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Joint Research Centre
Limited impacts of heatwaves on winter cereals

Mixed outlook for summer crops

The overall yield outlook for cereals in the EU level slightly decreased due to the impact of the June heatwaves that affected large parts of Europe resulting in limited drought-resistant varieties for soft wheat, spring barley, rice, and millet. Forecasts for grain maize and sugarbeets were revised upwards due to the favourable conditions in southeastern and southeastern Europe continuing.

Most parts of Europe were affected by an unusually early and intense heatwave during June 2019 as a consequence, grain filling of winter and spring crops was accelerated and afflicted negatively, especially in Spain, France, Luxembourg, Germany, Poland, Czechia, and Slovakia, although the growing season is meeting to withstand these negative effects. Recent drenching in Lithuania and Latvia, however, alleviated the stress.

The positive outlook for summer crops in southeastern Europe contrasts with the antecedent conditions found in large parts of Austria, Germany, Czechia, the Benelux countries, and France. Soil moisture levels in these regions are low and the risk in temperature and absence of rain forecast for the coming days will aggravate the challenge.

Credit:
1. Agrometeorological centers
2. Services, national, intersectoral, and sectoral conditions
3. Earth observation
4. Crop yield analysis
5. Crop yield forecasts
6. Gaps

Cover: the period from 1 June until 30 July

JRC MARS Bulletin
- July 2019 –

Update on pasture conditions

JRC - MARS4CAST, 26 July 2019
In the July issue of the Bulletin we noted around average pasture conditions in most of Europe, and above-average productivity considering the period from 1 May to 10 July.

fAPAR profiles suggested limited impact of the June heatwave(s) but emerging effects of persistent rain deficits in parts of France, northern Germany and Poland.
• More recent data (up to 20 July), and considering the period since the beginning of June, reveal an expansion and intensification of the areas negatively affected.

• Comparing the situation for this 50-day period (this slide) with the last 20 days only (next slide)....
... reveals a continued expansion of rapidly deteriorating pasture conditions in northern central and western Europe.

• This is further illustrated by the fAPAR profiles in the following slides.

• In several parts of these regions, the fAPAR trend is rapidly declining even though the overall conditions still appear positive (e.g. Aisne).

• Please note that the map and fAPAR profiles refer to observations until 20 July. Effects of the heatwave that started after this date are not yet taken into account.
Relative index of pasture productivity

Period of analysis: 1 July - 20 July 2019
Index based on MetOP-AVHRR fAPAR 10-day product. Historical archive (MTA) from 2007 to 2018

- > 1.5 (close to historical maximum)
- 0.5 to 1.5
- -0.5 to 0.5 (close to LTA)
- -1.5 to -0.5
- < -1.5 (close to historical minimum)
- Gray regions with non-significant pasture area

Jerichower Land (DE)

fAPARs metop of pasture forage grassland

Ustecky Kraj (CZ)

fAPARs metop of pasture forage grassland

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Source: Joint Research Centre
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Regions with non-significant pasture area

Aisne (FR)

fAPARs metop of pasture forage grassland

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Source: Joint Research Centre

Auvergne (FR)

fAPARs metop of pasture forage grassland

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Source: Joint Research Centre
The pasture productivity index (PPI) is a relative indicator of biomass formation based on the sum of the fAPAR remote sensing product over pasture areas at administrative level over a period of interest.

fAPAR refers to the “fraction absorbed photosynthetically active radiation” (from 400 to 700 nanometers), to be used by the vegetation for photosynthesis.

PPI values above +2 and below -2 indicate that biomass production in the current season is close to, respectively, the historical maximum and minimum since the beginning of the time series (2007).

For the MARS Bulletin, the PPI is calculated at NUTS 3 level. For this calculation, we only consider grasslands and fodder crops areas, as indicated in the CAPRI-DYNASPAT database.
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