

JRC MARS Bulletin

Crop monitoring in Europe

November 2024

Dry conditions allow sowing campaign to catch up

Limited impacts of intense rainfall on arable land in Spain

In most parts of Europe, predominantly average to above-average temperatures and drier-than-usual conditions helped farmers to accelerate sowing and (where still necessary) harvesting activities, and were favourable for the emergence and initial development of recently sown crops. However, conditions were unfavourable in large parts of Spain, Italy, Romania and Bulgaria, and in the Maghreb, Türkiye, and parts of Ukraine and Russia.

Large areas in eastern Spain suffered intensive rains and consequent floods (see text box on page 4). Direct impacts on arable land were limited. Autumn sowings are delayed, but so far without major concerns, as temperatures are still in the optimal range for the sowing of winter cereals. In northern Italy, high rainfall in frequent events continued until mid October, causing local floods and delaying the completion of the harvest of summer crops. Winter crop sowings were delayed as well, and started only in the first days of November. In the south, soils remain very dry in Sicily, due to the drought conditions of this summer, thus raising serious concerns for durum wheat sowing, which should be completed in December.

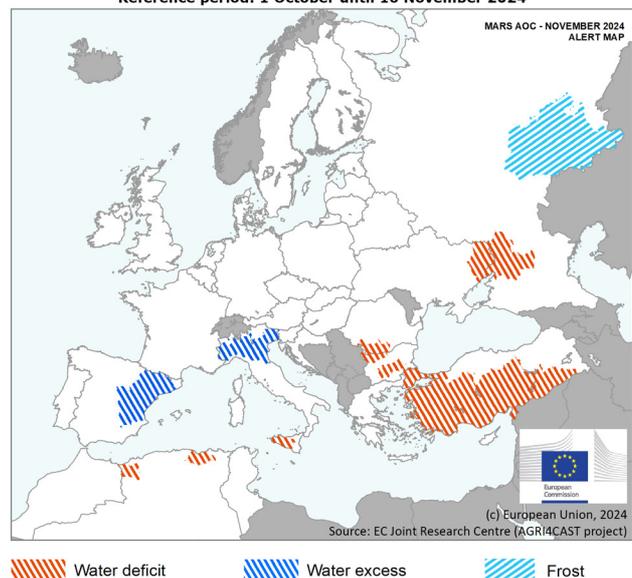
Dry conditions in south-western Romania and several parts of Bulgaria negatively affected the emergence and initial development of rapeseed and winter cereals.

Dry soils also hampered sowing and initial development in eastern Ukraine and southern European Russia, leading to a smaller area sown than originally projected and weak stands of emerged crops. Eastern European Russia experienced colder-than-usual conditions, which are likely to have weakened the new winter crops.

In large parts of Türkiye, precipitation during the review period has been among the lowest in our archive (since 1991), raising concerns for the coming winter cereals sowing campaign.

Unusually high temperatures combined with below-average rainfall led to very dry soils in the Maghreb, where rainfall is needed before winter crop sowings in the coming weeks; particularly in Algeria.

AREAS OF CONCERN - ALERT MAP
Reference period: 1 October until 16 November 2024



Contents:

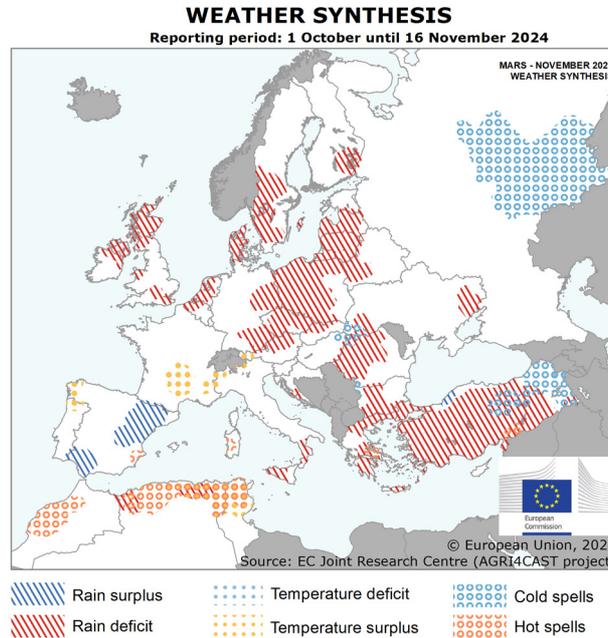
1. Agrometeorological overview
2. Sowing conditions
3. Atlas

Covers the period from 1 October until 16 November

1. Agrometeorological overview

1.1. Meteorological review (1 October – 16 November 2024)

While unusually warm and dry conditions characterised most of northern, central and eastern Europe, exceptionally wetter-than-usual conditions prevailed in the Iberian peninsula, causing severe localised flooding.



The weather synthesis map summarises the most distinct anomalies during the review period compared with the 1991–2023 long-term average (LTA) for the same period. Temperature and rainfall surplus and deficit are unusual absolute and relative deviations from the LTA, taking into account the entire reporting period. Hot and cold spells are 5-day periods with daily maximum temperature above 30 °C and minimum temperature below -3 °C respectively, and above the 90th percentile and below the 10th percentile, respectively, of the years since 1991. The weather indicator maps provide further context on each event.

An exceptional rain surplus was observed in Spain's north-eastern (*Valencia, Cataluña, Aragón*) and southern (*Andalucía*) regions, due to an atmospheric phenomenon known as DANA (Spanish acronym for isolated depression at high levels), which caused extreme precipitation from 29 to 30 October and localised flash floods mainly in *Valencia* and *Cataluña* (see text box on page 4). Cumulative rainfall in these regions exceeded the LTA by more than 100 % (regionally more than 150 %). In these regions, and in parts of Italy (coastal *Liguria* and *Toscana*), coastal Türkiye, the eastern Black Sea region and most of coastal Norway, more than 15 days with rainfall above the 5-mm daily rainfall threshold were observed, accumulating over 250 mm rainfall.

A rainfall deficit was observed in most of northern, central and eastern Europe. Unusually distinct anomalies occurred in large parts of Ireland, the United Kingdom, Belgium, the Netherlands, southern Scandinavia, the Baltic countries, southwestern Belarus, most of central Europe,

western and eastern Ukraine, western and central Romania, most of Bulgaria, Greece, Türkiye, southernmost Italy and parts of Algeria. Cumulative rainfall in these areas was up to 40 mm (corresponding to between 50 % and 100 % below the LTA). In some of these regions, the review period ranked among the three driest in our records since 1991, with only up to 3 days with rainfall above the 5-mm daily rainfall threshold.

An unusually distinct temperature surplus was observed in the north-western Iberian peninsula, central southern France and the Alps region. In these regions, and in north-western parts of the United Kingdom, central and northern Sweden and northernmost European Russia, average daily temperatures exceeded the LTA by up to 3 °C and the review period ranked among the three warmest since 1991. **Hot spells**, in some cases with 20 or more days with daily average temperatures above 30 °C, were observed locally in southern Valencia and

central Sardinia, as well as in many regions of the North African countries.

Unusually distinct cold spells occurred in the region near the borders of Hungary, Romania and Ukraine, locally in south-westernmost Romania and north-westernmost

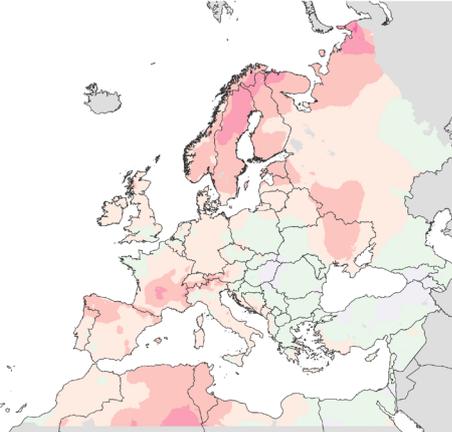
Bulgaria, and in central eastern European Russia (*Bashkorstan, Orenburgskaya*). In central eastern European Russia, average daily temperatures were near the LTA, but minimum daily temperatures between -15°C and -20°C persisted during the review period.

AVERAGE DAILY TEMPERATURE
Averaged values

from: **01 October 2024**
to: **16 November 2024**

Deviation:
Year of interest - LTA

- Units: $^{\circ}\text{C}$
- 1 - -0.5 (cooler in YOI)
 - 0.5 - 0.5
 - 0.5 - 1 (warmer in YOI)
 - 1 - 2 (warmer in YOI)
 - 2 - 3 (warmer in YOI)
 - 3 - 4 (warmer in YOI)



18/11/2024
Resolution: 10 x 10 km

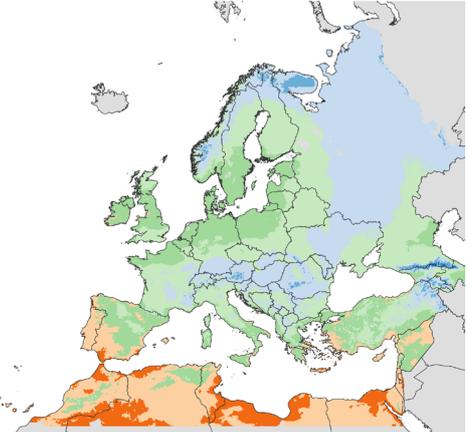


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Source: EC Joint Research Centre (AGRI4CAST project)

MINIMUM DAILY TEMPERATURE
Minimum values

from: **01 October 2024**
to: **16 November 2025**

- Units: $^{\circ}\text{C}$
- > -15 - \leq -10
 - > -10 - \leq -5
 - > -5 - \leq 0
 - > 0 - \leq 5
 - > 5 - \leq 10
 - > 10 - \leq 15
 - > 15



18/11/2024
Resolution: 10 x 10 km



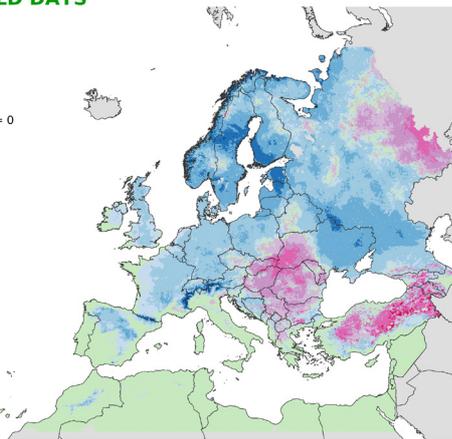
© European Union, 2024
Source: EC Joint Research Centre (AGRI4CAST project)

NUMBER OF COLD DAYS

from: **01 October 2024**
to: **16 November 2024**

Deviation:
Year of interest - LTA
Minimum temperature ($^{\circ}\text{C}$) \leq 0

- Units: days
- \leq -15
 - > -15 - \leq -10
 - > -10 - \leq -5
 - > -5 - \leq -2
 - > -2 - \leq 0
 - no difference
 - > 0 - \leq 2
 - > 2 - \leq 5
 - > 5 - \leq 10
 - > 10 - \leq 15



18/11/2024
Resolution: 10 x 10 km



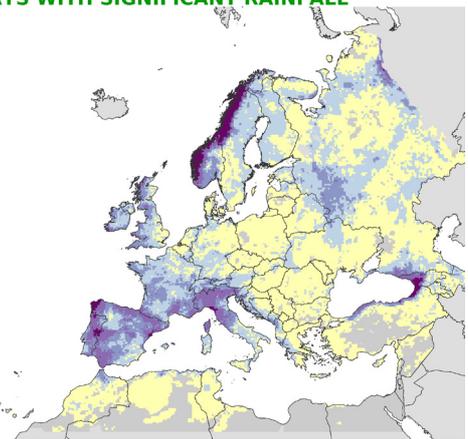
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Source: EC Joint Research Centre (AGRI4CAST project)

NUMBER OF DAYS WITH SIGNIFICANT RAINFALL

from: **01 October 2024**
to: **16 November 2024**

Rain (mm) > 5

- Units: days
- = 0
 - 1 - 3
 - 4 - 6
 - 7 - 9
 - 10 - 15
 - > 15



18/11/2024
Resolution: 10 x 10 km



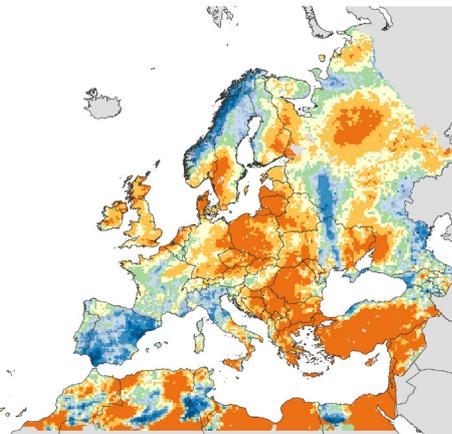
© European Union, 2024
Source: EC Joint Research Centre (AGRI4CAST project)

RAINFALL
Cumulative values

from: **01 October 2024**
to: **16 November 2024**

Deviation:
Year of interest - LTA

- Units: %
- \geq -100 - \leq -50
 - \geq -50 - \leq -30
 - \geq -30 - \leq -10
 - \geq -10 - \leq 10
 - \geq 10 - \leq 30
 - \geq 30 - \leq 50
 - \geq 50 - \leq 100
 - \geq 100 - \leq 150
 - \geq 150



18/11/2024
Resolution: 10 x 10 km



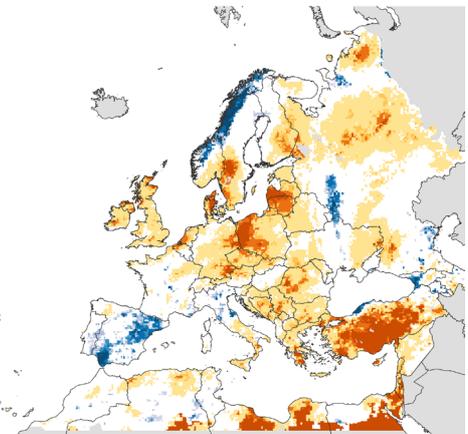
© European Union, 2024
Source: EC Joint Research Centre (AGRI4CAST project)

RAINFALL
Cumulative values

from: **01 October 2024**
to: **16 November 2024**

Ranking since 1991

- Driest year
- Second driest
- Third driest
- Fourth driest
- From fifth to tenth driest
- Others
- From fifth to tenth wettest
- Fourth wettest
- Third wettest
- Second wettest
- Wettest year



18/11/2024
Resolution: 10 x 10 km



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Source: EC Joint Research Centre (AGRI4CAST project)

DANA

What is DANA? *Depresión aislada en niveles altos* (DANA), meaning isolated depression at high levels, is an atmospheric phenomenon consisting of a slow-moving area of low pressure surrounded by ‘blocking’ high-pressure regions. The phenomenon occurs when cold air is cut off from the jet stream and collides with warm, moisture-laden air over the Mediterranean. Due to the sharp temperature gradient between the colliding air masses, the excess moisture held by the warm air is delivered in the form of localised heavy downpours, in some areas amounting to a year’s worth of rainfall in a single precipitation event.

When does it happen? DANA typically occurs in autumn. This year’s event was forecast by Spain’s State Meteorological Agency (AEMET) first on 25 October with ‘heavy-rains alert’, and the rains started on 26 October. In the morning of 29 October AEMET raised the alert to orange (‘significant danger’) and soon after to red (‘extreme danger’)^(1,2). Torrential rains caused floods in *Almeria* on 28 October and *Valencia* on 29 and 30 October.

What are its impacts? The event caused exceptionally heavy rains and devastating floods. The *Utiel* station recorded 207 mm rainfall on 29 October; the *Chiva* station (ca 50 km from *Utiel*) recorded 491 mm within 8 hours on 29–30 October. Such extremes were only observed locally. Much lower values (up to 20 mm) were reported at other nearby stations. Flood impacts were exacerbated due to steep (rocky) slopes, urban surfaces, and dried-out soils with low infiltration capacity. Hence, rainfall quickly became runoff. Approximately 53 000 hectares were affected, according to the Copernicus Emergency Management System ⁽³⁾, under which a comprehensive assessment of the affected areas was conducted ⁽⁴⁾. While flash floods mainly impacted urban areas, citrus fruits and persimmon in the region are reported to have been affected by flooding damage.

Does climate change play a role? The formation and severe intensity of DANA are likely to be linked to (i) recent Arctic warming signals as the key determinant of the jet stream’s functioning, which affects weather over western Europe, and (ii) unusually high sea surface temperatures in the Mediterranean during summer 2024. Both these conditions can be associated with a warming climate, which is estimated to have approximately doubled the likelihood of such events and increased their intensity by 12 % ⁽⁵⁾.

⁽¹⁾ https://www.aemet.es/documentos_d/enportada/20241028140441_p52tesp1.pdf

⁽²⁾ https://www.aemet.es/documentos_d/enportada/20241029143038_p52tesp1.pdf

⁽³⁾ <https://www.copernicus.eu/en/media/image-day-gallery/copernicus-emergency-management-service-monitors-floods-valencia-spain>

⁽⁴⁾ <https://rapidmapping.emergency.copernicus.eu/EMSR773/>

⁽⁵⁾ <https://www.worldweatherattribution.org/extreme-downpours-increasing-in-southern-spain-as-fossil-fuel-emissions-heat-the-climate/>

1.2 Weather forecast (21 - 30 November)

Cold air is moving in across most of Europe, while mild temperatures are forecast for the Iberian peninsula. Rain is forecast for most of Europe, with the highest levels in mountainous areas and the Black Sea region.

Colder-than-usual conditions (average daily temperatures up to 3 °C below the LTA) are forecast for northern France, Ireland, most of the United Kingdom, southern Scandinavia, parts of central Europe, the Alps region, most of the Balkan peninsula, Türkiye, western Ukraine, Belarus and central western European Russia. **Much colder-than-usual conditions** (up to 6 °C below the LTA, and with minimum daily temperatures down to – 15 °C or lower) are forecast regionally for the Alps region, the western Balkans, easternmost Türkiye and southern Norway.

Warmer-than-usual conditions (between 2 °C and 3 °C above the LTA) are forecast for the Iberian peninsula, northern Scandinavia and most of European Russia. More substantial positive temperature anomalies are forecast for central and southern parts of the Iberian peninsula and north-eastern European Russia.

Wet conditions (precipitation between 10 mm and 70 mm) are forecast for most of Europe. **Very wet**

conditions (above 70 mm) are forecast for parts of the western Balkans, southern and eastern Black Sea coastal areas and northern Norway, with between 4 and 6 days with rainfall above the 5-mm threshold.

Dry conditions (total precipitation below 3 mm) are forecast for southernmost parts of the Iberian peninsula, parts of Sicily and western and eastern parts of central European Russia.

The long-range weather forecast (December–February) points to a moderate-to-high likelihood of warmer-than-usual conditions, exceeding the 24-year climatological median by up to 1 °C in the Iberian peninsula and most of western and southern Europe and up to 2 °C in the rest of Europe, even up to 3 °C in north-eastern regions in December–January. Precipitation is forecast, albeit with great uncertainty, to be 0–50 mm below the average for most of the Iberian peninsula, while it is forecast to be up to 50 mm above the average for northern Europe.

AVERAGE DAILY TEMPERATURE

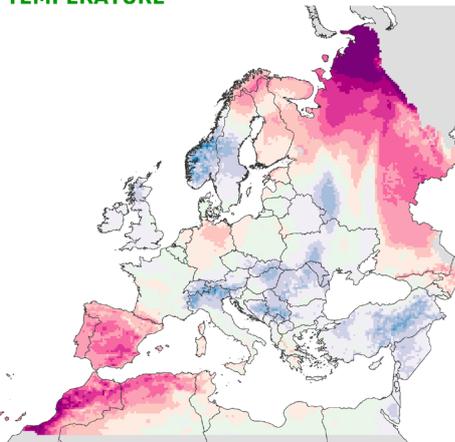
Averaged values

from: 21 November 2024
to: 30 November 2024

Deviation:

Year of interest - LTA

Units: °C



21/11/2024
Resolution: 25 x 25 km



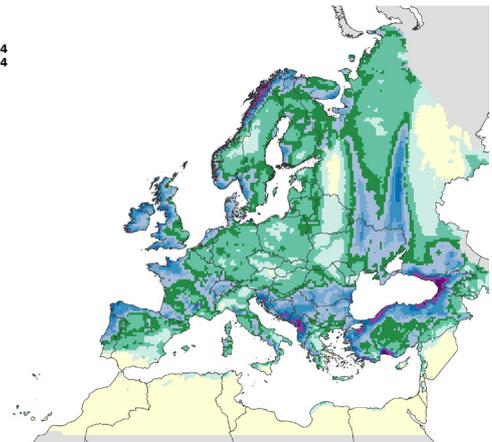
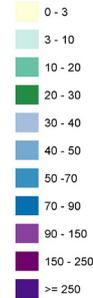
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Source: EC Joint Research Centre (AGRI4CAST project)

RAINFALL

Cumulative values

from: 21 November 2024
to: 30 November 2024

Units: mm



21/11/2024
Resolution: 25 x 25 km



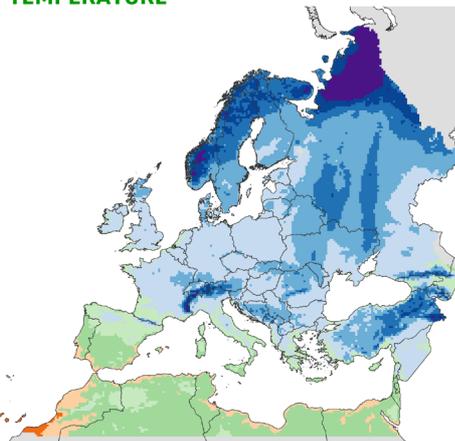
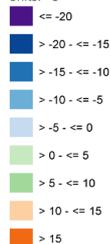
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Source: EC Joint Research Centre (AGRI4CAST project)

MINIMUM DAILY TEMPERATURE

Minimum values

from: 21 November 2024
to: 30 November 2024

Units: °C



21/11/2024
Resolution: 25 x 25 km



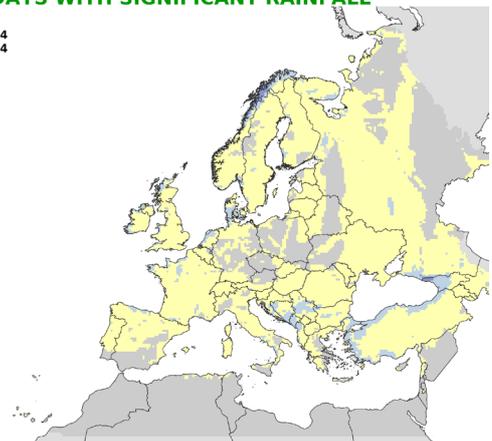
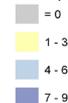
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Source: EC Joint Research Centre (AGRI4CAST project)

NUMBER OF DAYS WITH SIGNIFICANT RAINFALL

from: 21 November 2024
to: 30 November 2024

Rain (mm) > 5

Units: days



21/11/2024
Resolution: 25 x 25 km



© European Union, 2024
Source: EC Joint Research Centre (AGRI4CAST project)

2. Conditions for sowing, emergence, crop establishment

Winter cereals

Sowing campaign recovered due to dry conditions (almost) throughout Europe

In **Denmark, Sweden, Finland** and the **Baltic countries**, cereals sowing is completed. Seedlings are in good condition and a good start to vernalisation is expected. Parts of **Lithuania** and **Latvia** are experiencing low soil moisture levels, yet without any impact expected.

In **France**, the sowing delay has been partly recovered, due to dry conditions since late October. Sowing progress in the **Benelux** countries also speeded up after the wet start to autumn. The emergence and initial development of already sown crops are proceeding at a normal pace. Similar conditions are also observed in **Germany**, with the only exception being the southern regions, where the sowing campaign is still lagging behind. In **Poland**, the sowing campaign is finished, and the emerged winter crop stands are in good condition.

Sowing in **Hungary** and **Romania** is completed. However, an unusually cold start of November slowed down germination and initial crop development. Moreover, parts of southern Romania suffered from rainfall deficit in October. In **Bulgaria**, the sowing campaign is nearing completion. However, crop conditions are poor, especially in the north-western and southern regions, which suffered from drought in October and early November.

In **Italy**, the soft wheat sowing campaign has been delayed due to overly wet conditions in October, but is benefiting from dry conditions in November, with progress around 50%. However, only 25% of durum wheat has been sown, as progress is hampered by very dry soils in Sicily, one of the country's main producing regions. However, sowing can still be accomplished within an appropriate time window.

In most of **Spain** and **Portugal**, above-average and frequent rainfall caused delays to the sowing of winter cereals, while favourably increasing the soil moisture levels. Favourable weather conditions in November have created an extended sowing window, and the campaign is now running smoothly with overall suitable conditions for planting and crop emergence. The completion of the sowing campaign faces significant challenges in the north-eastern regions due to extreme precipitation in late October. Sowing of durum wheat has just started, with no delays.

The sowing campaign in **Greece** and **Cyprus** is almost complete and favoured by mild weather conditions.

In the **United Kingdom**, dry conditions after mid October enabled farmers to catch up with winter cereals sowing. Cereals sown before mid October appear to be in poor condition, due to the overly wet conditions that prevailed until that time. Later-sown cereals look more promising.

Overall favourable conditions prevailed in **Ukraine**, where autumn precipitation brought relief after months of persistent dry conditions. However, dry conditions continued in easternmost parts of the country, as well as in southern **European Russia**, leading to less sowing than originally projected and weak stands of emerged crops. Eastern European Russia experienced colder-than-usual conditions, likely to have weakened the new winter crops.

In **Türkiye**, the optimal sowing window is around late November and early December.

In the **Maghreb**, dry soil conditions in northern Algeria, will delay upcoming wheat and barley sowing if they persist.

Winter rapeseed

Crops are in good condition despite adverse weather in some regions

In **France**, rapeseed stands were adversely affected by the persistently wet conditions up to mid October. Despite the subsequent improvement of weather conditions, it is expected that some parcels with heavy clay soil will require re-sowing. In **Germany** and **Poland**, winter rapeseed was sown very early, benefiting from adequate conditions. In Germany, the stands are slightly more developed than usual, making them more susceptible to frost. However, the currently forecast colder temperatures – which are not forecast to reach extremes – will be favourable for vernalisation. In Poland, dry weather conditions have prevailed since mid October, but soil moisture levels are still adequate. In southern areas affected by storm Boris, the conditions have returned to normal. The increased pest pressure in October had a limited impact, particularly given that the majority of rapeseed is grown in the north.

In most of central and south-eastern Europe, sowing was completed in early September. In north-western and south-eastern **Bulgaria** and southern **Romania**, crops are still small due to a persistent rainfall deficit. In **Czechia**, early sown rapeseed established itself well, but later-sown crops are underdeveloped due to below-average temperatures. In **Hungary**, farmers continued to decrease the sown area significantly, after 4 years of adverse weather conditions and disappointing yields, while in **Bulgaria** the sown area is in line with the 5-year average. In **Italy** and **Spain**, sowings were completed in October. However, the final area sown may be lower than expected due to the excessively wet soils observed in October. In **Ireland, Denmark, Sweden, Finland** and the **Baltic countries**, rapeseed sowing was already completed in due time in September, and crops are overall in good condition before the onset of winter.

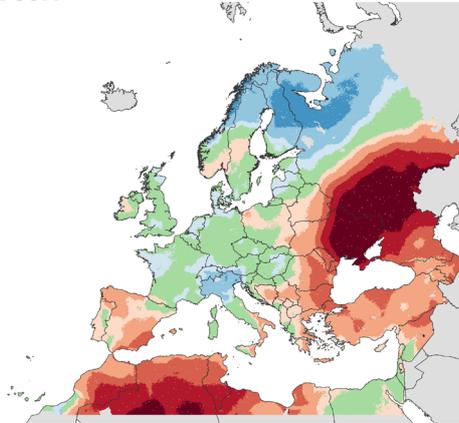
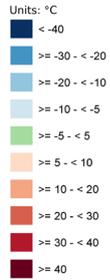
3. Atlas

Temperature regime

TEMPERATURE SUM

from: 01 October 2024
to: 10 October 2024

Deviation:
Year of interest - LTA
Base temperature: 0 °C



18/11/2024
Resolution: 10 x 10 km

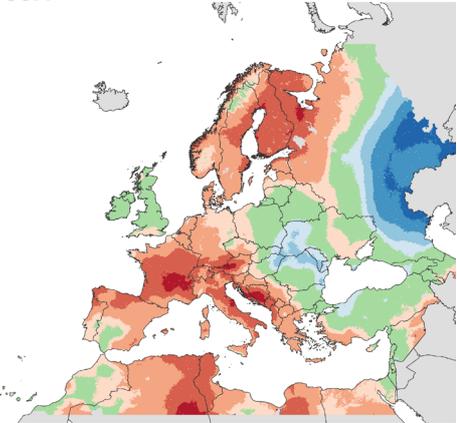
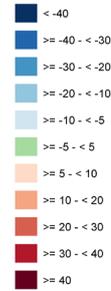


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Source: EC Joint Research Centre (AGRIACAST project)

TEMPERATURE SUM

from: 11 October 2024
to: 20 October 2024

Deviation:
Year of interest - LTA
Base temperature: 0 °C
Units: °C



18/11/2024
Resolution: 10 x 10 km

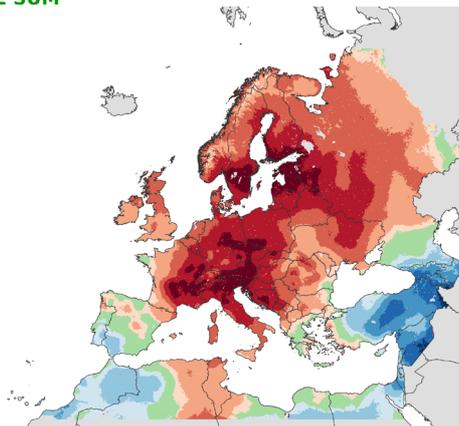
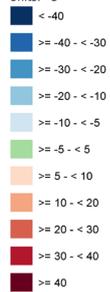


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Source: EC Joint Research Centre (AGRIACAST project)

TEMPERATURE SUM

from: 21 October 2024
to: 31 October 2024

Deviation:
Year of interest - LTA
Base temperature: 0 °C
Units: °C



18/11/2024
Resolution: 10 x 10 km

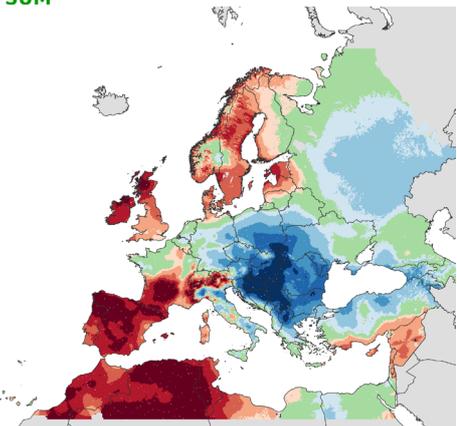
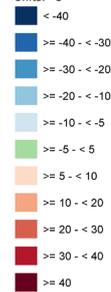


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Source: EC Joint Research Centre (AGRIACAST project)

TEMPERATURE SUM

from: 01 November 2024
to: 16 November 2024

Deviation:
Year of interest - LTA
Base temperature: 0 °C
Units: °C



18/11/2024
Resolution: 10 x 10 km

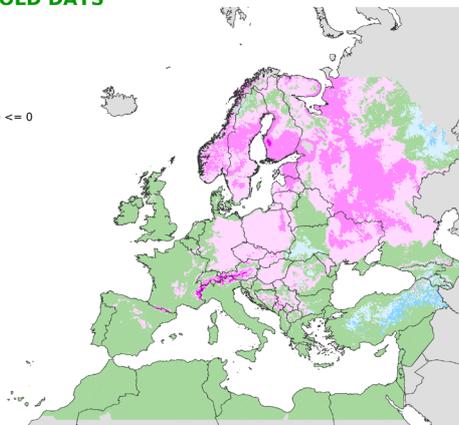
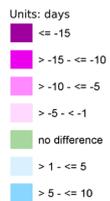


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Source: EC Joint Research Centre (AGRIACAST project)

NUMBER OF COLD DAYS

from: 01 October 2024
to: 31 October 2024

Deviation:
Year of interest - LTA
Minimum temperature (°C) <= 0



18/11/2024
Resolution: 10 x 10 km

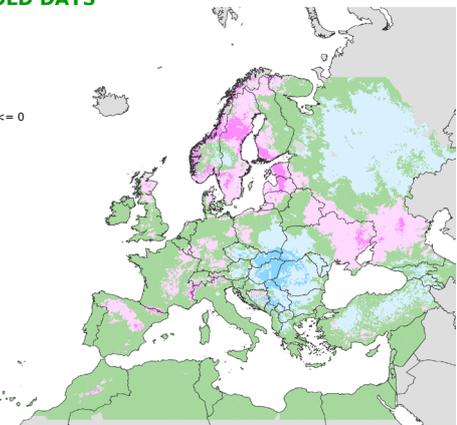
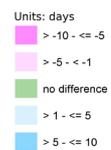


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Source: EC Joint Research Centre (AGRIACAST project)

NUMBER OF COLD DAYS

from: 01 November 2024
to: 16 November 2024

Deviation:
Year of interest - LTA
Minimum temperature (°C) <= 0



18/11/2024
Resolution: 10 x 10 km



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Source: EC Joint Research Centre (AGRIACAST project)

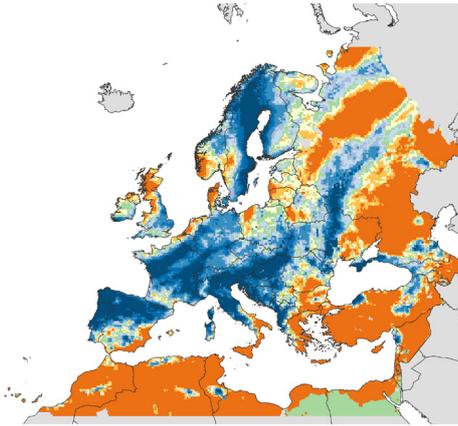
Precipitation

RAINFALL Cumulative values

from: 01 October 2024
to: 10 October 2024

Deviation:
Year of interest - LTA

- Units: %
- >= -100 - < -50
 - >= -50 - < -30
 - >= -30 - < -10
 - >= -10 - < 10
 - >= 10 - < 30
 - >= 30 - < 50
 - >= 50 - < 100
 - >= 100 - < 150
 - >= 150



18/11/2024
Resolution: 10 x 10 km

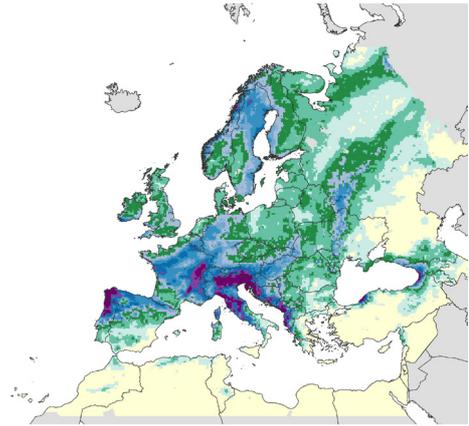


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Source: EC Joint Research Centre (AGRI4CAST project)

RAINFALL Cumulative values

from: 01 October 2024
to: 10 October 2024

- Units: mm
- 0 - 3
 - 3 - 10
 - 10 - 20
 - 20 - 30
 - 30 - 40
 - 40 - 50
 - 50 - 70
 - 70 - 90
 - 90 - 110
 - > 110



18/11/2024
Resolution: 10 x 10 km



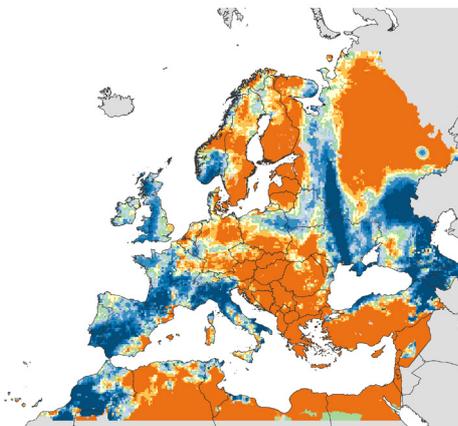
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RAINFALL Cumulative values

from: 11 October 2024
to: 20 October 2024

Deviation:
Year of interest - LTA

- Units: %
- >= -100 - < -50
 - >= -50 - < -30
 - >= -30 - < -10
 - >= -10 - < 10
 - >= 10 - < 30
 - >= 30 - < 50
 - >= 50 - < 100
 - >= 100 - < 150
 - >= 150



18/11/2024
Resolution: 10 x 10 km

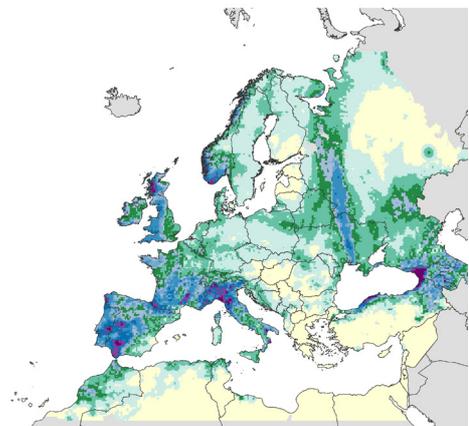


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RAINFALL Cumulative values

from: 11 October 2024
to: 20 October 2024

- Units: mm
- 0 - 3
 - 3 - 10
 - 10 - 20
 - 20 - 30
 - 30 - 40
 - 40 - 50
 - 50 - 70
 - 70 - 90
 - 90 - 110
 - > 110



18/11/2024
Resolution: 10 x 10 km



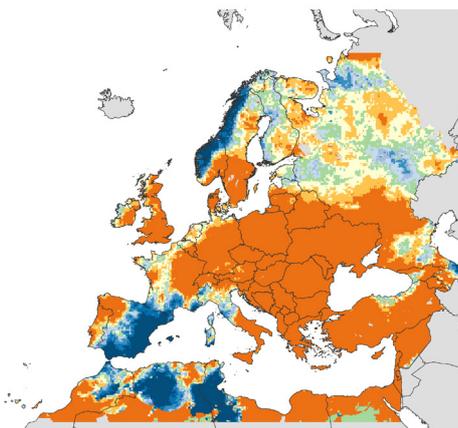
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RAINFALL Cumulative values

from: 21 October 2024
to: 31 October 2024

Deviation:
Year of interest - LTA

- Units: %
- >= -100 - < -50
 - >= -50 - < -30
 - >= -30 - < -10
 - >= -10 - < 10
 - >= 10 - < 30
 - >= 30 - < 50
 - >= 50 - < 100
 - >= 100 - < 150
 - >= 150



18/11/2024
Resolution: 10 x 10 km

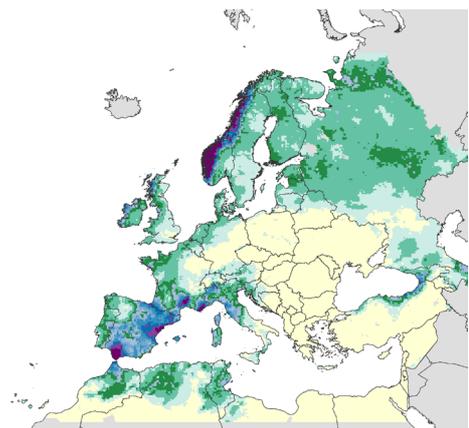


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RAINFALL Cumulative values

from: 21 October 2024
to: 31 October 2024

- Units: mm
- 0 - 3
 - 3 - 10
 - 10 - 20
 - 20 - 30
 - 30 - 40
 - 40 - 50
 - 50 - 70
 - 70 - 90
 - 90 - 110
 - > 110



18/11/2024
Resolution: 10 x 10 km

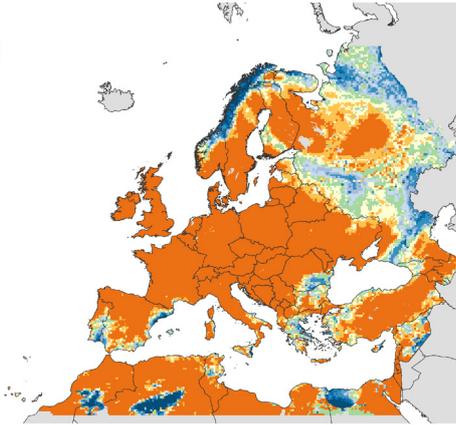
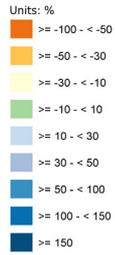


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RAINFALL
Cumulative values

from: 01 November 2024
to: 16 November 2024

Deviation:
Year of interest - LTA



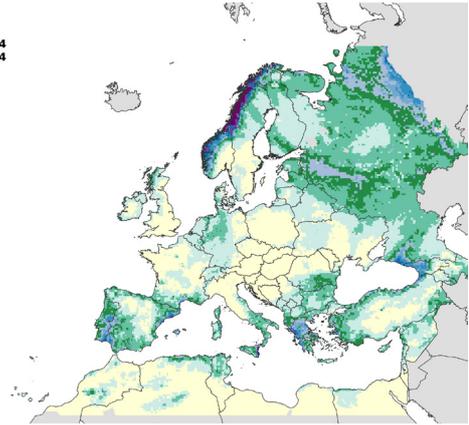
18/11/2024
Resolution: 10 x 10 km



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RAINFALL
Cumulative values

from: 01 November 2024
to: 16 November 2024



18/11/2024
Resolution: 10 x 10 km

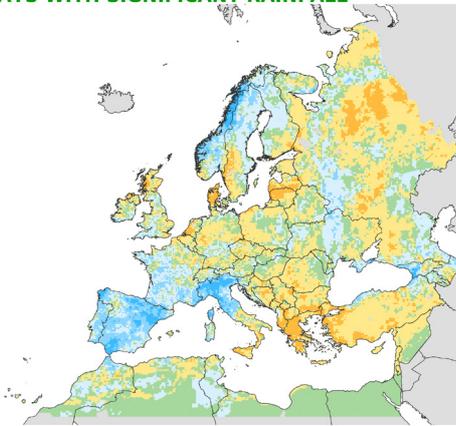


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NUMBER OF DAYS WITH SIGNIFICANT RAINFALL

from: 01 October 2024
to: 31 October 2024

Deviation:
Year of interest - LTA
Rain (mm) > 5



18/11/2024
Resolution: 10 x 10 km

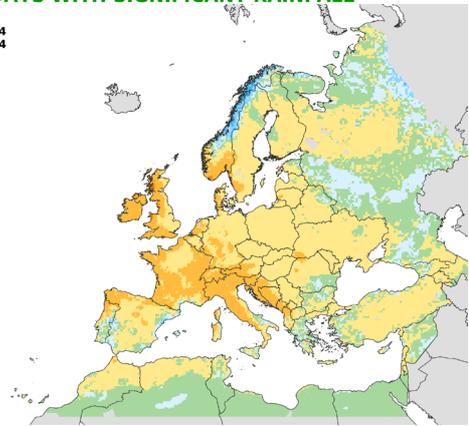


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NUMBER OF DAYS WITH SIGNIFICANT RAINFALL

from: 01 November 2024
to: 16 November 2024

Deviation:
Year of interest - LTA
Rain (mm) > 5



18/11/2024
Resolution: 10 x 10 km



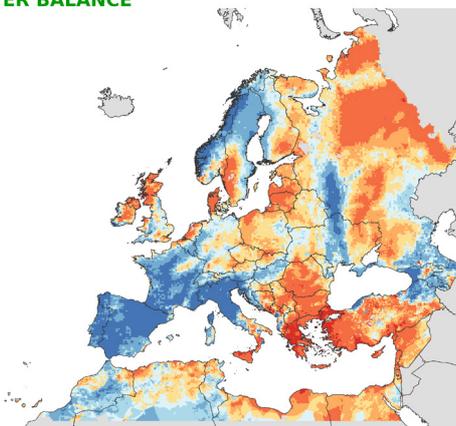
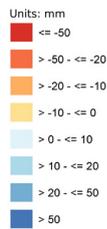
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Climatic water balance

CLIMATIC WATER BALANCE
Cumulative values

from: 01 October 2024
to: 31 October 2024

Deviation:
Year of interest - LTA



18/11/2024
Resolution: 10 x 10 km

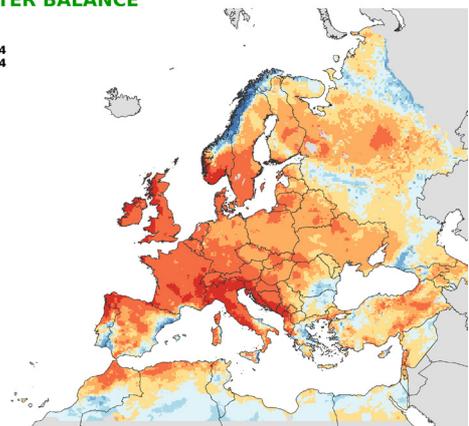
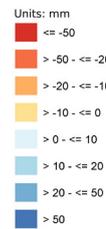


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CLIMATIC WATER BALANCE
Cumulative values

from: 01 November 2024
to: 16 November 2024

Deviation:
Year of interest - LTA



18/11/2024
Resolution: 10 x 10 km



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JRC MARS Bulletin 2024

Date	Publication	Reference
22 Jan	Agromet analysis	Vol. 32 No 1
26 Feb	Agromet analysis	Vol. 32 No 2
25 Mar	Agromet analysis, yield forecast	Vol. 32 No 3
22 Apr	Agromet analysis, remote sensing, pasture analysis, sowing conditions, yield forecast	Vol. 32 No 4
27 May	Agromet analysis, remote sensing, pasture analysis, sowing update, yield forecast	Vol. 32 No 5
24 Jun	Agromet analysis, remote sensing, pasture analysis, rice analysis, yield forecast	Vol. 32 No 6
22 Jul	Agromet analysis, remote sensing, pasture analysis, harvesting conditions, yield forecast	Vol. 32 No 7
26 Aug	Agromet analysis, remote sensing, pasture update, harvesting update, yield forecast	Vol. 32 No 8
23 Sep	Agromet analysis, remote sensing, pasture analysis, rice analysis, harvesting update, yield forecast	Vol. 32 No 9
28 Oct	Agromet analysis, pasture update, sowing conditions, harvesting update, yield forecast	Vol. 32 No 10
25 Nov	Agromet analysis, sowing update, harvesting update	Vol. 32 No 11
16 Dec	Agromet analysis	Vol. 32 No 12

Mission statement

The Joint Research Centre provides independent, evidence-based knowledge and science, supporting EU policies to positively impact society.

ISSN 2443-8278 doi:10.2760/587618 KJ-AW-24-011-EN-N

The JRC MARS Bulletin – Crop monitoring in Europe is a European Commission publication of the Joint Research Centre’s AGRI4CAST project (JRC Food Security Unit – Directorate for Sustainable Resources)

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Analysis and reports

Biavetti, I., Bussay, A., Cerrani, I., Claverie, M., De Palma, P., Fumagalli, D., Henin, R., Luque Reyes, J., Manfron, G., Morel, J., Nisini, L., Ozalp, O., Panarello, L., Rossi, M., Seguni, L., Tarnavsky, E., Todoroff, P., van den Berg, M., Zucchini, A

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Edition

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Data production

AGRI4CAST (Food Security Unit JRC D5), MARSOP6 Consortium

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Technical note

The long-term average (LTA) used within this Bulletin as a reference is calculated on the basis of weather data from 1991-2023.

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