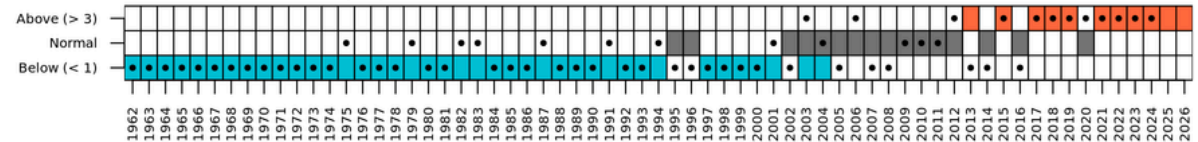
Most likely tercile



Raïmat vineyard

Time series showing observations and predictions of number of heatwaves (3 consecutive days with maximum temperature above 36°C) in April-September in the Raïmat vineyard. The normal number of heatwaves in this period ranges between 1 and 3. Coloured squares show the predicted most likely tercile whereas black dots are observations.

High quality



High probability of above normal number of heatwaves (more than 3) in the Raïmat vineyard in April-September 2026.