Issued: 28 October 2024
JRC MARS Bulletin Vol. 32 No 10

European Commission

JRC MARS Bulletin

Crop monitoring in Europe

October 2024

Difficult start to autumn

Intense rainfall negatively impacted ripening, harvesting and sowing

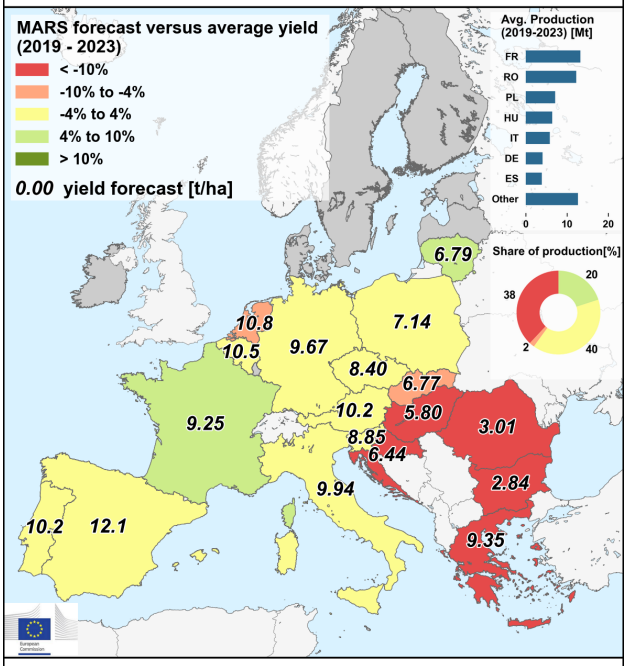
The yield forecasts for grain maize, sunflowers and soybeans have been revised downwards at the EU level, mainly due to a worsening of the outlook for summer crops in Bulgaria, Romania, Hungary, Croatia and Italy. The yield forecasts for other summer crops, were maintained or revised slightly upwards at the EU level.

In northern and central Italy, summer crops (particularly grain maize and soybeans) were negatively affected by excessively wet conditions during ripening and harvesting, thus diminishing the hitherto positive yield expectations at country level. In Bulgaria, Romania, Hungary, and Croatia, intensive end-of-season rains from mid-September contributed to a worsening of yield expectations (particularly for sunflowers and grain maize), which were already low due to the preceding very hot and dry conditions.

Overly wet conditions – often associated with torrential rains - were also observed in many other parts of central and western Europe. The rainfall not only caused delays to the harvesting of summer crops but also raised concerns about grain quality, and hampered the sowing campaign for winter cereals.

A dedicated section on sowing conditions for winter crops is given on page 9 and 10.

Grain maize - yield forecast 2024



MARS Bulletin Vol. 32 No.10 (2024)

Crop	Yield t/ha				
	Avg 5yrs	September Bulletin	MARS 2024 forecasts	%24/5yrs	% Diff September
Grain maize	7.35	6.85	**6.66**	- 9	- 3
Potatoes	35.4	35.8	**36.0**	+ 2	+ 0
Sugar beet	73.2	74.7	**75.4**	+ 3	+ 1
Sunflower	2.15	1.98	**1.86**	- 13	- 6
Soybeans	2.73	2.81	**2.72**	- 0	- 3
Field beans	2.72	2.81	**2.84**	+ 5	+ 1
Field peas	2.34	2.21	**2.20**	- 6	- 0
Green maize	41.7	43.2	**43.2**	+ 4	- 0

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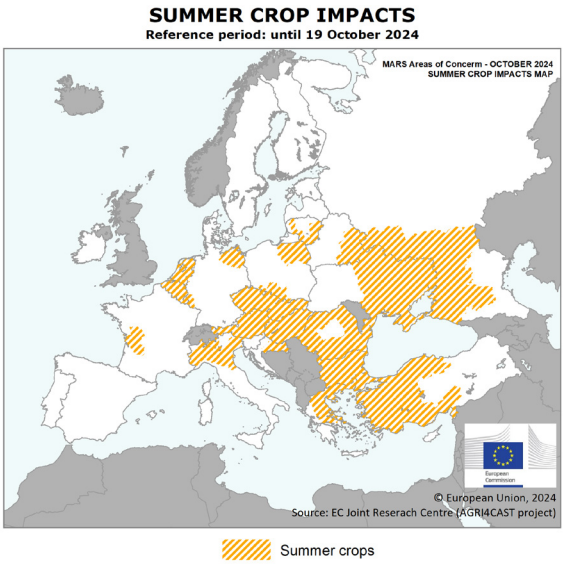
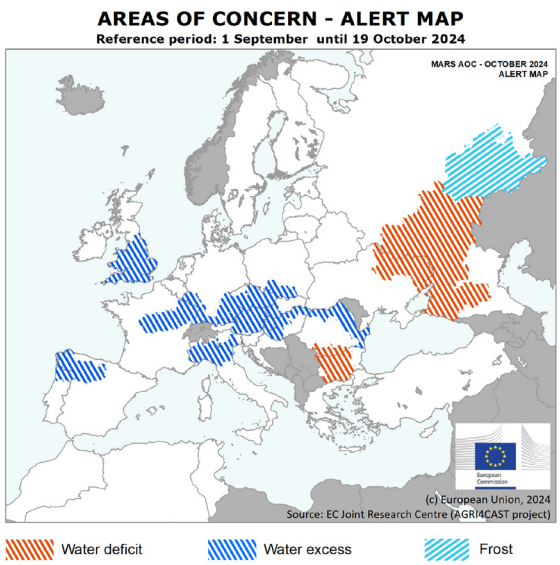
Joint Research Centre

1. Agrometeorological overview

1.1. Areas of concern





*Since March, the areas-of-concern analysis has followed a different approach from that used in previous MARS bulletins. The **crop impacts** map shows regions where summer crops have been negatively affected in terms of area and/or yield. This map shows **impacts that have occurred since the start of the summer season**. However, reduced areas or resowing of specific crops without a substantial impact on the yield potential of the remaining sown areas of that crop are not repeated in subsequent editions of the Bulletin once reduced areas are reflected in the statistics. The **alerts map** shows unusual weather events **that occurred during the analysis period, from 1 September to 19 October**, and potentially had negative impacts on crops. This is the last edition of the crop impact map for summer crops regarding the 2023–2024 season.*

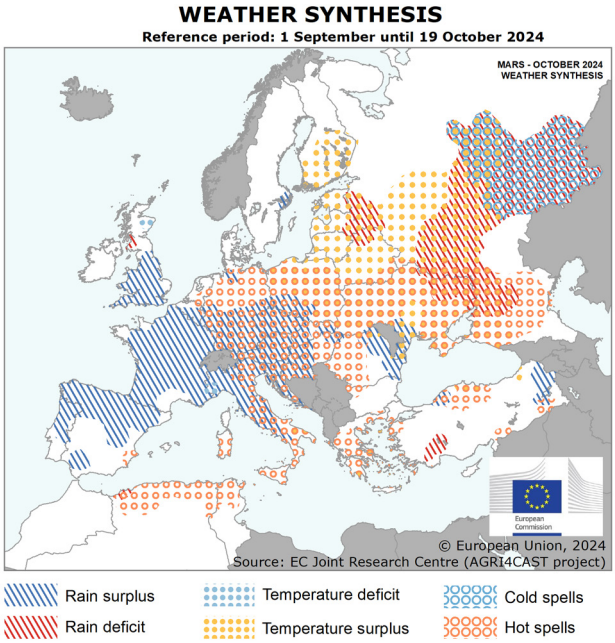
The alert map shows that intense rainfall has been observed in several regions. In northern **Italy**, heavy rainstorms caused local flooding in September and again in October. As a consequence, the maturation and harvesting of summer crops were further delayed: they are now around 1 month later than usual. The overly wet conditions also raise concerns about grain quality. Similar conditions are observed in central and eastern **France** and southern **Germany**, where the rainfall not only caused delays to the harvest of summer crops but also hampered the start of the winter cereal sowing campaign. Even in the **United Kingdom**, the winter sowings are delayed due to the overly wet conditions, and concerns have been raised about the limited amount of time left in the optimal sowing window. Winter cereal sowings are also delayed in central Europe (southern **Poland**, **Austria**, **Hungary**, **Czechia**, western **Slovakia**) and in northern and eastern **Romania**. In these regions, the optimal sowing window will remain open for some more weeks, still allowing for a normal sowing campaign.

In southern **Romania** and western **Bulgaria**, sowing was initially hampered by very dry soil conditions; rainfall at the end of September improved this situation, but more rain is needed to sustain adequate emergence and initial crop development. A continued rainfall deficit is observed in eastern **Ukraine** and southern **Russia**; for optimal sowing of winter cereals, more rainfall is needed. In central **Russia**, a cold spell around 10 October affected recently emerged winter crops.

The crop impact map summarises the negative effect of the weather on summer crops since the start of the season. Only impacts due to overly wet conditions in eastern **Italy** and southern **Poland** were added during the current analysis. Impacts marked in the **Netherlands**, **Belgium** and **Luxembourg** are related to the late start of the season. In **Italy**, crop impacts are linked to the overly wet conditions at the start and end of the season. In northern **Poland**, southern **Lithuania**, **Austria**, **Czechia**, **Slovakia**, **Hungary**, **Romania**, **Bulgaria**, **Greece**, **Türkiye**, **Ukraine** and **Russia**, summer crops were affected by hot and dry weather during summer.

1.2. Meteorological review (1 September – 19 October)

While unusually warm conditions prevailed in most of eastern Europe, exceptionally wet conditions characterised most of western and central Europe.



The weather synthesis map summarises the most distinct weather 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 spells and cold spells are 5-day periods with temperatures above the 90th percentile and below the 10th percentile, respectively, considering the years since 1991. The weather indicator maps provide further context for each event.

A distinct rain surplus was observed in most of western and central Europe, and in eastern Romania, southern Ukraine (*Odes'ka*) and northern and eastern parts of Türkiye. Cumulative rainfall in many of these regions exceeded the LTA by more than 100 % (regionally more than 150 %), mainly due to the heavy rainfall downpours during Storm Boris, which affected central Europe (see the September 2024 bulletin), and Storm Kirk (9–12 October), which affected Portugal and Spain and moved north-eastwards to France, Belgium and western Germany. In some of these regions, more than 15 days with rainfall above the 5-mm daily rainfall threshold were observed, resulting in over 400 mm of cumulative rainfall, mainly in the Alps region and northern Italy.

A rainfall deficit was observed in eastern Estonia and Latvia, northernmost Belarus and the bordering region of European Russia (*Pskovskaya*), and in most central and southern regions of European Russia, in north-eastern Ukraine, in parts of south-western Türkiye and locally in north-western Algeria. Cumulative rainfall in these areas was up to 40 mm (corresponding to between 50 % and 100 %) below the LTA, with only up to 3 days with rainfall above the 5-mm daily rainfall threshold. The review period ranked among the three driest in our records since 1991.

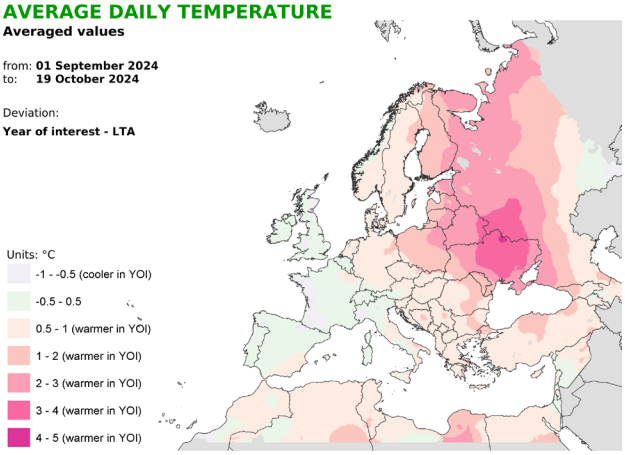
A temperature surplus occurred in most of eastern Europe. The most distinct positive temperature anomalies were observed from Poland and Ukraine to southern Finland and central European Russia. In many of these regions, average daily temperatures exceeded the LTA by up to 4 °C (up to 5 °C in *Sums'ka* oblast in northern Ukraine) and the review period was the warmest since 1991. Exceptional **hot spells** (with 20 or more days with daily average temperatures above 30 °C in September) were observed in most of central and eastern Europe, western Romania, north-westernmost Bulgaria, most of Greece, parts of Türkiye, and northern Tunisia and Algeria. Unusual **cold spells** occurred in central eastern regions of European Russia (*Bashkorstanstan*, *Orenburgskaya*), where average daily temperatures dropped below 0 °C from the start of October and were well below the LTA, with sub-zero temperatures on up to 15 more days than the LTA.

AVERAGE DAILY TEMPERATURE

Averaged values

from: **01 September 2024**
to: **19 October 2024**

Deviation:
Year of interest - LTA

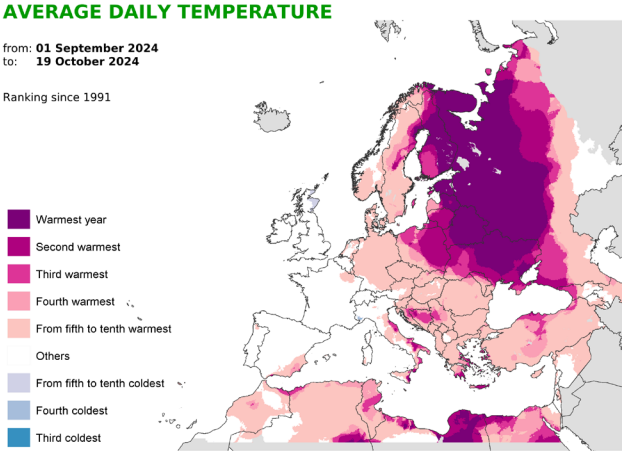


24/10/2024
Resolution: 10 x 10 km

AVERAGE DAILY TEMPERATURE

from: **01 September 2024**
to: **19 October 2024**

Ranking since 1991

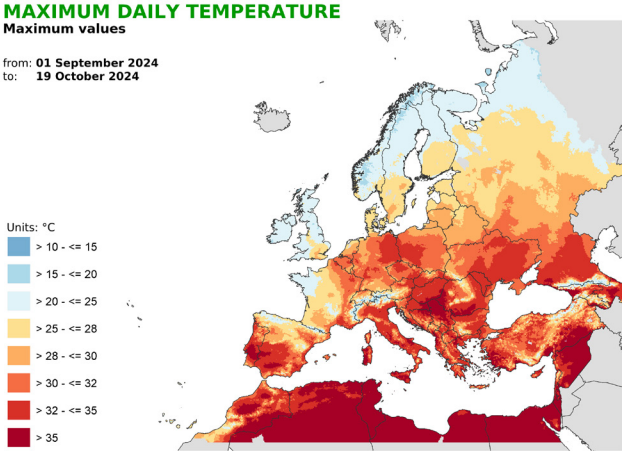


24/10/2024
Resolution: 10 x 10 km

MAXIMUM DAILY TEMPERATURE

Maximum values

from: **01 September 2024**
to: **19 October 2024**

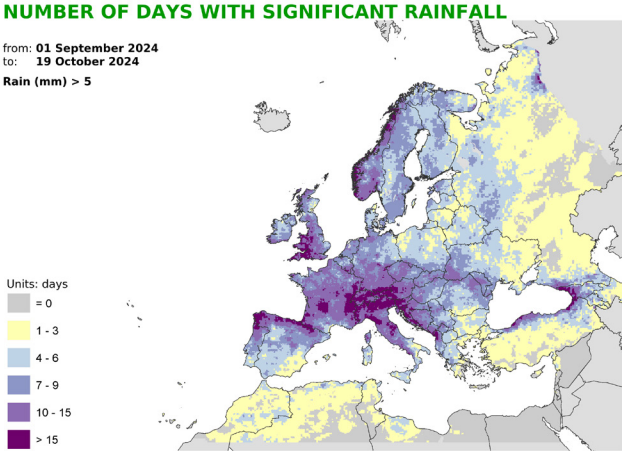


24/10/2024
Resolution: 10 x 10 km

NUMBER OF DAYS WITH SIGNIFICANT RAINFALL

from: **01 September 2024**
to: **19 October 2024**

Rain (mm) > 5



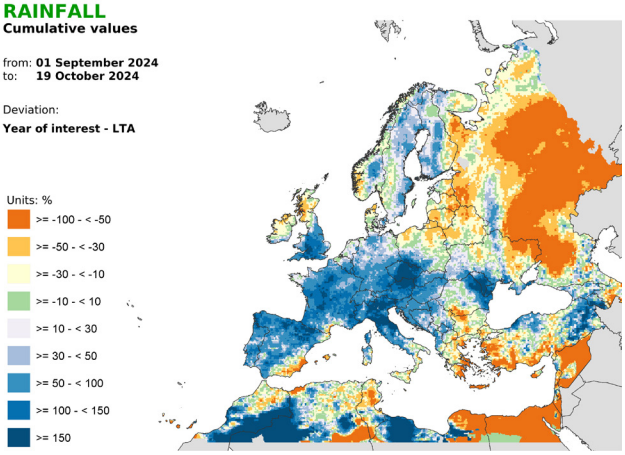
24/10/2024
Resolution: 10 x 10 km

RAINFALL

Cumulative values

from: **01 September 2024**
to: **19 October 2024**

Deviation:
Year of interest - LTA



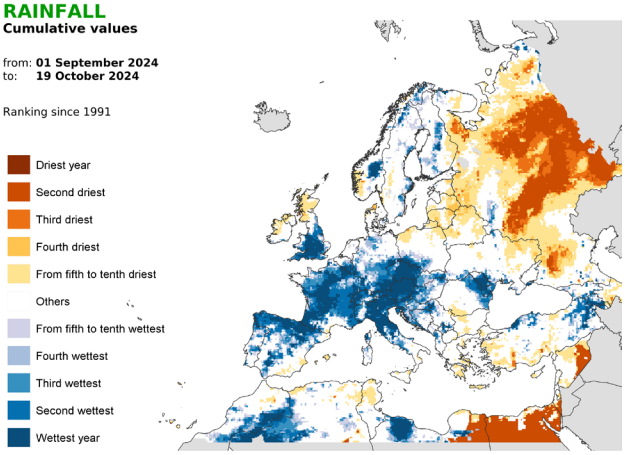
24/10/2024
Resolution: 10 x 10 km

RAINFALL

Cumulative values

from: **01 September 2024**
to: **19 October 2024**

Ranking since 1991



24/10/2024
Resolution: 10 x 10 km

1.3. Weather forecast (24 October – 2 November)

Dry and warmer-than-usual conditions forecast for most of Europe, with substantial rainfall in the central Mediterranean and western Scandinavia.

Slightly colder-than-usual conditions, with average daily temperatures up to 2 °C below the LTA, are forecast for most of the Iberian Peninsula, southern European Russia, and eastern Türkiye. **Much colder-than-usual conditions** (up to 5 °C below the LTA) are forecast for southern Spain and easternmost Türkiye.

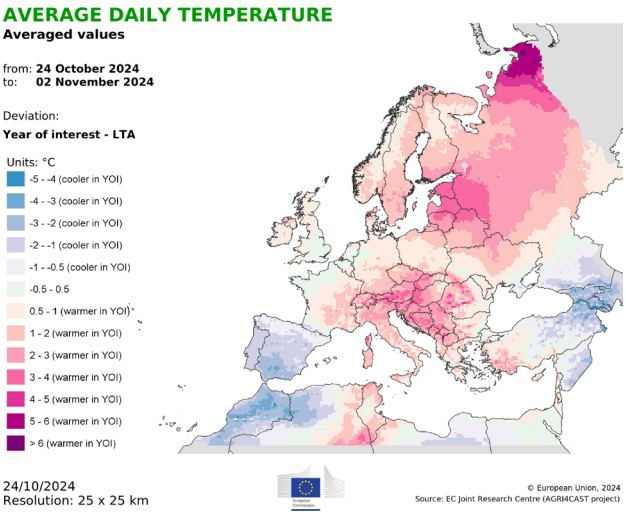
Warmer-than-usual conditions are forecast for most of the rest of Europe, with the most substantial temperature anomalies (2 °C to 5 °C above the LTA) in northern Italy, parts of central Europe, the Baltic Sea countries, Belarus, northern Ukraine, and central and northern European Russia.

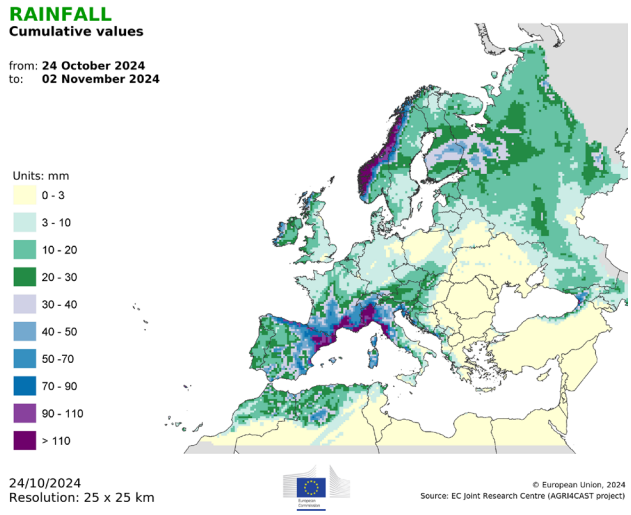
Wet conditions (rainfall up to 70 mm) are forecast for the Iberian Peninsula, the western British Isles, Belgium, most of France, central and northern Italy, western-central Europe, most of European Russia and Scandinavia.

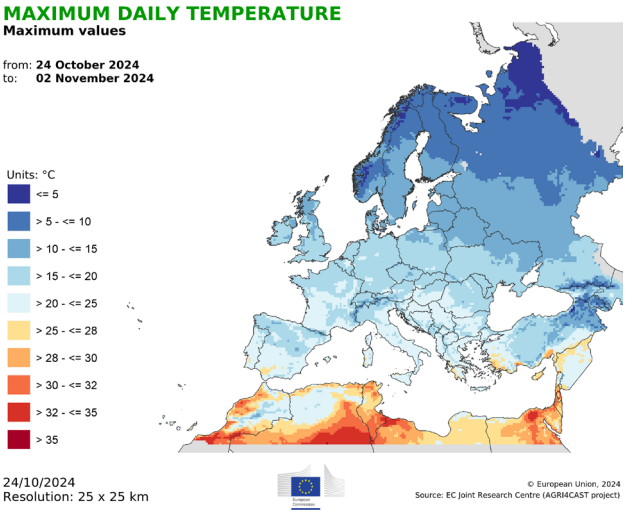
Very wet conditions (above 70 mm) are forecast for the eastern parts of the Iberian Peninsula, southern France, north-western Italy, along the eastern coast of the Adriatic Sea, and in coastal Norway with up to 9 days above the 5-mm daily precipitation threshold.

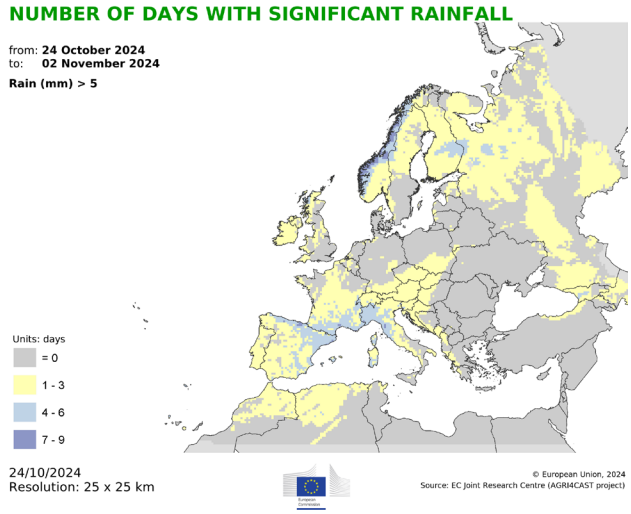
Dry conditions (total precipitation below 3 mm) are forecast for other parts of central and eastern Europe and most of the Balkan Peninsula and Türkiye.

The long-range weather forecast points to low-to-moderate likelihood of warm conditions, exceeding the 24-year climatological median by up to 1 °C in most of Europe (November, but also December-January) and up to 2 °C in north-eastern Europe (November, but mainly December-January). Albeit with high uncertainty, 0-50 mm below-average precipitation is forecast for parts of the Iberian Peninsula in January.







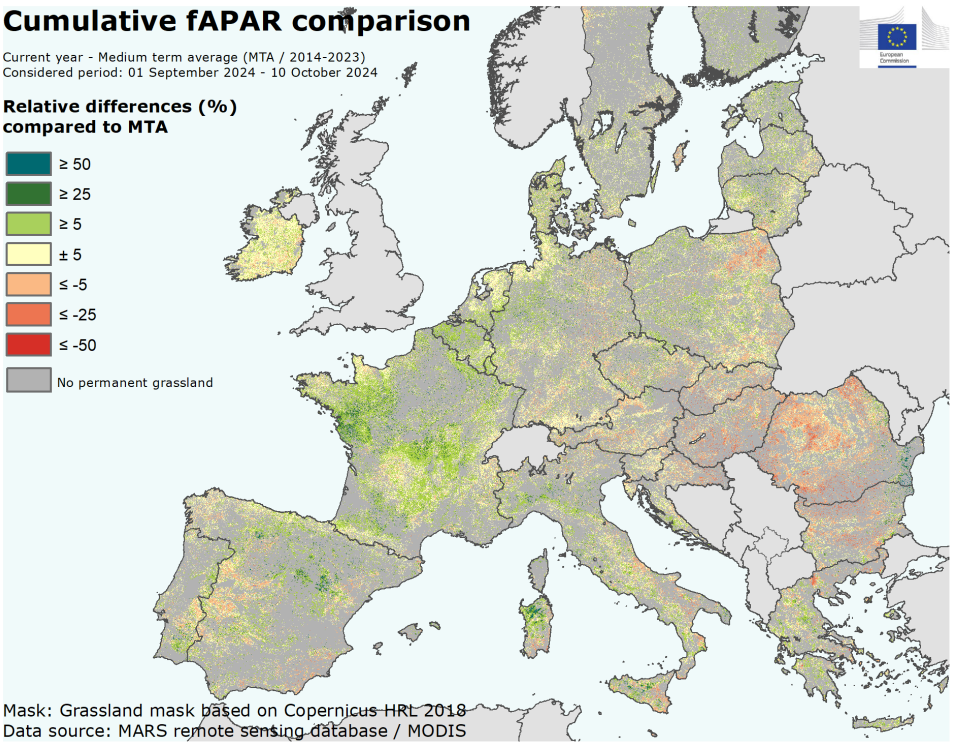


2. Grassland and fodder monitoring

Mixed effects of heavy rainfall on grasslands across Europe

In central and western Europe, heavy rainfall and local floods complicated fieldwork before dormancy. In eastern Europe, abundant rainfall alleviated the pressure from the previously hot and dry weather but was insufficient for grasslands to fully recover. In the south, grasslands exited their summer dormancy and benefited from wet conditions. In northern Europe, after the warm summer, temperatures returned to favourable levels, resulting in good condition of grasslands before winter dormancy.

The map below displays the differences between the cumulative fraction of absorbed photosynthetically active radiation (fAPAR) from 1 September to 10 October 2024 and the medium-term average (MTA, 2014–2023) for the same period. Positive anomalies (in green) reflect above-average photosynthetic activity and biomass accumulation, while negative anomalies (in red) reflect the opposite.



In **Ireland**, conditions were drier than usual in the north, with a slight radiation deficit in most of the country. Nevertheless, the fAPAR signal is in line with the MTA throughout the country. In **France**, grasslands are performing well, with above-average levels of productivity in most regions. However, it is expected that the current exceptionally wet conditions are limiting field accessibility and reducing fodder quality. In addition, the green maize harvest has been complicated and locally delayed; nevertheless, current forecasts suggest that the yield will remain close to the 5-year average. In the **Benelux** countries, the warm and sunny start of September was followed by temperatures in line with the average, and slightly below-average radiation, resulting in fair growth conditions overall. Green maize harvesting is still ongoing, with yields expected to be below average overall.

In northern **Germany**, weather conditions were very diverse, with a lack of precipitation in the north-east and overabundance in the west lowering grassland productivity, while the region in between benefited from very favourable conditions for the last harvest of the season and the subsequent field maintenance. In **Denmark** and **Sweden**, conditions were favourable for grasslands, and the fAPAR signal is in line with the MTA. This signal remains above the MTA in **Finland** and close to the MTA in the **Baltic countries**, where the very warm conditions did not significantly affect biomass levels.

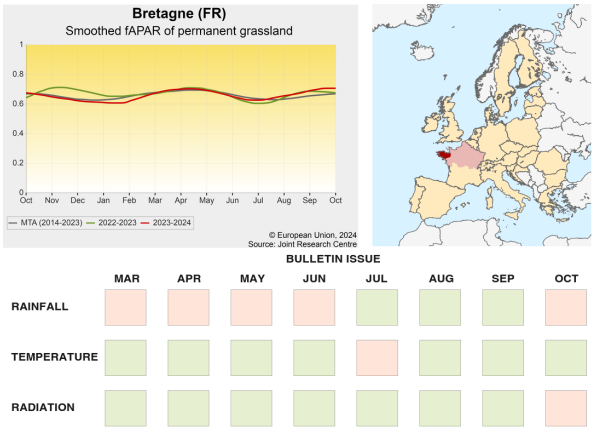
Photosynthetic activity will progressively decrease in the coming weeks, with grasslands entering winter dormancy. In **Poland**, conditions were favourable in the west and north, with fAPAR levels comparable to the MTA. In the east, grasslands did not recover from the previous heat stress, and grasslands in the south were affected by waterlogging and local flooding. In **Czechia**, **Austria** and **Slovakia**, the heavy rains of Storm Boris in mid September continued the early decline in the fAPAR signal that started during the hot spell in August. In southern **Germany**, unfavourable wet conditions since mid September pushed productivity below the MTA. It is expected to be difficult to access the fields for the last harvest and field operations before dormancy.

In **Hungary**, abundant rain mitigated the effects of the summer drought, and photosynthetic activity recovered to close to the MTA. In western and central **Romania**, biomass accumulation levels remain low despite conditions being average during the review period. In eastern Romania, torrential rains benefited grassland productivity overall, while in the rest of the country near- to below-average precipitation maintained productivity at a low level. In **Bulgaria** and **Greece**, precipitation returned and temperatures returned to average, allowing grasslands to recover from the hot and dry summer.

In northern and central **Italy**, grassland productivity levels are above the MTA despite excessive rain. However, these overly wet conditions limited field access and caused delays to the green maize harvest, with a risk that late-sown fields will not reach maturity. In southern Italy, soil moisture remains low, but average temperatures and episodic rainfall boosted biomass formation. In most of northern **Spain** and **Portugal**, biomass accumulation is close to or above the MTA. However, in the north-west, excessive soil moisture negatively affected biomass accumulation and delayed green maize harvesting. In southern Spain and Portugal, the recent rainfall benefited grasslands, which are about to exit their summer dormancy.

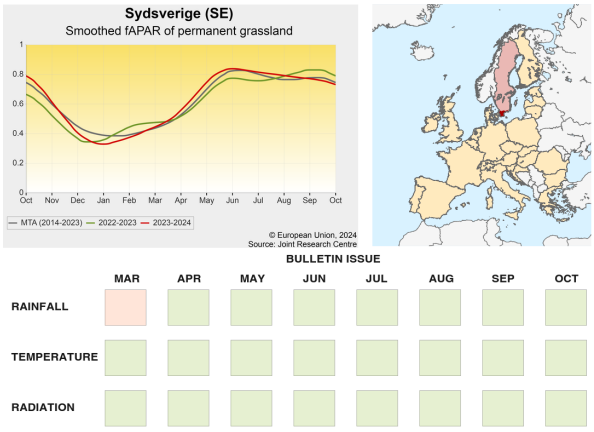
France - North

Reference period: 01 Sep to 10 Oct 2024



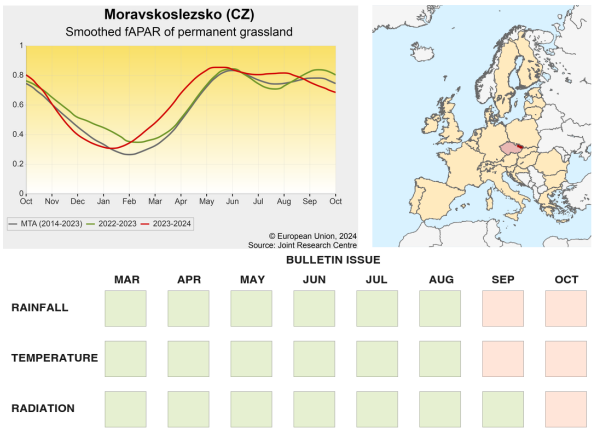
Sweden

Reference period: 01 Sep to 10 Oct 2024



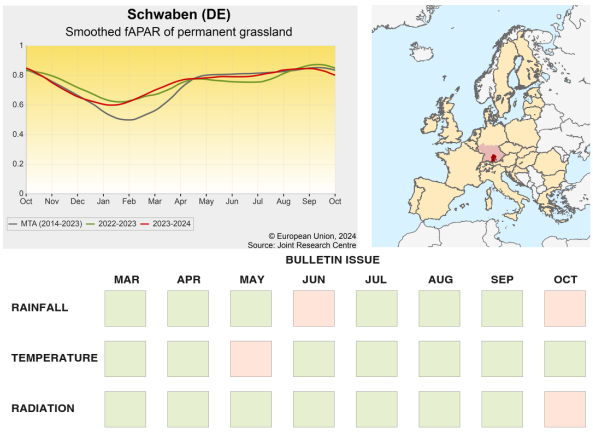
Czechia

Reference period: 01 Sep to 10 Oct 2024



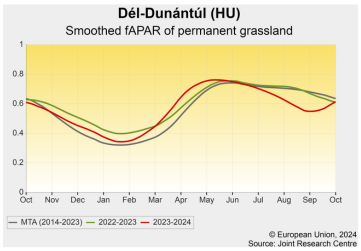
Germany - South

Reference period: 01 Sep to 10 Oct 2024



Hungary

Reference period: 01 Sep to 10 Oct 2024

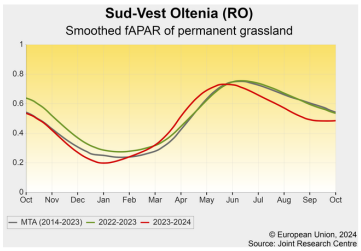


BULLETIN ISSUE

	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT
RAINFALL								
TEMPERATURE								
RADIATION								

Romania - East and South

Reference period: 01 Sep to 10 Oct 2024

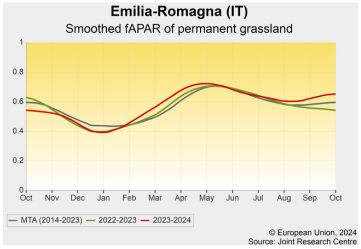


BULLETIN ISSUE

	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT
RAINFALL								
TEMPERATURE								
RADIATION								

Italy - North and central

Reference period: 01 Sep to 10 Oct 2024

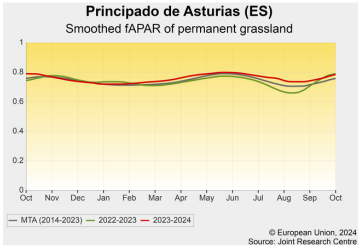


BULLETIN ISSUE

	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT
RAINFALL								
TEMPERATURE								
RADIATION								

Spain and Portugal - North

Reference period: 01 Sep to 10 Oct 2024



BULLETIN ISSUE

	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT
RAINFALL								
TEMPERATURE								
RADIATION								

3. Sowing conditions

Rapeseed

Sowing almost complete, with some delays due to excessively wet conditions in September

In **France**, sowing of rapeseed is completed. Fields sown in August are in overall good condition, although stands were locally affected by waterlogging in September. Late sowings in September were hampered by these waterlogging conditions, and emergence and conditions of these late-sown crops are more diverse, with less vigour and greater insect damage, especially on hydromorphic soils. Some fields will need to be resown.

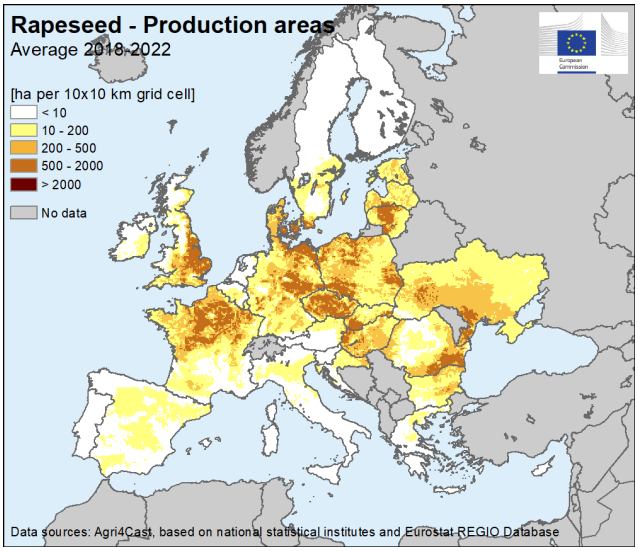
In **Germany** and **Poland**, sowing of rapeseed started earlier than usual, after the early harvest of winter and spring crops, and was almost completed by mid September. However, the wet conditions brought by Storm Boris increased pest pressure, and the reduced radiation and colder-than-usual temperatures will limit biomass development before dormancy and hence increase the risk of damage over winter.

Similarly, in **Czechia**, **Slovakia**, **Austria**, **Croatia**, **Hungary**, **Romania** and **Bulgaria**, rapeseed sowing started in August, with some delays in the driest regions of Croatia, Bulgaria and Romania. They are now complete or close to completion. Thanks to the precipitation brought by Storm Boris, and still-favourable temperatures, crops recovered from early desiccation. Although heavy rains and local floods endangered some fields in Czechia and northern Austria, the crops have emerged and are generally in good condition.

The sowing campaign was completed without problems in **Greece** but delayed in **Italy** and **Spain**. In Italy, early sowing was hampered by rainfall. The rapeseed sowing campaign in Spain is now almost completed after heavy precipitation in October, which hindered sowing operations for some farmers and forced others to resow.

In **Ireland**, rapeseed sowing proceeded as planned throughout the country, and conditions have been adequate for initial growth. In **Denmark** and **Sweden**, rapeseed sowing is completed; seedlings sown in late August might be locally damaged by the very warm and dry conditions that prevailed in early September, but the overall picture is positive.

In the **Baltic states**, winter rapeseed sowing has been completed in due time in both Lithuania and Latvia. Crops are expected to be in good condition. However, the current below-average rainfall, paired with the warmer–than-usual temperatures, may pose challenges for the recently emerged crops. Rain in the coming weeks will be necessary to sustain adequate development before entering winter dormancy.



Winter cereals

Slow progress in field preparations and sowing due to excessive rainfall

The winter cereals sowing campaign in **Denmark** and **Sweden** is nearly complete, and crops are expected to be in overall good condition. In the **Baltic states**, precipitation is needed to sustain crop development before dormancy, as the sowing campaign was characterised by rainfall deficit and warmer-than-usual temperatures. Winter cereals in **Finland** present good

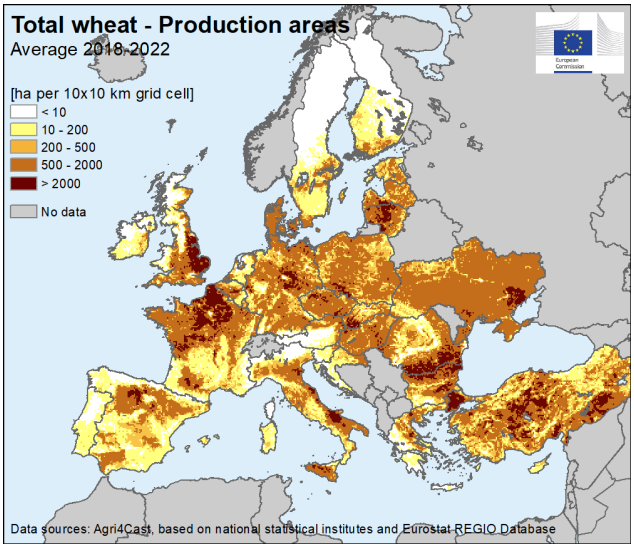
emergence, despite local overly wet soils due to high precipitation in late September and early October.

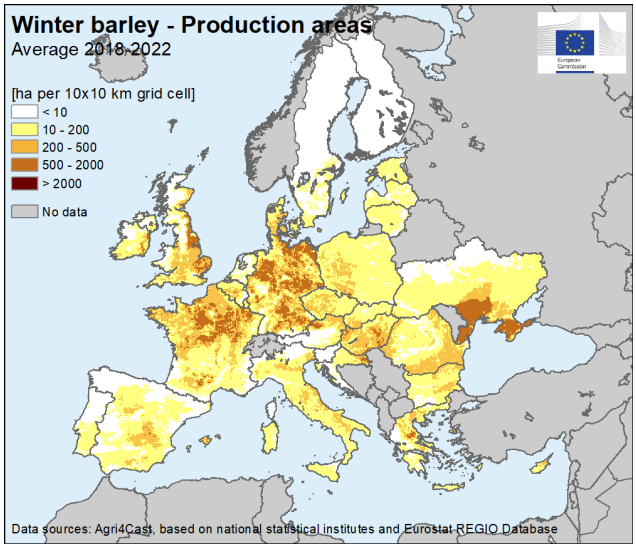
In **France**, above-average rainfall caused delays in field preparations and early sowing, with the sown area projected to be in line with or slightly below the 5-year average. Sowing in the **Benelux** countries was also hampered by frequent and intense rainfalls, with many farmers still focused on the delayed harvesting of summer crops. Southern **Germany** and **Austria** experienced delays in sowing due to excessively wet conditions in the aftermath of Storm Boris.

Winter crop sowings are currently under way in **Poland**, and are expected to be finished by the end of October. Sowing in **Hungary** was initially delayed by above-average rain in mid September and early October but is now progressing well. Heavy and abundant rain slowed down the sowing in eastern **Romania** and **Bulgaria**, mirroring the previous winter crop campaign.

In northern **Italy**, and in northern regions of **Spain** and **Portugal**, winter cereal sowings have been hampered by frequent rainfall events. Conversely, low topsoil moisture levels are likely to delay field preparations in **Greece** and in **Cyprus**, setting a moderate level of concern for durum wheat.

Sowing progress in the **United Kingdom** has been slower than usual after the heavy rain in September. Field preparations are delayed by 2 to 3 weeks in the northern regions due to the late harvest of summer crops. Part of the sowing might not be completed within an optimal window. In **Ukraine**, the sowing campaign for winter cereals has been particularly challenging in the eastern regions where dry conditions are persisting since summer. In **Türkiye** and the **Maghreb** region, the optimal sowing window for winter cereals will begin in November.





4. Country analysis

4.1. European Union

France

Adverse wet conditions affecting summer crop harvesting

During the review period, rainfall was significantly higher than normal, reaching values of 90 % above the LTA at the national level. Temperatures were below the LTA, especially the maximum temperatures in the western half of the country.

Maize and soybean entered the ripening stage in good condition, thanks to the favourable wet summer. However, persistent rain, which intensified since the end of September, is disrupting the harvest across much of the country and may cause grain quality issues. Moreover, due to the late planting and relatively cool temperatures this summer, there is a risk that part of the crops may not fully mature before winter arrives. This is particularly a concern in *Alsace*, where harvesting is about a month behind the usual schedule. Harvesting of sugar beet and potatoes is also hampered. Flooding (associated with Storm Kirk) in central eastern parts of France has had a negligible effect on overall national crop production. Our forecasts for crop yields remain unchanged.

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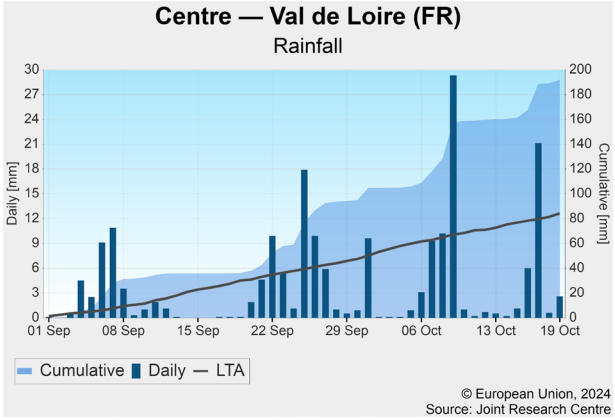


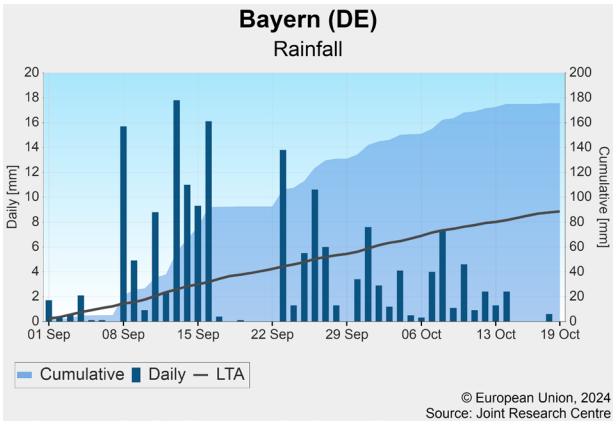
Germany

Rain delays sowing of winter cereals

A distinct warm spell in early September was followed by temperatures around the LTA. Precipitation was well above average in southern Germany, slightly above average in the north and centre, and around average in the east.

The maize harvest finished by early October, with some exceptions in the south; sugar beet and potatoes are currently being harvested. Despite late sowings, sugar beet has benefited from favourable weather and soil moisture since summer, so positive final yields can be expected, especially in the north. The early harvest of winter crops allowed for an advanced winter rapeseed sowing until mid September. The subsequent wet weather increased pest pressure, and the crops' advanced development could decrease their resilience to frost this winter. Winter cereal sowings were delayed by overly wet fields, especially in southern and western Germany. Less frequent precipitation and warmer temperatures in October should suffice to finish the sowing campaign, with some doubts persisting in the south.

Our summer crop yield forecasts were raised, for sunflowers and potatoes only slightly, to 3 % above the 5-year average, and for sugar beet to 5 % above the 5-year average.



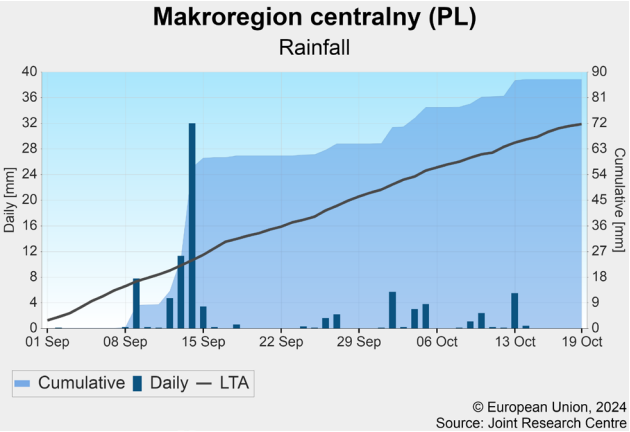
Poland

Good conditions for harvest and sowing despite regional flood damage

Temperatures in September were above average, especially in north-eastern Poland, returning to around average in October. Except for the flooded zones in southern Poland, precipitation totals were in line with the seasonal average, with minor rainfall deficits in the north-east and north-west.

The summer crop harvest is slightly ahead of schedule, approaching completion for maize and sunflowers. Harvest has started for potatoes and sugar beet, without notable disruptions except for the flood-affected regions in the south, where, however, the extent of the agricultural area flooded or exposed to high precipitation remained limited, with only minor impacts on national yield levels. The sowing of winter rapeseed was finished in September, and winter cereal sowing is currently ongoing, profiting from some dry days in October.

Our crop yield forecasts remain largely unchanged, with minor downward revisions (within 1 %) due to the floods in the south and the continued lower-than-average precipitation in the north-east.



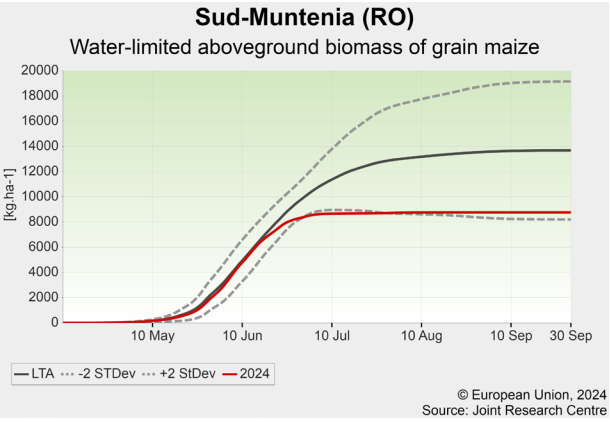
Romania

Low yield expectations of summer crops

A moderate (1–2 °C) positive thermal anomaly characterised Romania considering the review period as whole. The first and last dekads of September were much warmer than usual. Rainfall was scarce in the first dekad of September, but heavy rains in the second dekad of September caused floods in eastern Romania. Precipitation totals reached 150–200 mm along the eastern border, which is double to triple the LTA. *Sud-Vest-Oltenia* and *Sud-Muntenia* remained drier than usual, while other regions received near-average to moderately above-average precipitation.

Considering the severe water and heat stress in the main producing southern and eastern regions during this summer, grain maize and sunflower yield forecasts were revised downwards again, to a very low level. Wet weather hampered the harvesting of maize and sunflowers in the east, and floods are likely to have caused some additional losses there.

The sowing of winter crops was delayed, mainly in the eastern and northern regions of Romania, due to the intense rainfall. Sowing, germination and emergence of rapeseed were particularly problematic until 10 September, due to dry topsoils.



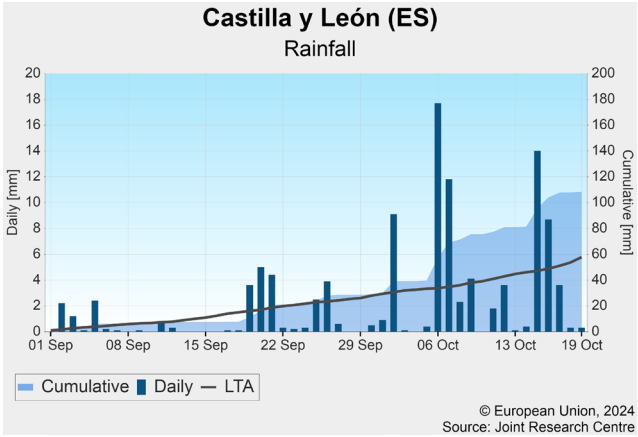
Spain and Portugal

Beneficial rain overall, but causing problems in northern regions

The review period was marked by several storm events and the return of seasonal temperatures throughout the peninsula. Cumulative rainfall was well above the LTA (by 50–150 %) in both countries, benefiting water reservoir levels and soil conditions in southern regions after the dry summer.

Despite being generally beneficial, the early-October rains in the north-west of the peninsula hampered the harvest of summer crops and may have caused damage to potato, sunflower and green maize fields that had not yet been harvested. Consequently, delays in field preparation may affect the start of winter cereal sowing, although there is still time to complete sowing within the usual window. Rapeseed sowing is almost complete; it is slightly delayed but within an acceptable sowing window.

Our yield forecasts for grain maize, sunflowers and sugar beet are maintained, slightly above the 5-year average, while the forecasts for green maize and potatoes are somewhat below the 5-year average.



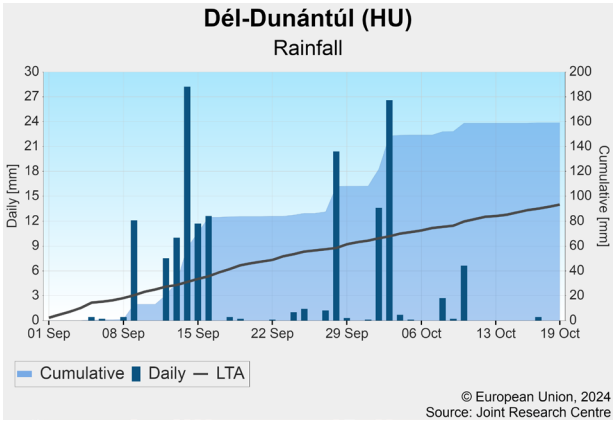
Hungary

Delayed winter wheat sowing campaign

The first dekad of September was very warm with daily temperatures exceeding the average by 4-6°C and daily maxima above 30°C. Later, temperatures gradually approached near-seasonal conditions. Cumulative rainfall reached 180-200 mm along the western border (i.e. twice the LTA), while to the east precipitation decreased, with just 80-100 mm measured in the south-east, only slightly exceeding LTA. The second dekad of September and first dekad of October were particularly wet. The rain impeded the ripening and drying of summer crops as well as the harvest at favourable grain moisture levels, further constraining their already reduced yield potential.

Rapeseed sowing has been concluded. In early September, dry soils hampered the emergence and early development, but the situation improved significantly with abundant rain arriving in the second dekad. The sowing of winter cereals started in late September, with slow initial progress due to the wet soils. Since the second dekad of October, sowing has been proceeding well, likely catching up the delay.

Our previous yield forecasts for summer crops were revised further downward to well below the 5-year average.



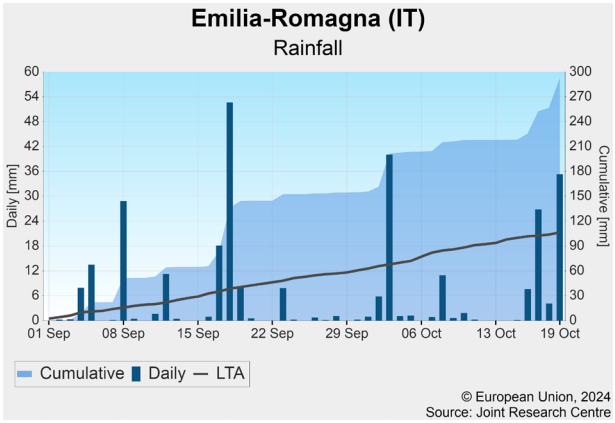
Italy

Harvest of maize delayed by too much rain

In the north, lower-than-average temperatures and abundant precipitation were unfavourable for maturing summer crops. Local floods occurred in most of the northern regions; the review period was the wettest since 1992. In Emilia-Romagna, the period saw the fourth flooding event of the year (around 19 October). Two cool and wet periods, around 15 September and 5 October, slowed the ripening of summer crops, and the overly wet conditions hampered the harvest, which is already 1 month later than usual due to the very late sowings. Consequently, green and grain maize are still being harvested in October. Negative impacts are expected on grain quality and the costs of drying, but less in terms of final yields.

In the south, the new season has not started yet and winter sowings are expected in late November.

Our yield forecasts have been revised slightly downwards to close to the trends for grain maize and soybean, while remaining around the trend for sunflowers and below the trend for sugar beet and green maize.



Czechia, Austria and Slovakia

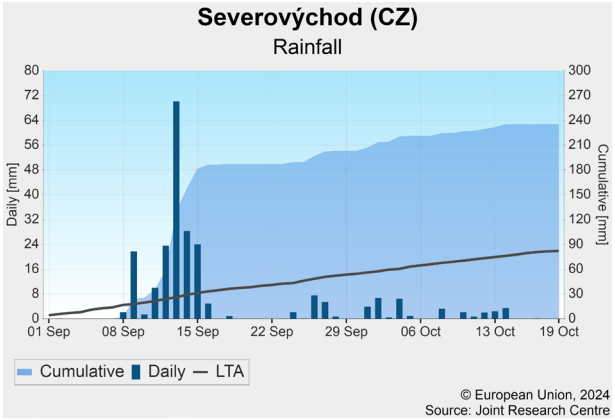
Challenging weather for the drilling of winter crops

Over the review period, temperatures were slightly higher than the LTA, but in early September all three countries were affected by the heatwave, resulting in early desiccation of crops. In the second dekad of September, Czechia and northern Austria were hit by Storm Boris, which brought up to 350 mm of rainfall to these regions. The weather has since returned to normal conditions.

The contrasting weather conditions in September made it very challenging for farmers to finalise the harvest of summer crops, which should have started earlier than usual due to the heatwave, and to start the drilling of winter crops. The sowing of winter cereals is under way, although delayed by up to 2 weeks in the regions most affected by heavy rainfall.

Rapeseed sowing was completed in September. The crops have now emerged and are in good condition.

The risk of disease for potatoes and sugar beet due to overly wet soils was reduced by drier weeks later in the review period. Our yield forecasts for summer crops remain close to or slightly lower than the historical trends.



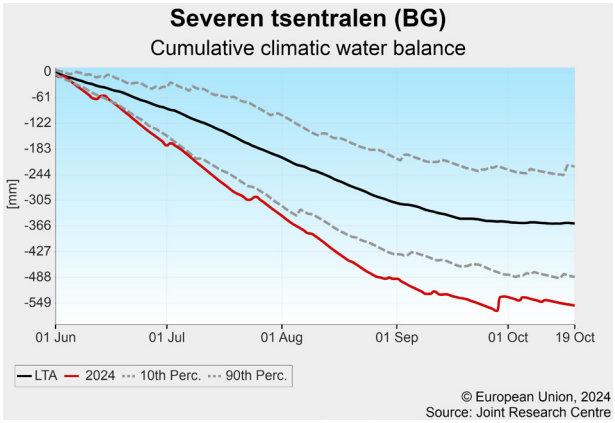
Bulgaria

Poor grain maize and sunflower yields

Daily temperatures fluctuated between 1 °C and 2 °C above the LTA during the review period. Precipitation remained 30–80 % below the LTA until 29 September, when abundant rainfall arrived, particularly in the northern and eastern regions. October was significantly drier than usual again.

The dry weather provided favourable conditions for the harvesting of summer crops, but rains caused interruptions and delays. Our grain maize and sunflower forecasts were decreased again, to an exceptionally low level (the lowest level since 2007), considering all negative impacts of heat and water stress since June.

The winter rapeseed sowing campaign was similar to last year's, suffering considerable delay compared with a normal year due to hard and dry topsoils. It was finished by mid October. The start of the sowing campaign of winter cereals was also late, but progress is improving and sowing can still be finished on time within an optimal window, though some more rain is needed to sustain adequate emergence and early growth.



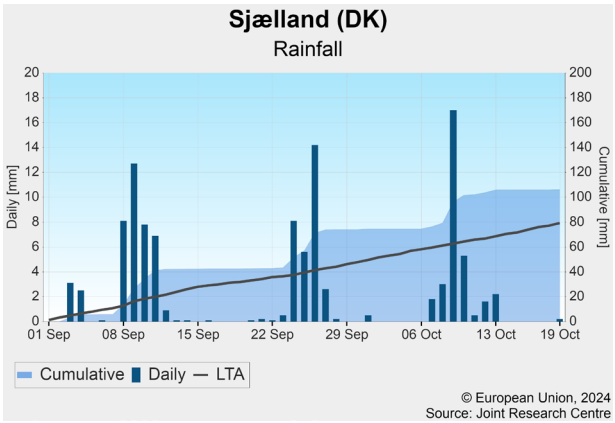
Denmark and Sweden

Winter sowings progressed under fair conditions

Dry periods alternated with intense rainfall in Denmark and Sweden. Total precipitation was above the LTA by approximately 30 % to 50 % in south-eastern Sweden and eastern Denmark (*Sjælland*), and elsewhere close to the LTA. The first 10 days of September were exceptionally warm, with average temperatures up to 7 °C above the LTA. Temperatures then became close to normal again, fluctuating around the LTA; a slight temperature accumulation surplus was reported for the whole period of analysis. Cumulative radiation levels were approximately 10 % above the LTA.

Winter crop sowing is close to completion, and recently emerged crops are, in general, in good condition.

Summer crops benefited from adequate conditions in the past weeks, and a fair harvest can be expected. Our yield forecasts for sugar beet, potato and green maize remain unchanged since the September bulletin.



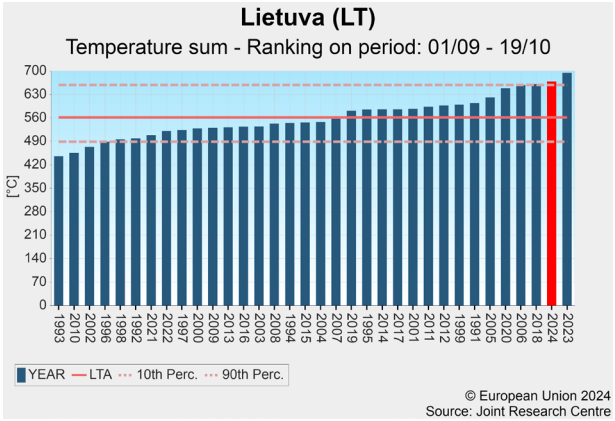
Estonia, Latvia, Lithuania, Finland

Winter crop sowing completed; emerging crops in fair condition

During the review period, rainfall episodes interchanged with dry days. Total rainfall was above the LTA by approximately 40 % in Finland, close to average in Estonia, and below average by approximately 20 % in Lithuania and Latvia, with regional disparities in all countries. Temperatures were largely above average for most of September, which was the warmest or second warmest in our records for all four countries, and returned to closer to the LTA in October. A positive radiation anomaly ranging between 5 % and 10 % was reported for all countries except Latvia, in line with the LTA.

Winter sowing progressed well in all countries and was completed within the optimal time window. Recently emerged crops are expected to be in fair condition.

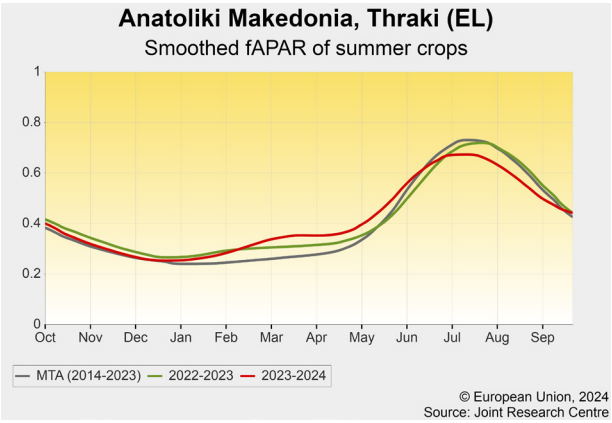
The potato and sugar beet harvest started, benefiting from the dry days of the review period. Our yield forecasts remain unchanged from the September edition of the Bulletin.



Greece and Cyprus

Bad summer crop season

The summer crop harvest in Greece concluded earlier than usual, marking one of the worst campaigns of the last 10 years. The persistently hot and dry summer had severely stressed summer crops, and the above-average temperatures and no more than average rainfall of the review period could not benefit them anymore. Our yield forecast for sunflower crops is 13 % below the 5-year average; some fields will remain unharvested and final yields may be even lower than expected ([1]). Drought and heat stress also affected maize severely during critical growth stages, leading to estimated yields at least 12 % below the 5-year average. Potatoes similarly faced low yields due to high temperatures, and many fields were left uncultivated due to high production costs, including irrigation. Overall, the combination of high temperatures and a rise in production costs has severely affected crop production in Greece. For the new season's sowing campaign in Greece and Cyprus, more rain is desirable to bring soil moisture levels back closer to normal.



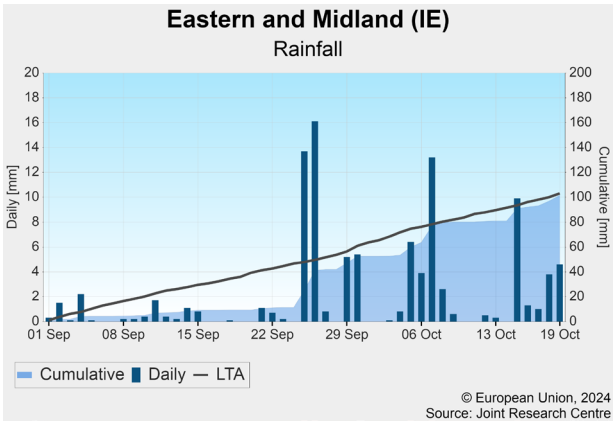
([1]) https://www.ertnews.gr/video/kozani-i-ksirasia-eplikse-kai-tin-kalliergeia-ilianthou/

Ireland

Dry September weather beneficial for timely spring crops harvest

Temperatures around the LTA characterised both the end of summer and start of autumn. The temperature sum (base 0°C) was close to normal, too. Rainfall anomalies ranged from 30% below the average in the north-west to 20% above the average in the south and south-east. Most of precipitation occurred from 25 September onwards, following a dry end of summer. Cumulative radiation during the review period remained slightly below the seasonal values in all regions.

The dry conditions during most of September favoured the completion of winter and spring crops harvesting. Green maize and field beans also benefited from fair weather during the review period and yield expectations are confirmed slightly above the 5-year average. Rapeseed sowing was completed during the dry period in September, and conditions are adequate for early growth. Winter cereal sowing is underway, despite the significant number of rainy days in October.

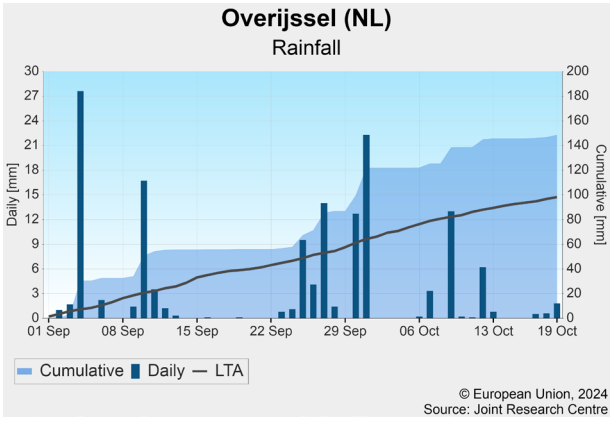


Belgium, Luxembourg and the Netherlands

Slow harvesting of summer crops, with below-average yields

Rainfall during the review period was above the LTA, with the highest anomalies – of more than twice the LTA – in Luxembourg and bordering regions of Belgium. The frequency of rain events was high, but there were also some drier days during the second dekad of September and the first week of October. Temperatures fluctuated considerably but were close to the LTA for the review period as a whole.

The harvesting of sugar beet is on schedule, while the potato and maize harvests are later than usual, partly as a consequence of the late sowing in spring, the delays from which have not been offset. Summer crop yields remain below the 5-year average, as confirmed by first harvest reports, albeit with high spatial variation; high yields are being achieved for crops sown on time on well-drained, non-compacted soils. The sowing of winter cereals has made a slow start, as many farmers (and contractors) have prioritised the harvesting of summer crops when weather conditions allowed.



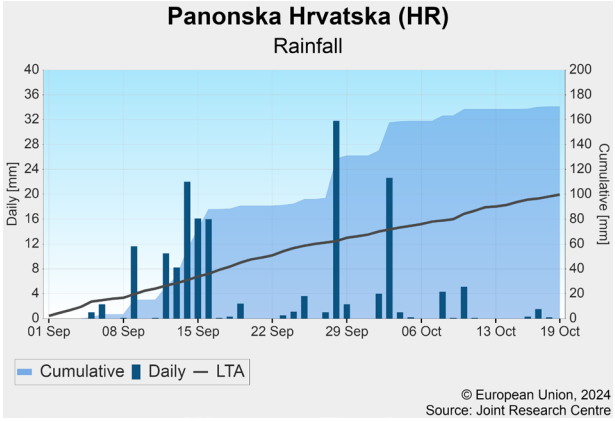
Slovenia and Croatia

Returning rain facilitated the winter sowing campaign

The review period was characterised by intense precipitation events in mid September and early October, with rainfall totals between 50 % and 100 % above the LTA. These events were accompanied by colder-than-usual days, while temperatures on non-rainy days remained in line with or above the LTA.

The rain disrupted the early summer crop harvest; preliminary reports suggested record-low grain maize moisture levels due to the persistent high temperatures until September. The adverse conditions, especially in eastern Croatia, significantly affected the country's sugar beet production. While our previous yield forecasts for summer crops remain unchanged for Slovenia, they have been revised downwards for Croatia, particularly for grain maize and sugar beet.

The rainfall in September improved the conditions for winter sowings and crop establishment. Rapeseed sowing was delayed in Croatia because there was insufficient soil moisture until mid September, but was still completed in time (i.e. by the end of month). Winter cereal sowing is progressing well in both countries in October.



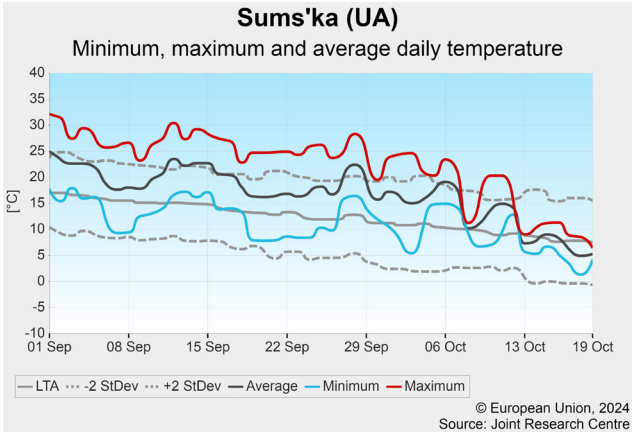
4.2. Black Sea Area

Ukraine

Warm start of autumn

In most regions, the hot and dry weather patterns that characterised summer persisted well into September. Throughout the review period, the entire country experienced above-average temperatures. In northern regions (e.g. *Sums'ka* oblast), average maximum temperatures in September were up to 7 °C above the LTA. The eastern half of the country faced a persistent rainfall deficit up to the end of September. However, overall precipitation levels across the country were aligned with the LTA, apart from the *Odes'ka* oblast, which encountered an excess of rainfall with intense events in early September and early October.

In the eastern and southern oblasts, maize crops had already reached full maturity in August, whereas, in the western oblasts, ripening accelerated rapidly in September. A heatwave, predominantly in the northern oblasts, hit grain maize during the grain-filling stage, and is expected to reduce yields. Meanwhile, rapeseed sowing proceeded at a normal rate and was nearly finished by the end of the review period. The sowing of winter cereals progressed well, with two thirds completed as of mid October.



Türkiye

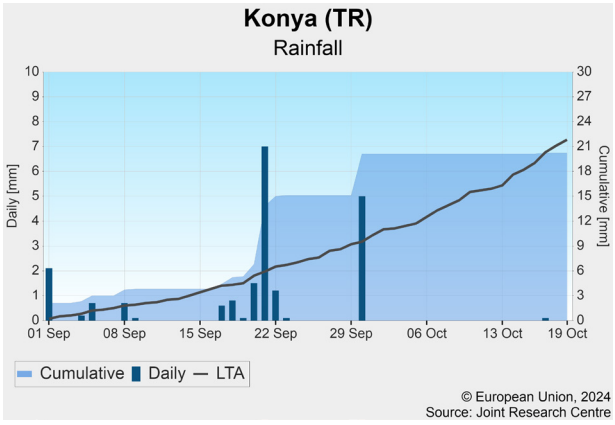
Favourable summer crop season

In Anatolian regions, the weather was warmer than usual but maximum temperatures remained below 30 °C. Rainfall was moderate and well distributed in September and has been completely absent since early October. Summer crops (soybean, maize and sugar beet) matured during September, when rain and warm temperatures supported the latest stages of yield formation, and the dry October has been favourable for the start of the harvest.

In the Mediterranean regions, summer crops were harvested during September apart from the *Hatay* region, where the second-season maize is still in grain filling. Overall, average yields are expected.

In the south-eastern regions, second-season summer crops developed well until 18 October, when a drop in temperatures may have affected grain filling and yield potential, which have so far been slightly above the average.

Our crop yield forecasts for summer crops are maintained close to the historical trend.



4.3. European Russia and Belarus

European Russia

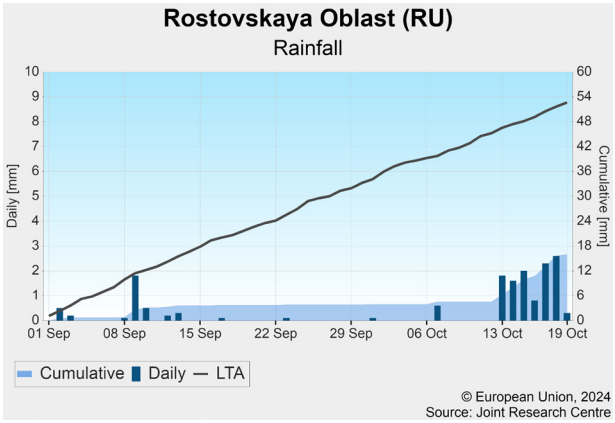
Dry autumn

In September, temperatures exceeded the LTA by 2–6 °C in most of European Russia, whereas the southern regions of the Volga okrug experienced near-seasonal temperatures. Temperatures in October fluctuated strongly, but were close to the LTA for the month as a whole. Around 10 October, a brief cold spell in south-eastern parts of the Volga okrug may have caused frost(-kill) damage in weakly developed winter wheat crop stands.

The period until the first dekad of October was one of the driest since 1991 in the main winter-cereals-producing regions of southern Russia. More significant rainfall in the second dekad of October somewhat improved the situation. The Caucasus region and the northern half of European Russia received more, but in most areas still below-average, rainfall.

The dry weather conditions favoured the harvest of grain maize. However, yield expectations are low due to the heatwaves and summer drought, as described in the September edition of the Bulletin ([2]).

The progress of sowing of winter cereals has been adequate, but the situation is worrisome. Dry soils hampered soil preparation and resulted in low-quality seed beds. Sprouting and emergence were also hindered. The rainfall in mid-October improved conditions, and adequate stands can still develop in most areas, depending on thermal conditions.

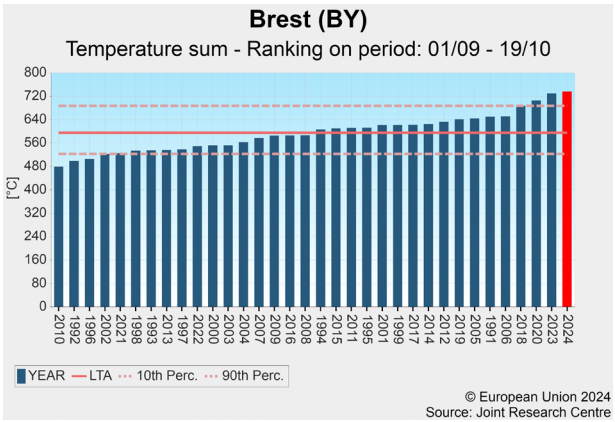


Belarus

Exceptionally warm end of summer with no effect on the positive yield outlook

September was characterised by very warm conditions in all regions, with average temperatures 4–5 °C above the LTA. Even more distinct anomalies were observed for maximum temperatures: up to 7 °C above the LTA. The review period as a whole was the warmest in our records (since 1991), even though thermal conditions aligned with the LTA from the beginning of October. The first half of September was practically dry, but regular rainfall since then resulted in rainfall totals that were close to seasonal levels in *Brest* and 30–50 % below the LTA elsewhere, with the most distinct negative anomalies in *Vitebsk* and *Grodno*.

Overall, the warm and relatively dry conditions were beneficial for the grain maize harvesting campaign, which ran ahead of schedule and is now finished. The rainfall from mid-September raised topsoil moisture contents to favourable levels for seedbed preparation and sowing, especially in the south-east where the water deficit was becoming critical. The sowing of winter wheat is running smoothly; in the *Brest* region it is already completed.

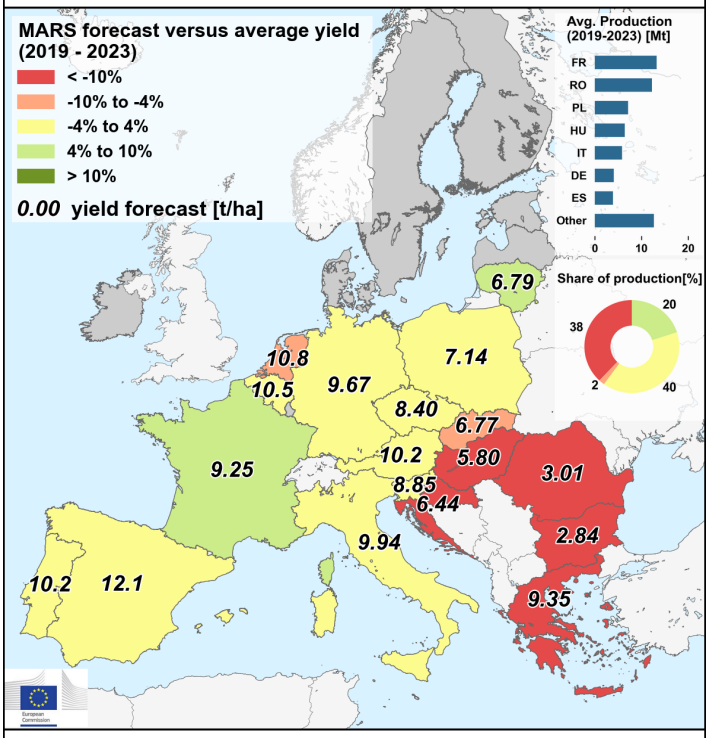


([2]) https://publications.jrc.ec.europa.eu/repository/handle/JRC136674.

5. Crop yield forecast

Country	Grain maize (t/ha)					
	Avg 5yrs	2023	MARS 2024 forecasts	%24/5yrs	%24/23	% Diff October / September
EU	7.35	7.51	**6.66**	– 9	– 11	– 3
AT	10.5	9.93	**10.2**	– 4	+ 2	+ 0
BE	10.8	12.1	**10.5**	– 3	– 13	+ 0
BG	5.50	4.48	**2.84**	– 48	– 37	– 16
CY	—	—	—	—	—	—
CZ	8.75	7.88	**8.40**	– 4	+ 7	+ 0
DE	9.36	9.65	**9.67**	+ 3	+ 0	+ 0
DK	—	—	—	—	—	—
EE	—	—	—	—	—	—
EL	10.6	9.50	**9.35**	– 12	– 2	+ 0
ES	12.0	11.7	**12.1**	+ 0	+ 3	– 1
FI	—	—	—	—	—	—
FR	8.77	9.83	**9.25**	+ 6	– 6	+ 0
HR	7.76	7.42	**6.44**	– 17	– 13	– 10
HU	6.93	8.17	**5.80**	– 16	– 29	– 6
IE	—	—	—	—	—	—
IT	10.1	10.7	**9.94**	– 2	– 7	– 3
LT	6.51	8.24	**6.79**	+ 4	– 18	+ 0
LU	—	—	—	—	—	—
LV	—	—	—	—	—	—
MT	—	—	—	—	—	—
NL	11.3	12.8	**10.8**	– 4	– 15	+ 0
PL	7.05	7.29	**7.14**	+ 1	– 2	– 1
PT	9.90	10.7	**10.2**	+ 3	– 5	– 1
RO	4.89	4.70	**3.01**	– 38	– 36	– 10
SE	—	—	—	—	—	—
SI	8.96	8.79	**8.85**	– 1	+ 1	+ 0
SK	7.17	7.57	**6.77**	– 6	– 11	+ 0

Grain maize - yield forecast 2024



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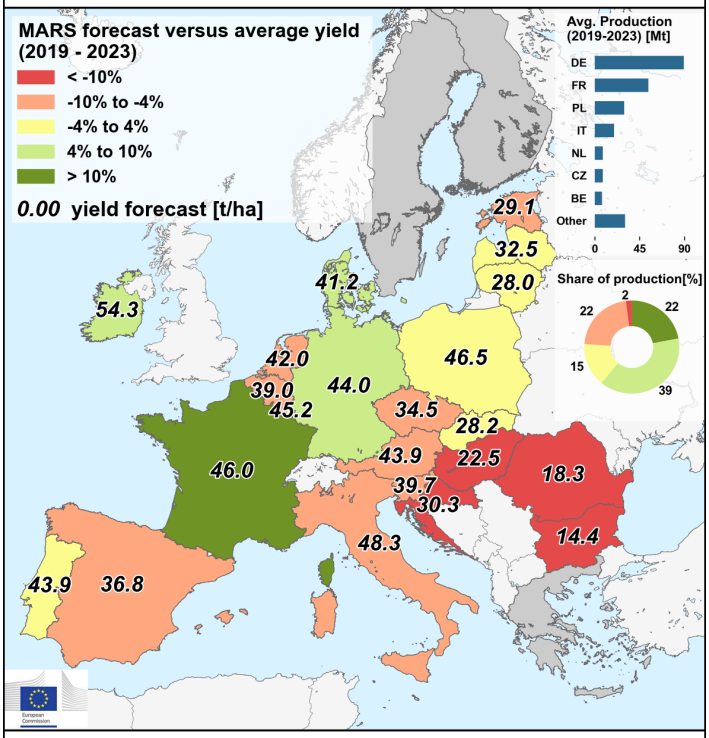
Country	Green maize (t/ha)					
	Avg 5yrs	2023	MARS 2024 forecasts	%24/5yrs	%24/23	% Diff October / September
EU*	41.7	43.2	**43.2**	+ 4	+ 0	– 0
AT	46.2	42.0	**43.9**	– 5	+ 4	+ 0
BE	40.9	41.1	**39.0**	– 5	– 5	+ 0
BG	20.9	18.9	**14.4**	– 31	– 24	– 7
CY	—	—	—	—	—	—
CZ	36.3	32.3	**34.5**	– 5	+ 7	+ 0
DE	41.5	42.1	**44.0**	+ 6	+ 4	+ 0
DK	38.9	37.0	**41.2**	+ 6	+ 11	+ 4
EE	31.6	30.2	**29.1**	– 8	– 4	+ 0
EL	—	—	—	—	—	—
ES	38.4	47.3	**36.8**	– 4	– 22	+ 0
FI	—	—	—	—	—	—
FR	40.9	46.0	**46.0**	+ 13	+ 0	+ 0
HR	35.4	34.9	**30.3**	– 15	– 13	– 6
HU	27.8	31.1	**22.5**	– 19	– 28	– 8
IE	51.7	54.6	**54.3**	+ 5	– 1	+ 0
IT	52.2	54.1	**48.3**	– 8	– 11	+ 0
LT	28.2	27.9	**28.0**	– 1	+ 1	+ 0
LU	46.2	50.9	**45.2**	– 2	– 11	– 4
LV	31.4	27.3	**32.5**	+ 4	+ 19	+ 0
MT	—	—	—	—	—	—
NL	44.0	45.7	**42.0**	– 5	– 8	+ 0
PL	46.0	46.7	**46.5**	+ 1	– 0	– 1
PT	44.4	45.1	**43.9**	– 1	– 3	– 0
RO	24.0	21.4	**18.3**	– 24	– 14	+ 0
SE	—	—	—	—	—	—
SI	42.2	39.9	**39.7**	– 6	– 0	+ 1
SK	29.1	31.5	**28.2**	– 3	– 10	+ 0

Green maize - yield forecast 2024



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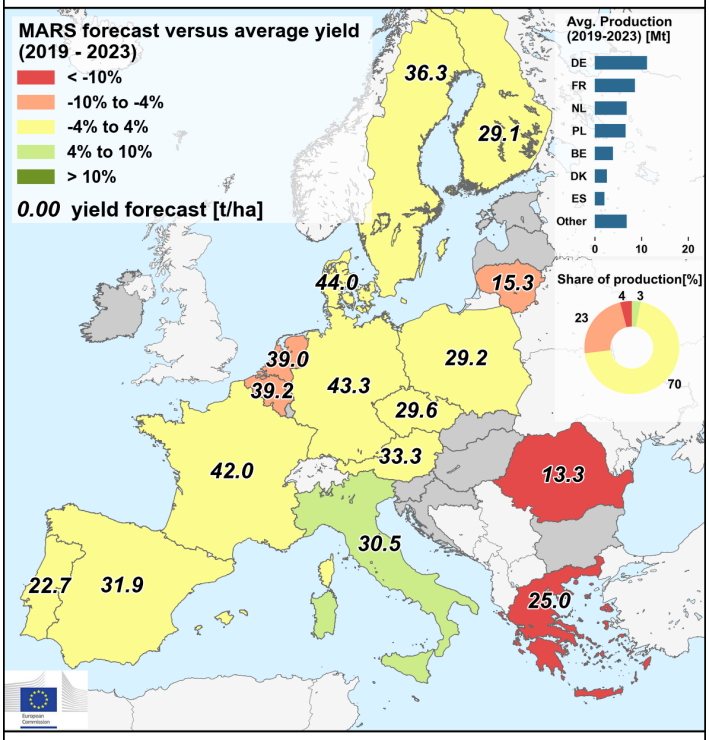
Country	Potatoes (t/ha)					
	Avg 5yrs	2023	MARS 2024 forecasts	%24/5yrs	%24/23	% Diff October / September
EU	35.4	36.8	**36.0**	+ 2	– 2	+ 0
AT	32.7	28.8	**33.3**	+ 2	+ 15	+ 3
BE	41.4	43.5	**39.2**	– 5	– 10	+ 0
BG	—	—	—	—	—	—
CY	—	—	—	—	—	—
CZ	28.7	27.4	**29.6**	+ 3	+ 8	+ 0
DE	41.9	43.9	**43.3**	+ 3	– 1	+ 2
DK	43.7	45.1	**44.0**	+ 1	– 2	+ 0
EE	—	—	—	—	—	—
EL	28.6	27.7	**25.0**	– 12	– 10	+ 0
ES	32.3	32.0	**31.9**	– 1	– 0	+ 0
FI	28.9	30.2	**29.1**	+ 0	– 4	+ 0
FR	41.0	42.2	**42.0**	+ 3	– 0	+ 0
HR	—	—	—	—	—	—
HU	—	—	—	—	—	—
IE	—	—	—	—	—	—
IT	29.0	27.8	**30.5**	+ 5	+ 10	+ 0
LT	16.1	18.1	**15.3**	– 5	– 16	+ 0
LU	—	—	—	—	—	—
LV	—	—	—	—	—	—
MT	—	—	—	—	—	—
NL	42.2	41.8	**39.0**	– 8	– 7	+ 0
PL	28.8	29.6	**29.2**	+ 2	– 1	+ 0
PT	23.6	24.2	**22.7**	– 4	– 6	+ 0
RO	15.6	14.1	**13.3**	– 15	– 5	– 8
SE	35.8	35.6	**36.3**	+ 1	+ 2	+ 0
SI	—	—	—	—	—	—
SK	—	—	—	—	—	—

Potatoes - yield forecast 2024



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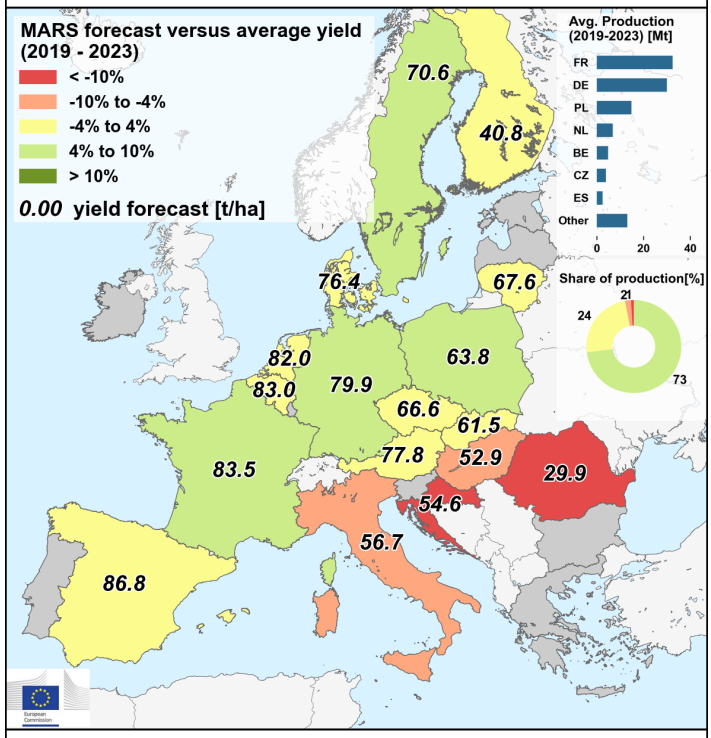
Country	Sugar beet (t/ha)					
	Avg 5yrs	2023	MARS 2024 forecasts	%24/5yrs	%24/23	% Diff October / September
EU	73.2	75.3	**75.4**	+ 3	+ 0	+ 1
AT	77.1	75.0	**77.8**	+ 1	+ 4	+ 0
BE	86.2	87.0	**83.0**	– 4	– 5	– 1
BG	—	—	—	—	—	—
CY	—	—	—	—	—	—
CZ	65.2	65.2	**66.6**	+ 2	+ 2	+ 0
DE	75.9	79.7	**79.9**	+ 5	+ 0	+ 4
DK	76.4	74.8	**76.4**	– 0	+ 2	+ 0
EE	—	—	—	—	—	—
EL	—	—	—	—	—	—
ES	85.3	81.5	**86.8**	+ 2	+ 7	+ 0
FI	40.5	38.5	**40.8**	+ 1	+ 6	+ 0
FR	78.8	83.4	**83.5**	+ 6	+ 0	+ 0
HR	66.6	62.4	**54.6**	– 18	– 13	– 14
HU	56.8	58.0	**52.9**	– 7	– 9	– 2
IE	—	—	—	—	—	—
IT	59.4	65.7	**56.7**	– 5	– 14	+ 0
LT	66.5	72.2	**67.6**	+ 2	– 6	+ 0
LU	—	—	—	—	—	—
LV	—	—	—	—	—	—
MT	—	—	—	—	—	—
NL	84.3	85.3	**82.0**	– 3	– 4	– 1
PL	60.8	61.3	**63.8**	+ 5	+ 4	+ 1
PT	—	—	—	—	—	—
RO	36.6	33.1	**29.9**	– 18	– 10	+ 0
SE	67.7	60.4	**70.6**	+ 4	+ 17	+ 0
SI	—	—	—	—	—	—
SK	60.2	63.6	**61.5**	+ 2	– 3	+ 0

Sugar beet - yield forecast 2024



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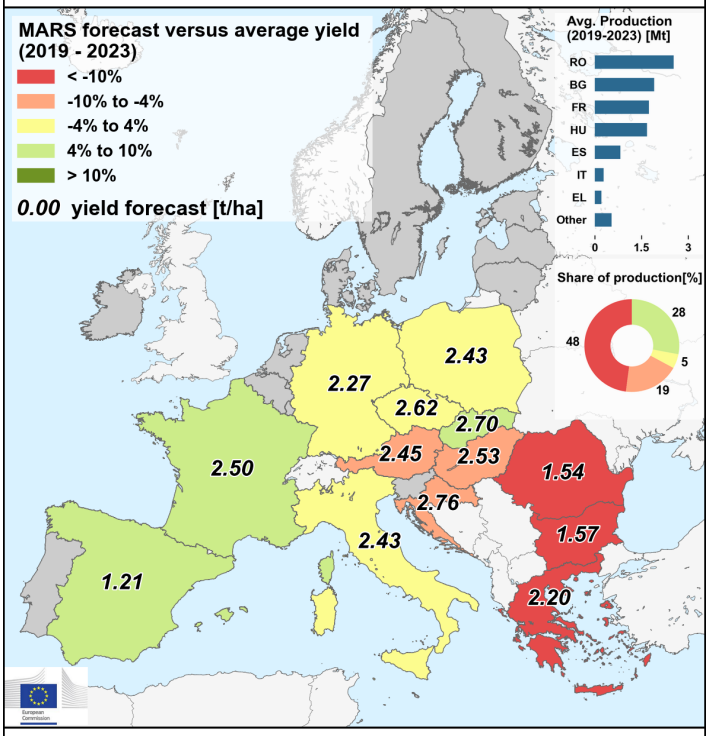
Country	Sunflower (t/ha)					
	Avg 5yrs	2023	MARS 2024 forecasts	%24/5yrs	%24/23	% Diff October / September
EU	2.15	2.10	**1.86**	– 13	– 11	– 6
AT	2.68	2.69	**2.45**	– 9	– 9	+ 0
BE	—	—	—	—	—	—
BG	2.24	2.03	**1.57**	– 30	– 23	– 13
CY	—	—	—	—	—	—
CZ	2.63	2.49	**2.62**	– 0	+ 5	+ 0
DE	2.20	2.47	**2.27**	+ 3	– 8	+ 1
DK	—	—	—	—	—	—
EE	—	—	—	—	—	—
EL	2.52	2.42	**2.20**	– 13	– 9	+ 0
ES	1.13	1.12	**1.21**	+ 7	+ 7	– 1
FI	—	—	—	—	—	—
FR	2.30	2.50	**2.50**	+ 8	– 0	+ 0
HR	2.93	2.64	**2.76**	– 6	+ 5	– 4
HU	2.64	2.90	**2.53**	– 4	– 13	– 2
IE	—	—	—	—	—	—
IT	2.44	2.49	**2.43**	– 0	– 2	+ 0
LT	—	—	—	—	—	—
LU	—	—	—	—	—	—
LV	—	—	—	—	—	—
MT	—	—	—	—	—	—
NL	—	—	—	—	—	—
PL	2.35	2.36	**2.43**	+ 4	+ 3	– 1
PT	—	—	—	—	—	—
RO	2.21	1.86	**1.54**	– 31	– 18	– 12
SE	—	—	—	—	—	—
SI	—	—	—	—	—	—
SK	2.58	2.78	**2.70**	+ 5	– 3	+ 0

Sunflower - yield forecast 2024



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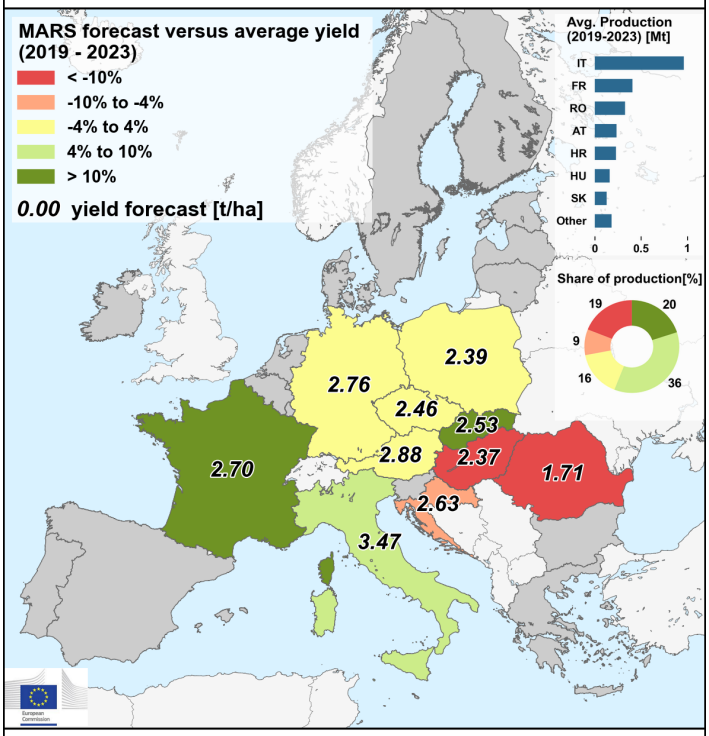
Country	Soybeans (t/ha)					
	Avg 5yrs	2023	MARS 2024 forecasts	%24/5yrs	%24/23	% Diff October / September
EU	2.73	2.85	**2.72**	– 0	– 5	– 3
AT	2.95	3.06	**2.88**	– 2	– 6	+ 0
BE	—	—	—	—	—	—
BG	—	—	—	—	—	—
CY	—	—	—	—	—	—
CZ	2.38	2.39	**2.46**	+ 3	+ 3	+ 0
DE	2.75	2.88	**2.76**	+ 0	– 4	+ 0
DK	—	—	—	—	—	—
EE	—	—	—	—	—	—
EL	—	—	—	—	—	—
ES	—	—	—	—	—	—
FI	—	—	—	—	—	—
FR	2.41	2.44	**2.70**	+ 12	+ 11	+ 0
HR	2.76	2.86	**2.63**	– 5	– 8	+ 0
HU	2.65	3.04	**2.37**	– 11	– 22	– 4
IE	—	—	—	—	—	—
IT	3.28	3.39	**3.47**	+ 6	+ 2	– 4
LT	—	—	—	—	—	—
LU	—	—	—	—	—	—
LV	—	—	—	—	—	—
MT	—	—	—	—	—	—
NL	—	—	—	—	—	—
PL	2.31	2.58	**2.39**	+ 3	– 7	+ 0
PT	—	—	—	—	—	—
RO	2.19	2.14	**1.71**	– 22	– 20	– 7
SE	—	—	—	—	—	—
SI	—	—	—	—	—	—
SK	2.27	2.59	**2.53**	+ 11	– 2	+ 0

Soybeans - yield forecast 2024



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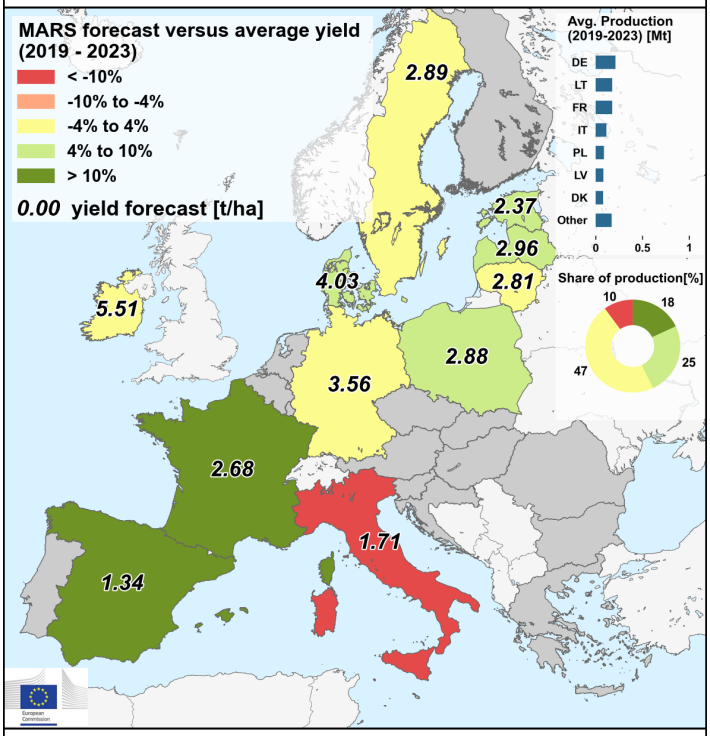
Country	Field beans (t/ha)					
	Avg 5yrs	2023	MARS 2024 forecasts	%24/5yrs	%24/23	% Diff October / September
EU	2.72	2.53	**2.84**	+ 5	+ 12	+ 1
AT	—	—	—	—	—	—
BE	—	—	—	—	—	—
BG	—	—	—	—	—	—
CY	—	—	—	—	—	—
CZ	—	—	—	—	—	—
DE	3.55	2.88	**3.56**	+ 0	+ 24	+ 0
DK	3.83	3.27	**4.03**	+ 5	+ 23	+ 0
EE	2.25	2.32	**2.37**	+ 5	+ 2	+ 0
EL	—	—	—	—	—	—
ES	1.12	1.00	**1.34**	+ 19	+ 34	+ 3
FI	—	—	—	—	—	—
FR	2.41	2.66	**2.68**	+ 11	+ 1	+ 13
HR	—	—	—	—	—	—
HU	—	—	—	—	—	—
IE	5.33	5.00	**5.51**	+ 3	+ 10	+ 0
IT	1.93	1.98	**1.71**	– 11	– 14	+ 0
LT	2.72	2.37	**2.81**	+ 3	+ 18	+ 0
LU	—	—	—	—	—	—
LV	2.83	2.30	**2.96**	+ 5	+ 29	+ 0
MT	—	—	—	—	—	—
NL	—	—	—	—	—	—
PL	2.74	2.61	**2.88**	+ 5	+ 10	+ 0
PT	—	—	—	—	—	—
RO	—	—	—	—	—	—
SE	2.94	2.42	**2.89**	– 2	+ 19	+ 0
SI	—	—	—	—	—	—
SK	—	—	—	—	—	—

Field beans - yield forecast 2024



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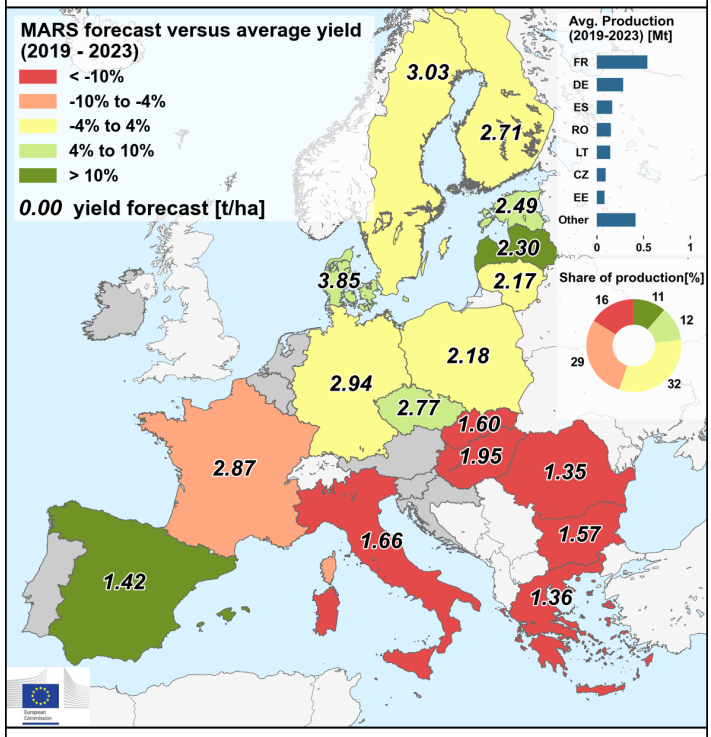
Country	Field peas (t/ha)					
	Avg 5yrs	2023	MARS 2024 forecasts	%24/5yrs	%24/23	% Diff October / September
EU	2.34	2.00	**2.20**	– 6	+ 10	– 1
AT	—	—	—	—	—	—
BE	—	—	—	—	—	—
BG	2.09	2.25	**1.57**	– 25	– 30	– 13
CY	—	—	—	—	—	—
CZ	2.55	2.25	**2.77**	+ 9	+ 23	+ 0
DE	2.95	2.25	**2.94**	– 0	+ 31	+ 0
DK	3.67	2.88	**3.85**	+ 5	+ 34	+ 0
EE	2.28	2.20	**2.49**	+ 9	+ 13	+ 0
EL	1.55	1.60	**1.36**	– 13	– 15	+ 0
ES	1.18	0.67	**1.42**	+ 20	+ 111	+ 0
FI	2.64	2.54	**2.71**	+ 3	+ 7	+ 0
FR	3.16	3.21	**2.87**	– 9	– 11	– 0
HR	—	—	—	—	—	—
HU	2.38	2.34	**1.95**	– 18	– 17	– 19
IE	—	—	—	—	—	—
IT	2.82	2.65	**1.66**	– 41	– 38	+ 0
LT	2.14	2.10	**2.17**	+ 1	+ 3	+ 0
LU	—	—	—	—	—	—
LV	2.05	1.84	**2.30**	+ 12	+ 25	+ 0
MT	—	—	—	—	—	—
NL	—	—	—	—	—	—
PL	2.12	2.12	**2.18**	+ 3	+ 3	+ 0
PT	—	—	—	—	—	—
RO	1.73	1.67	**1.35**	– 22	– 19	– 5
SE	2.95	2.06	**3.03**	+ 3	+ 47	+ 0
SI	—	—	—	—	—	—
SK	2.47	2.08	**1.60**	– 35	– 23	+ 0

Field peas - yield forecast 2024



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Country	Grain maize (t/ha)					
	Avg 5yrs	2023	MARS 2024 forecasts	%24/5yrs	%24/23	% Diff October / September
BY	5.43	5.56	**5.63**	+ 4	+ 1	+ 0
TR	9.29	9.40	**9.68**	+ 4	+ 3	+ 0
UA	6.90	7.73	**6.26**	– 9	– 19	+ 0
UK	—	—	**—**	—	—	—

Country	Soybean (t/ha)					
	Avg 5yrs	2023	MARS 2024 forecasts	%24/5yrs	%24/23	% Diff October / September
BY	—	—	**—**	—	—	—
TR	4.22	4.21	**4.54**	+ 8	+ 8	+ 0
UA	2.38	2.61	**2.38**	+ 0	– 9	+ 0
UK	—	—	**—**	—	—	—

NB: Yields are forecast for crops with more than 10 000 ha per country with sufficently long and coherent yield time series (for rice more than 1 000 ha per country).

Sources: 2019-2024 data come from DG Agriculture and Rural Development short-term-outlook data (dated September 2024, received on 11.10.2024), Eurostat Eurobase (last update: 01.10.2024), ELSTAT, National Statistical Institute (ISTAT), Statistics Netherlands (CBS), DESTATIS and EES (last update: 15.11.2017).

Non-EU 2019-2023 data come from USDA, Turkish Statistical Institute (TurkStat), Eurostat Eurobase (last update: 01.10.2024), Ministry for Development of Economy, Trade and Agriculture of Ukraine, Department for Environment, Food & Rural Affairs of UK (DEFRA), FAO and PSD-online.

2024 yields come from MARS Crop Yield Forecasting System (output up to 20.10.2024).

EU aggregate after 1.2.2020 is reported.

The column header '%24/5yrs' stands for the 2024 change with respect to the 5-year average(%). Similarly, '%24/23' stands for the 2024 change with respect to 2023(%).

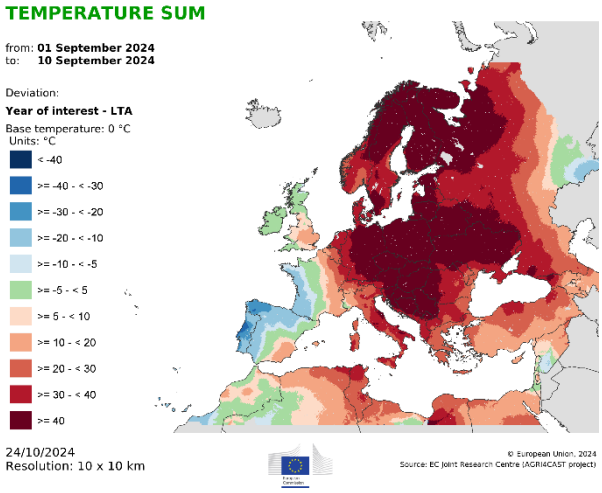
* The EU figures do not include green maize forecasts for Sweden since recent data on yields were not consistent.

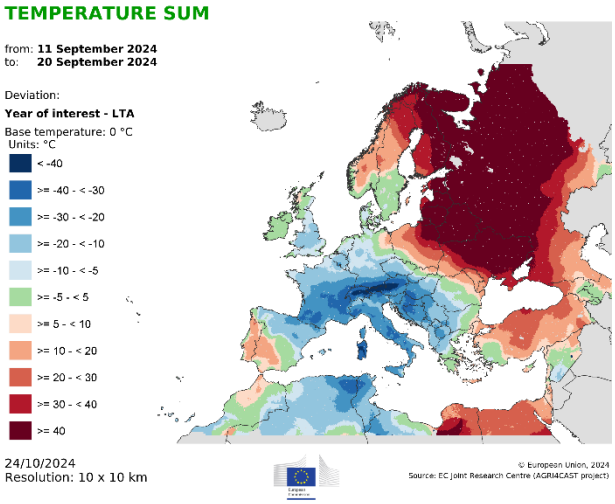
Cop name	Eurostat Crop name	Eurostat Crop Code	Official Eurostat Crop definition*
Total wheat	Wheat and spelt	C1100	Common wheat (*Triticum aestivum* L. emend. Fiori et Paol.), spelt (*Triticum spelta* L.), einkorn wheat (*Triticum monococcum* L.) and durum wheat (*Triticum durum* Desf.).
Total barley	Barley	C1300	Barley (*Hordeum vulgare* L.).
Soft wheat	Common wheat and spelt	C1110	Common wheat (*Triticum aestivum* L. emend. Fiori et Paol.), spelt (*Triticum spelta* L.) and einkorn wheat (*Triticum monococcum* L.).
Durum what	Durum wheat	C1120	*Triticum durum* Desf.
Spring barley	Spring barley	C1320	Barley (*Hordeum vulgare* L.) sown in the spring.
Winter barley	Winter barley	C1310	Barley (*Hordeum vulgare* L.) sown before or during winter.
Grain maize	Grain maize and corn-cob-mix	C1500	Maize (*Zea mays* L.) harvested for grain, as seed or as corn-cob-mix.
Green maize	Green maize	G3000	All forms of maize (*Zea mays* L.) grown mainly for silage (whole cob, parts of or whole plant) and not harvested for grain.
Rye	Rye and winter cereal mixtures (maslin)	C1200	Rye (*Secale cereale* L.) sown any time, mixtures of rye and other cereals and other cereal mixtures sown before or during the winter (maslin).
Triticale	Triticale	C1600	Triticale (x *Triticosecale* Wittmack).
Rape and turnip rape	Rape and turnip rape seeds	I1110	Rape (*Brassica napus* L.) and turnip rape (*Brassica rapa* L. var. oleifera (Lam.)) grown for the production of oil, harvested as dry grains.
Sugar beet	Sugar beet (excluding seed)	R2000	Sugar beet (*Beta vulgaris* L.) intended for the sugar industry, alcohol production or renewable energy production.
Potatoes	Potatoes (including seed potatoes)	R1000	Potatoes (*Solanum tuberosum* L.).
Sunflower	Sunflower seed	I1120	Sunflower (*Helianthus annuus* L.) harvested as dry grains.
Soybeans	Soya	I1130	Soya (*Glycine max* L. Merril) harvested as dry grains.
Field beans	Broad and field beans	P1200	All varieties of broad and field beans (Faba vulgaris (Moench) syn. Vicia faba L. (partim)) harvested dry for grain, including seed.
Field peas	Field peas	P1100	All varieties of field peas (Pisum sativum L. convar. sativum or Pisum sativum L. convar. arvense L. or convar. speciosum) harvested dry for grain, including seed.
Rice	Rice	C2000	Rice (*Oryza sativa*, L.).

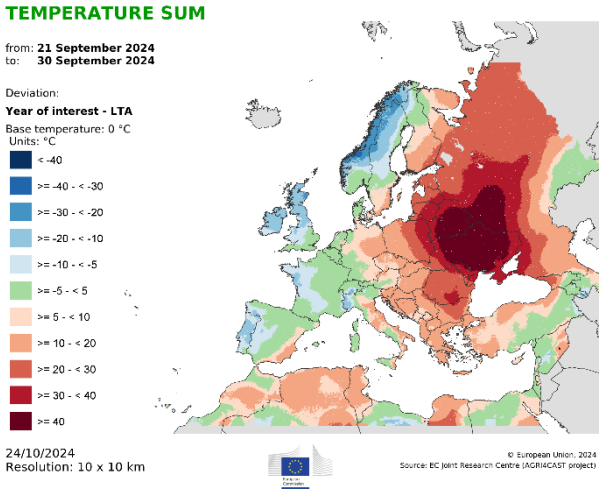
** Source:* Eurostat - Annual crop statistics (Handbook 2020 Edition)

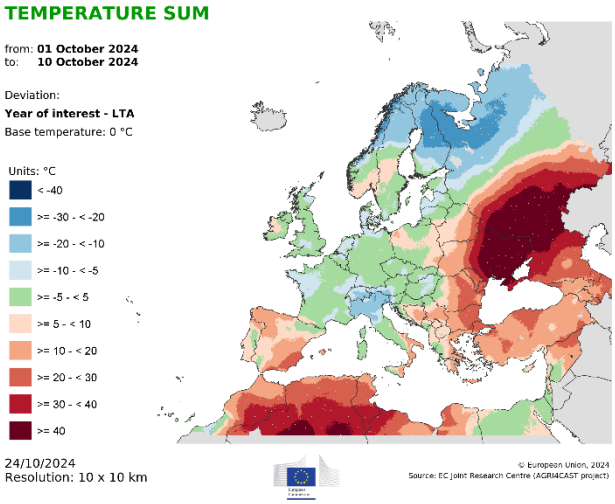
6. Atlas

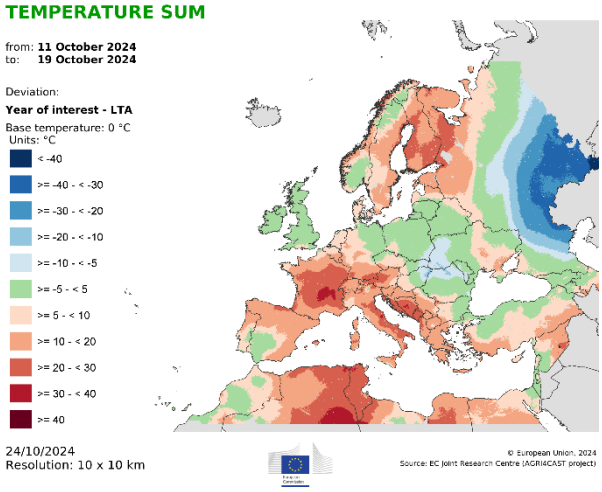
Temperature regime



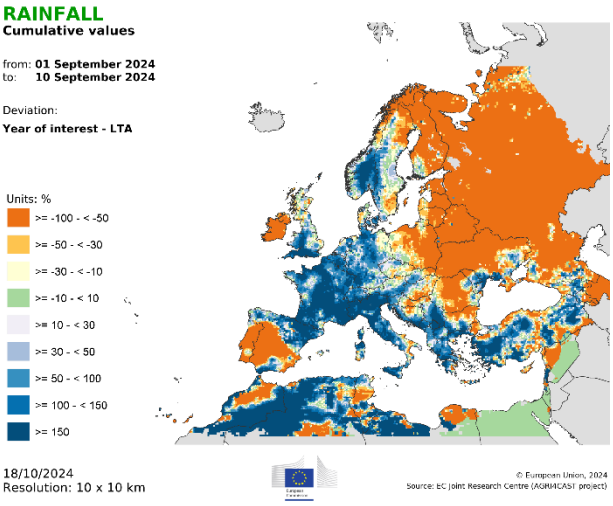


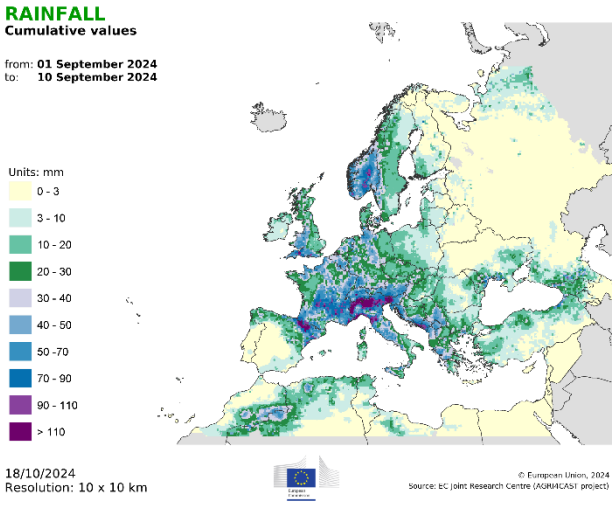


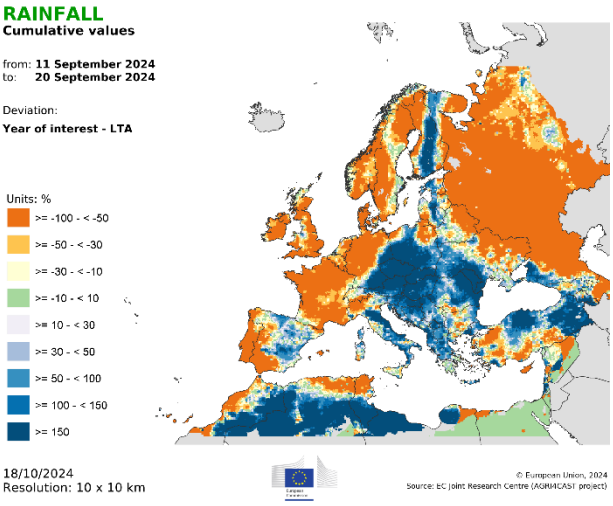


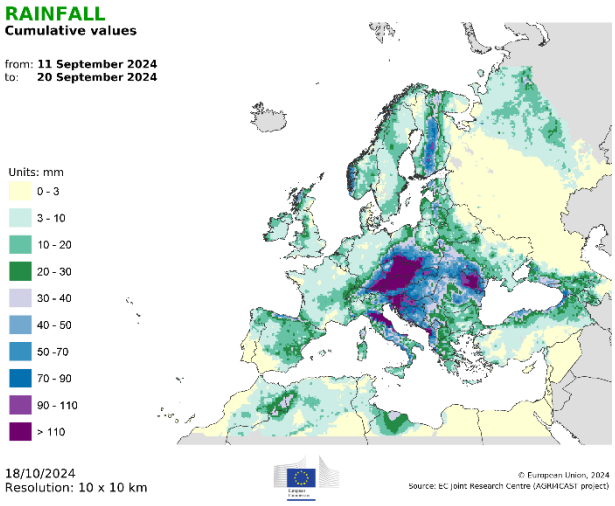


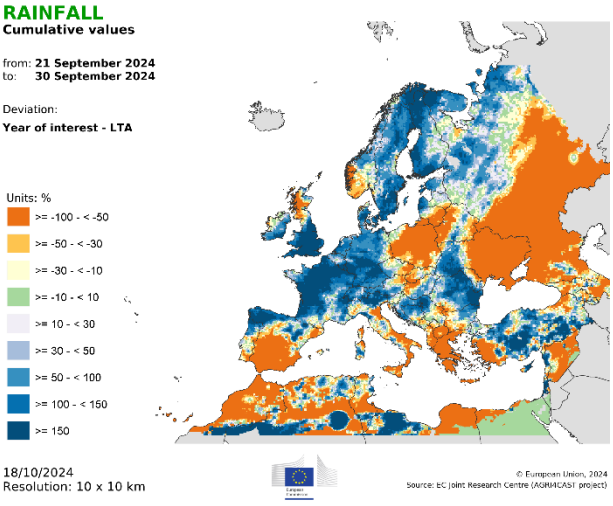
Precipitation

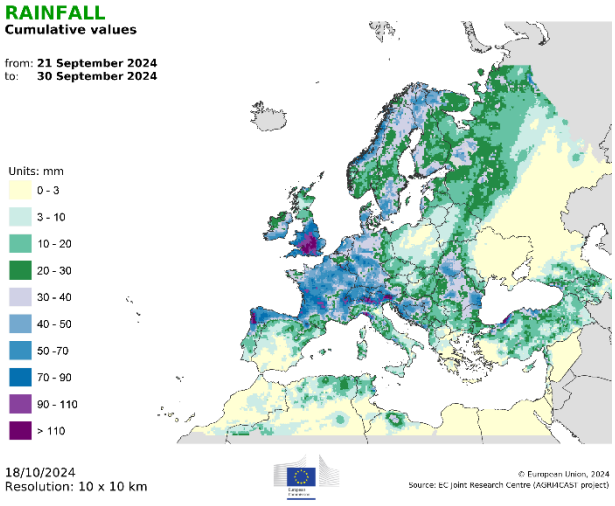


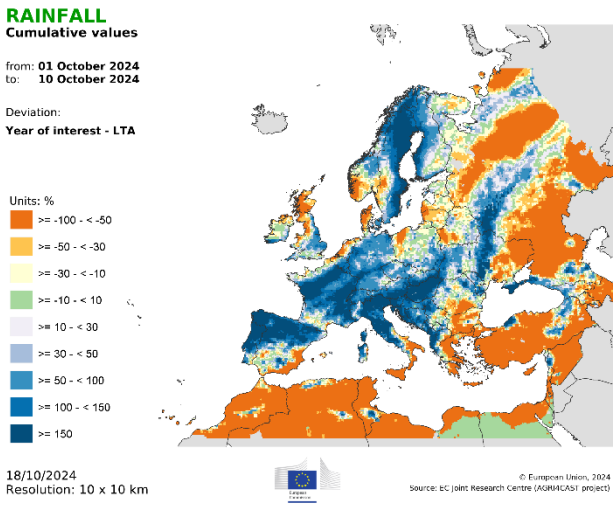


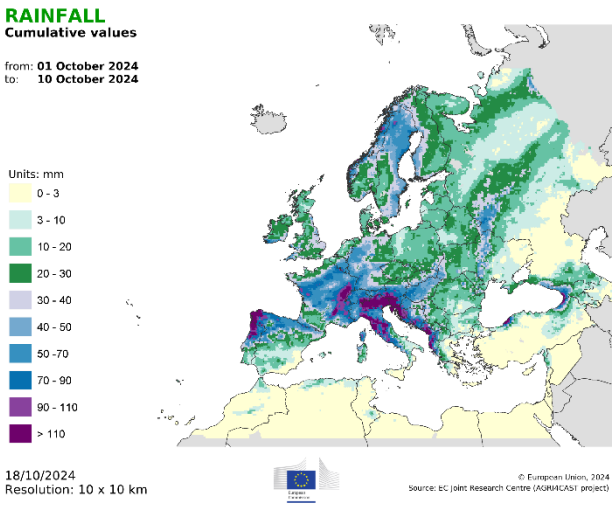


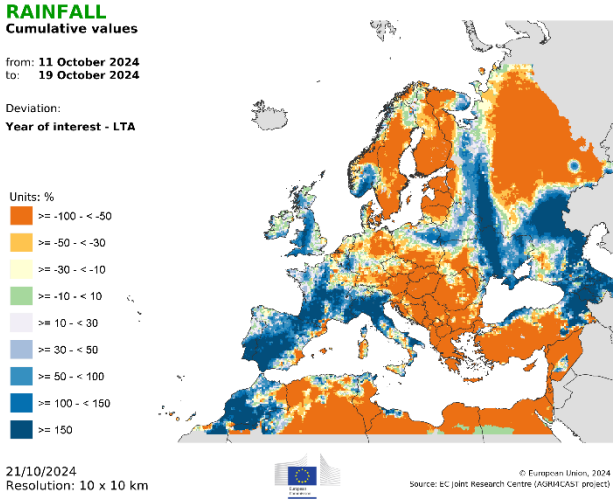


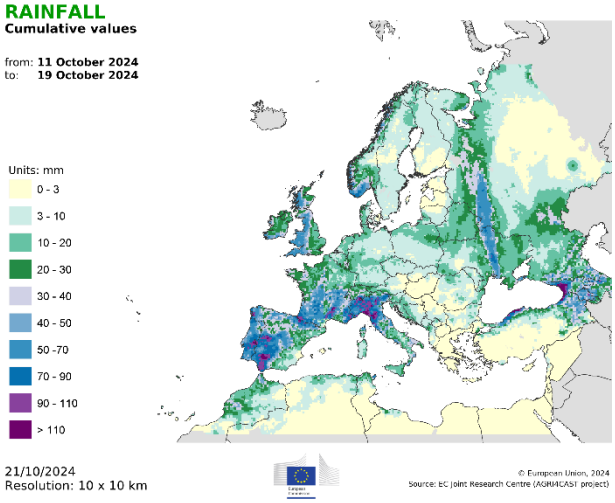




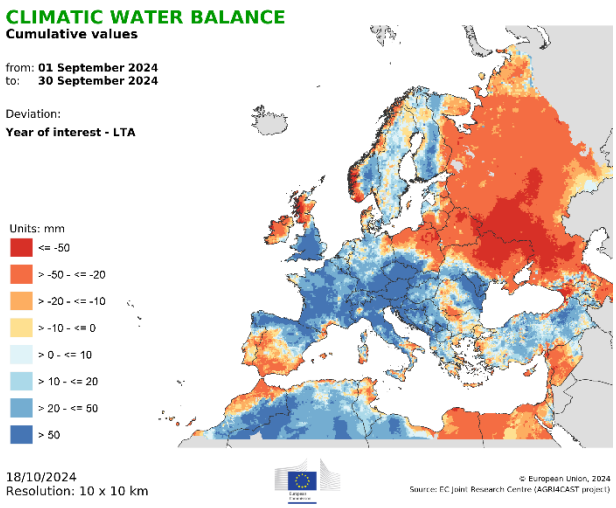


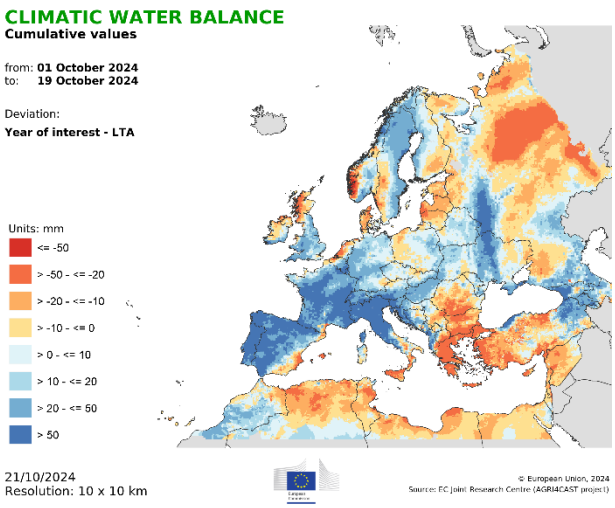




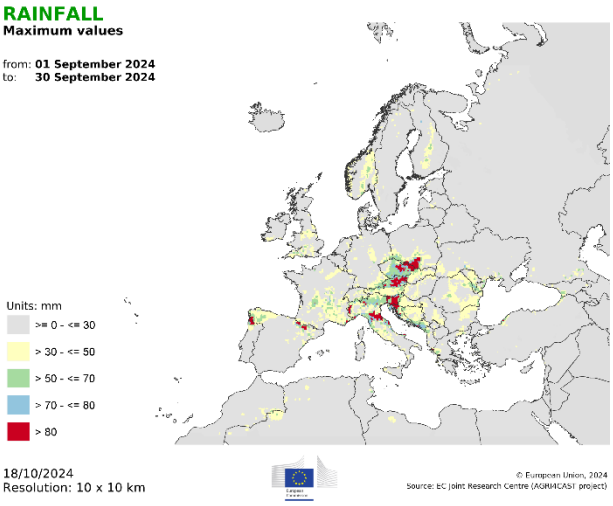


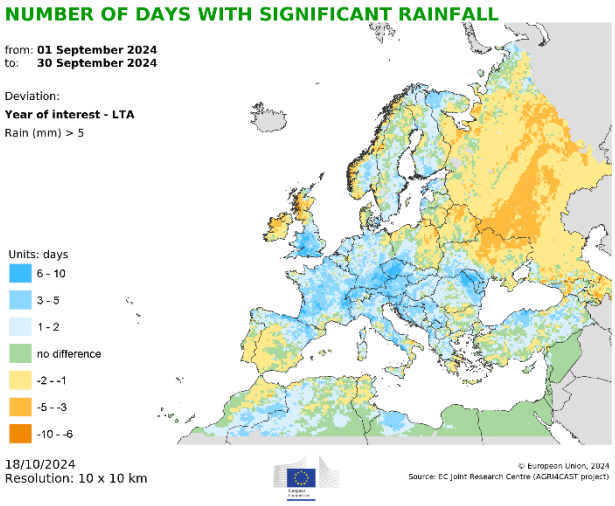
Climatic water balance

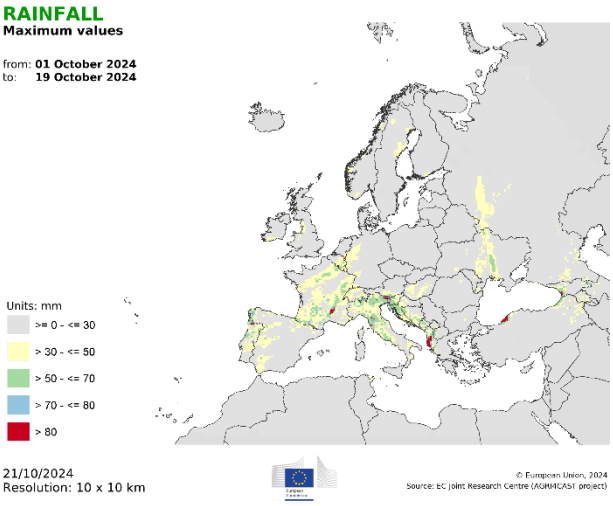


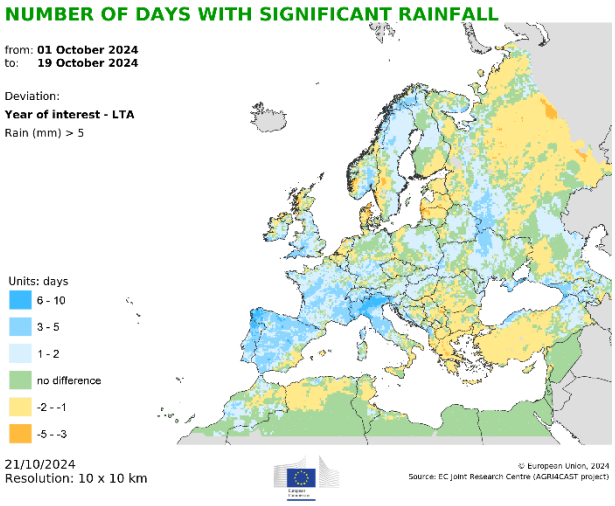


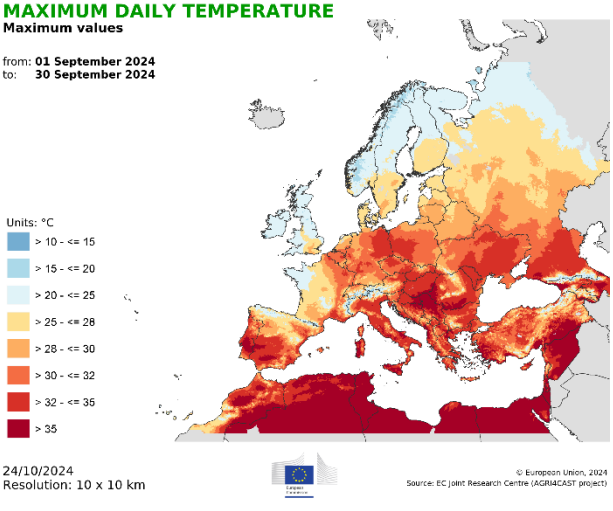
Weather events

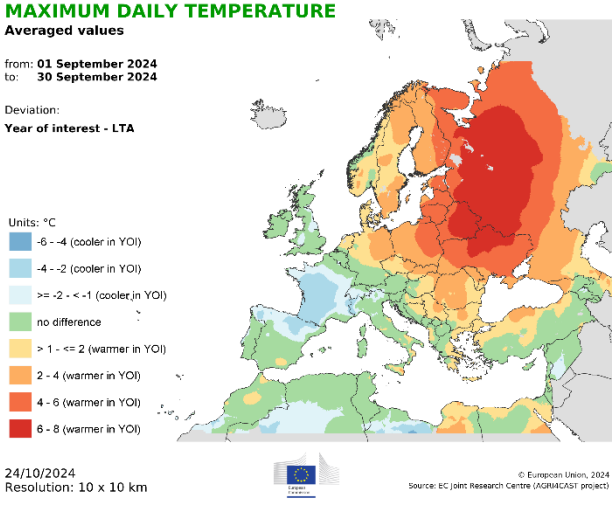








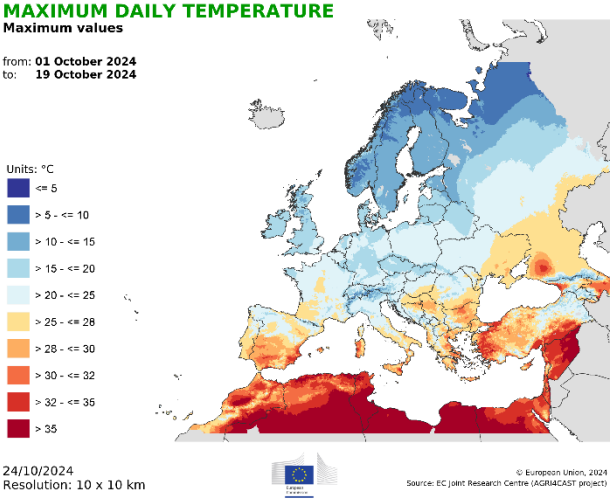




MAXIMUM DAILY TEMPERATURE

Maximum values

from: **01 October 2024**
to: **19 October 2024**



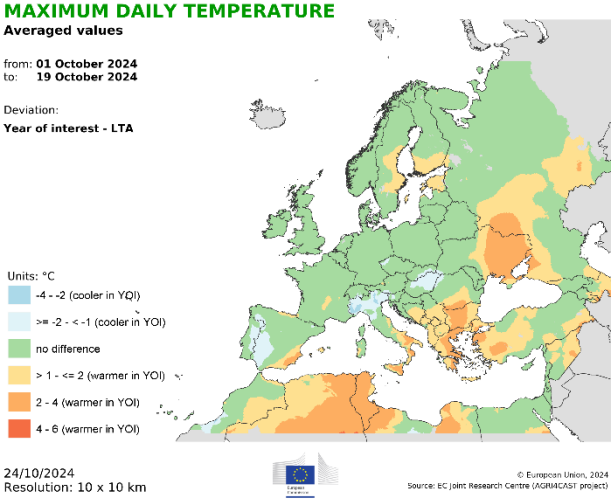
24/10/2024
Resolution: 10 x 10 km

MAXIMUM DAILY TEMPERATURE

Averaged values

from: **01 October 2024**
to: **19 October 2024**

Deviation:
Year of interest - LTA

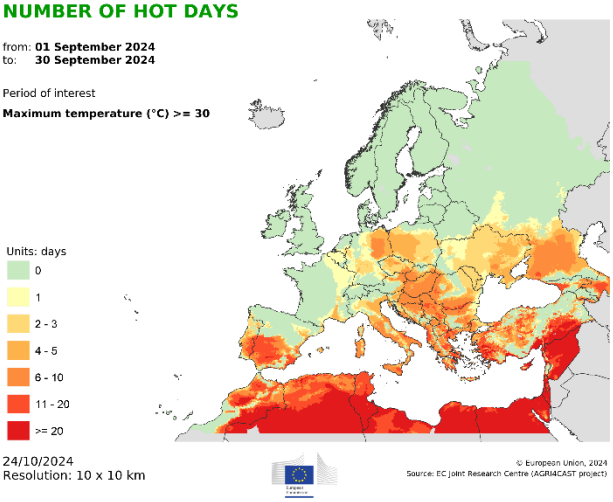


24/10/2024
Resolution: 10 x 10 km

NUMBER OF HOT DAYS

from: **01 September 2024**
to: **30 September 2024**

Period of interest
Maximum temperature (°C) >= 30

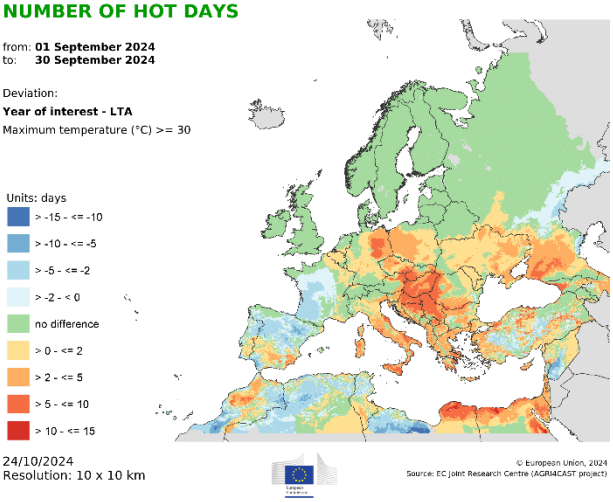


24/10/2024
Resolution: 10 x 10 km

NUMBER OF HOT DAYS

from: **01 September 2024**
to: **30 September 2024**

Deviation:
Year of interest - LTA
Maximum temperature (°C) >= 30

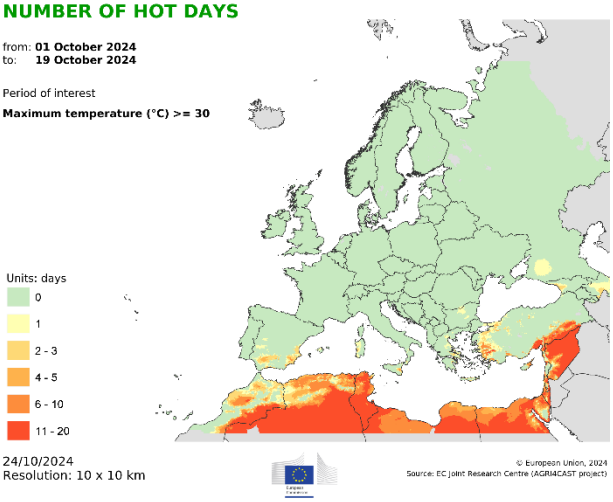


24/10/2024
Resolution: 10 x 10 km

NUMBER OF HOT DAYS

from: **01 October 2024**
to: **19 October 2024**

Period of interest
Maximum temperature (°C) >= 30

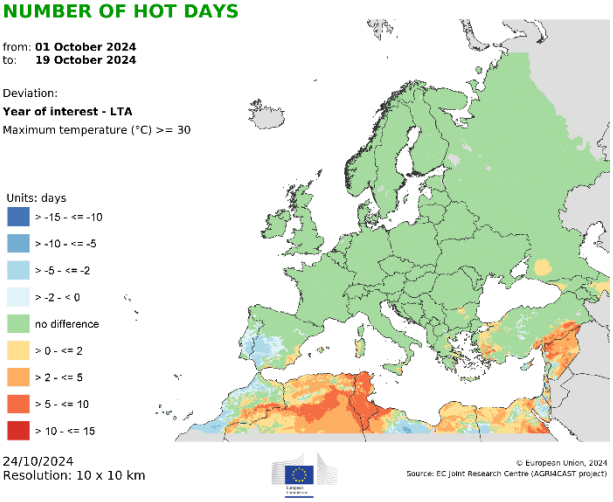


24/10/2024
Resolution: 10 x 10 km

NUMBER OF HOT DAYS

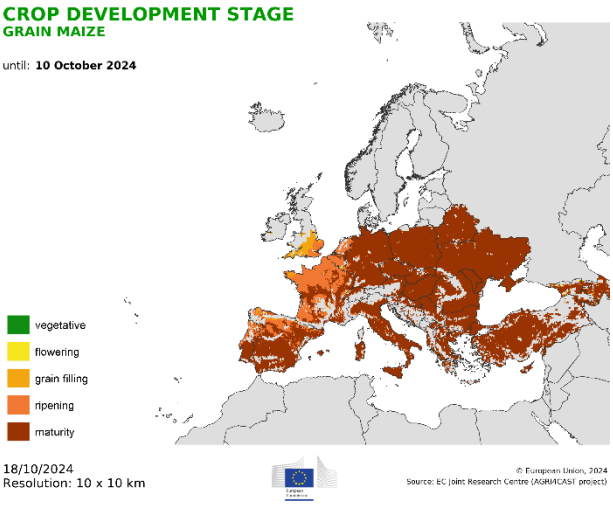
from: **01 October 2024**
to: **19 October 2024**

Deviation:
Year of interest - LTA
Maximum temperature (°C) >= 30



24/10/2024
Resolution: 10 x 10 km

Maize


CROP DEVELOPMENT STAGE
GRAIN MAIZE
until: 10 October 2024
vegetative
flowering
grain filling
ripening
maturity
18/10/2024
Resolution: 10 x 10 km
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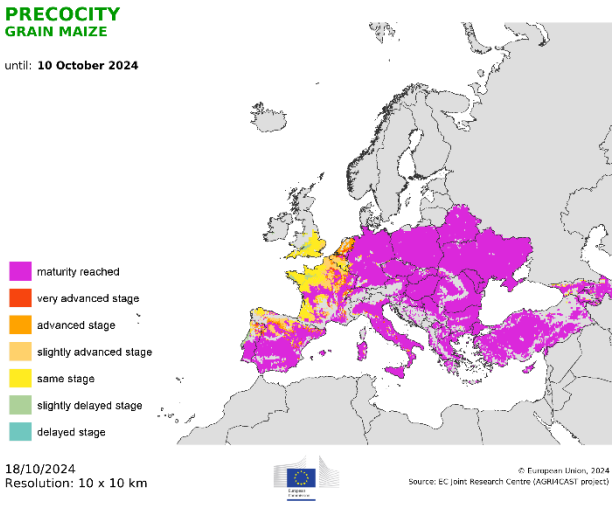
Source: EC Joint Research Centre (AGRI4CAST project)


PRECOCITY
GRAIN MAIZE
until: 10 October 2024
maturity reached
very advanced stage
advanced stage
slightly advanced stage
same stage
slightly delayed stage
delayed stage
18/10/2024
Resolution: 10 x 10 km
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Source: EC Joint Research Centre (AGRI4CAST project)

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:10.2760/752775 KJ-AW-24-010-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., Seguini, L., Tarnavsky, E., Todoroff, P., van den Berg, M., Zucchini, A.

Reporting support

Prepress Projects, I. Biavetti

Edition

Van den Berg, M., Niemeyer, S.

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.

Publications Office of the European Union