AGROMETEOROLOGY IN CROATIA

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Meteorological and Hydrological Service

Training course on the use of satellite products for drought monitoring and agricultural meteorology applications, Budapest, 24-28 April 2017
Adriatic sea-synopsis:
A low over the Gulf of Genoa is deepening and it is expected to shift gradually toward the Adriatic.

Events
International scientific congress
11th EUMETNET Data Management Workshop
Placing climate data to social service: From observations to archives
18-20 October 2017, Zagreb (Croatia)

7-day forecast:

<table>
<thead>
<tr>
<th>Date</th>
<th>Min</th>
<th>Max</th>
<th>Wind</th>
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<tbody>
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<td>27.04.2017</td>
<td>15</td>
<td>19</td>
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<td>28.04.2017</td>
<td>13</td>
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<td>10</td>
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<tr>
<td>01.05.2017</td>
<td>7</td>
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66 years of agrometeorology in Croatia

Meteorological Research and Development Division
- Modelling Dept.
- Climatol. Dept.
- Agrometeo. Dept.

Weather and Climate Observation Division
- Data Controlling Dept.
- Observation Dept.

- 5 meteorologists
- 1 agronomist
- 1 meteo-technician

- 1 phenologist
- 1 meteo-technician
- 60 pheno-stations
- 60 stations with soil temperature
Main tasks in the Agrometeorological Department

- **Scientific research**: agrometeorological, phenological and wildfire research

  **International project - EUMETNET PEP 725**: “The pan European phenological database”

- **Operational tasks**: agrometeorological forecast (agricultural journals, TV and radio), agrometeorological bulletin (website), annual analysis of fire season, reports of actual extreme weather events that caused different damage on agricultural crops, vineyards, orchards, olive orchards...

- **Popularization of agrometeorology** through Croatian Agrometeorology Society and cooperation with agronomists, foresters and firefighters
Agrometeorological forecast

- Radio, agricultural journal since 1990
- TV since 2004
- SMS to bank clients (2008-2010)

http://www.hrt.hr/enz/regionalni-dnevnik/381284/

U kontinentalnim predelima očekuje se pretežno oblačno vrijeme uz moguću malu do umjerenu količinu kiše u prvoj polovici razdoblja. Moguć je pad temperature zraka ispod 0°C na visini 5 cm od tla, posebice u prvoj polovici razdoblja. Maksimalne vrijednosti temperature zraka ugravacama od 15°C do 20°C. Minimalne vrijednosti temperature zraka u gravacama od 8°C do 3°C, u gorju od 4°C do 0°C. Duž Jadranca se očekuje pretežno oblačno uz moguću malu količinu kiše u prvoj polovici razdoblja. Minimalne vrijednosti temperature zraka od 13°C do 18°C. Minimalne vrijednosti duž jadranske obale od 8°C do 12°C, a na otočima od 9°C do 14°C. Temperature sume u većem dijelu zemlje osjetno ispod višegodišnjeg prosjeka za ovo doba godine. Očekuju se relativno nepovoljni vrijednosti za obavljanje radova na otvorenom zbog kiše, posebice u prvoj polovici razdoblja. Prognozirano 24.04.2017
Agrometeorological prognostic material

ECMWF 9 days ahead
Agrometeorological prognostic material

Soil temperature and verification of it

Insolation

Sunshine duration

Evaporation
Agrometeorological prognostic material

What to use?
Scientific research

- Wildfire research (presented yesterday)
  - improving with remote sensing

- Crop weather modeling
  - before: DSSAT model
  - now: AQUACROP model

- Plan – using crop weather models for maize and cereals:
  - impact of climate changes on agricultural production using the climate change scenarios
  - prediction of irrigation, agricultural water stress, phenological phases, biomass and yield using monthly and seasonal forecasts

- Phenological research
  - phenological phases are good indicators of climatic changes (linear trends -> GDD of wild plants and agricultural crops)
Little School "The fire is not a joke"

In the frame of Little School a short animated film by Croatian agrometeorological society under the heading: "The fire is not a joke" was presented to the second grade students of Elementary School Vladimir Gorton in Rijeka. The goal of this educational "cartoon" was of course, to awake
Needs and plans

- Lack of human resources. It is difficult to execute projects without prior realistic manpower
- Training of young scientists and PhD study
- Modernization of network of agrometeorological measurements
- Using remote sensing in forecast and analysis of different weather situations
- Crop database