

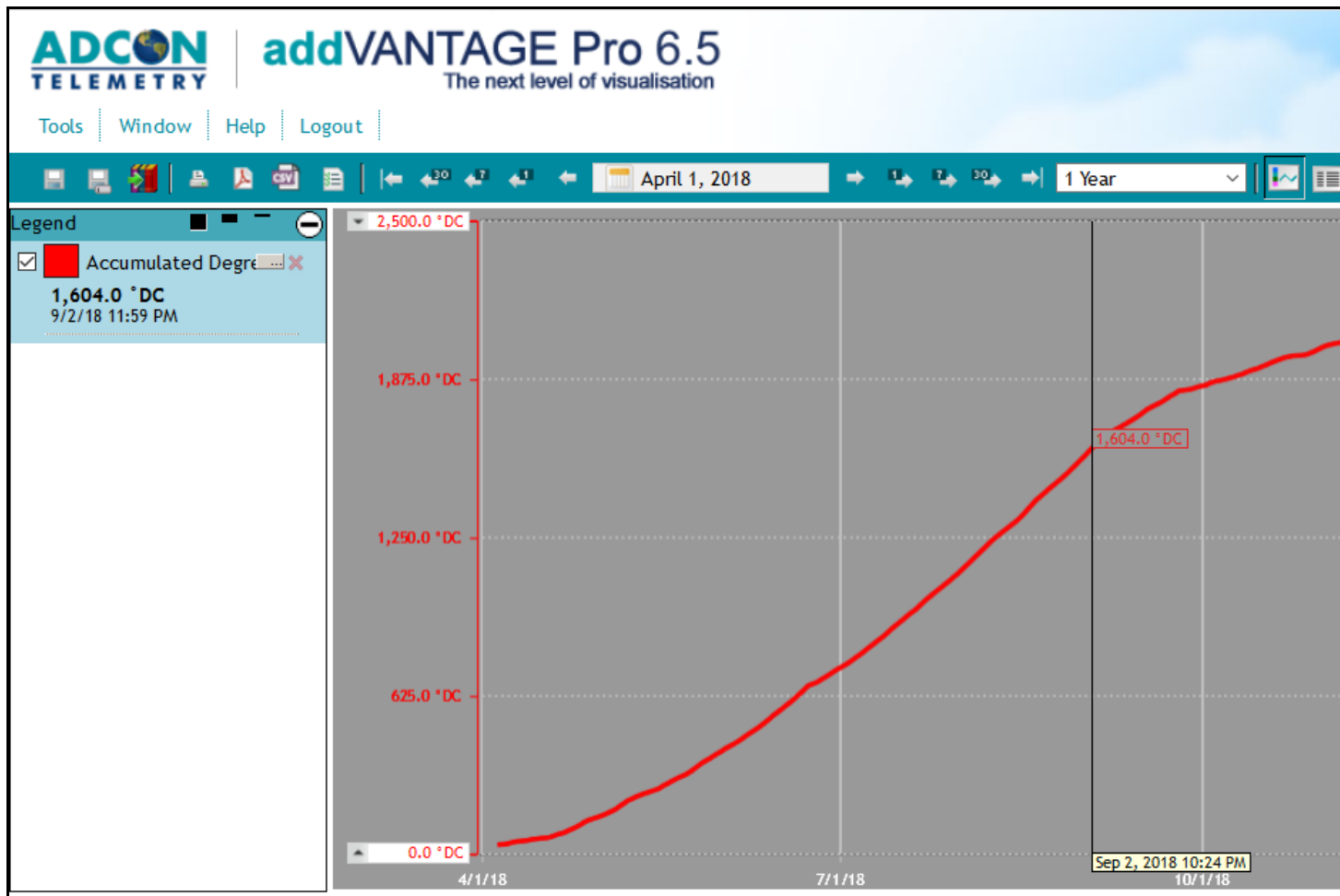
**WINEGROWING SEASON 2018,  
as it was "seen" by the  
BEIA-ADCON AGRO MONITORING  
SYSTEM**

A Beia-Adcon agro monitoring station can be seen in the photo here-right. On the mast, from top to down: Remote telemetry unit (RTU) A753 GPRS, rain gauge, wind speed sensor, the solar panel powering both the RTU and all sensors, total solar radiation sensor (pyranometer), combined air relative humidity and air temperature sensor, leaf wetness sensor.

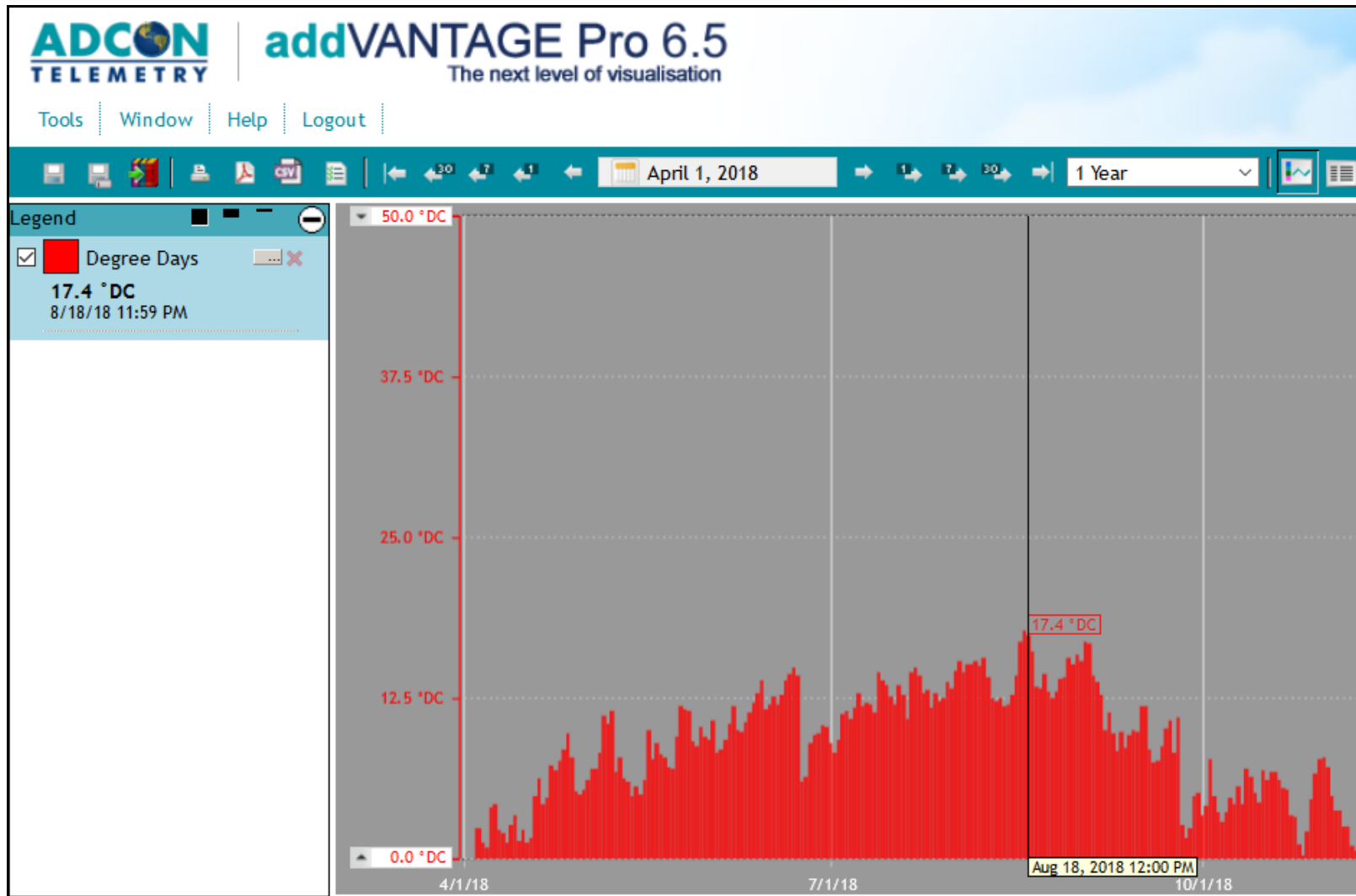


What follows is a survey of the winegrowing season 2018, as it was "seen" by the Adcon addVANTAGE Pro 6.5 server, based on the data received from an Adcon Telemetry station similar to the one featured above. Station has functioned in the middle of a Cabernet Sauvignon vine belonging to **Crama Histria**, the winegrower and winemaker at Cogealac – Romania (Constantza county). Station installation, data transmission to the server, 24/24 server functioning and permanent technical assistance were provided by **BEIA Consult International Bucharest**, the authorized distributor in Romania for all **Adcon Telemetry** hard- and software products.

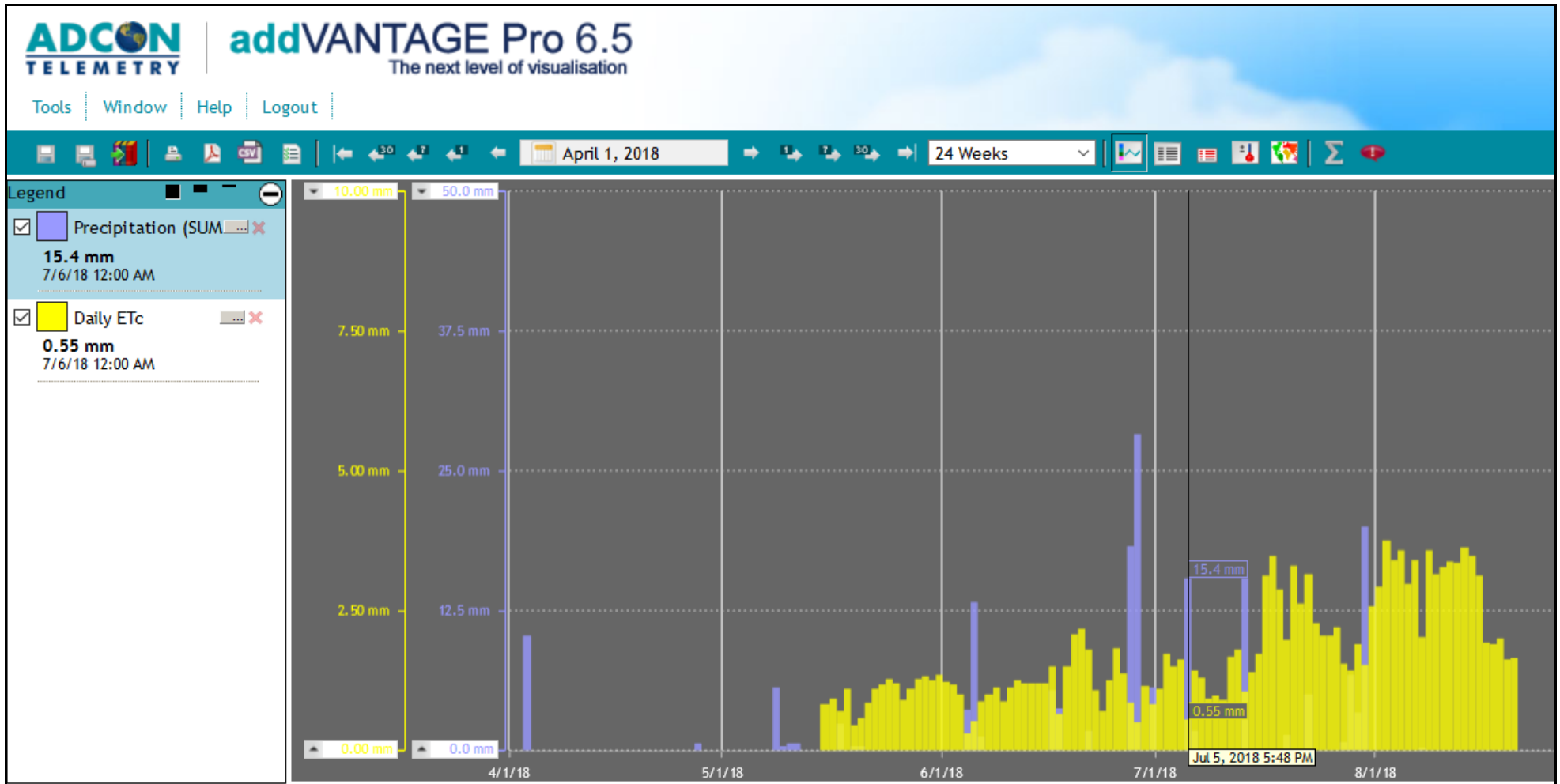
Learn more about Beia-Adcon telemetry applications at [www.beia-telemetrie.ro](http://www.beia-telemetrie.ro), more about Adcon Telemetry products at [www.adcon.com](http://www.adcon.com) and more about Crama Histria at [www.cramahistria.ro](http://www.cramahistria.ro).



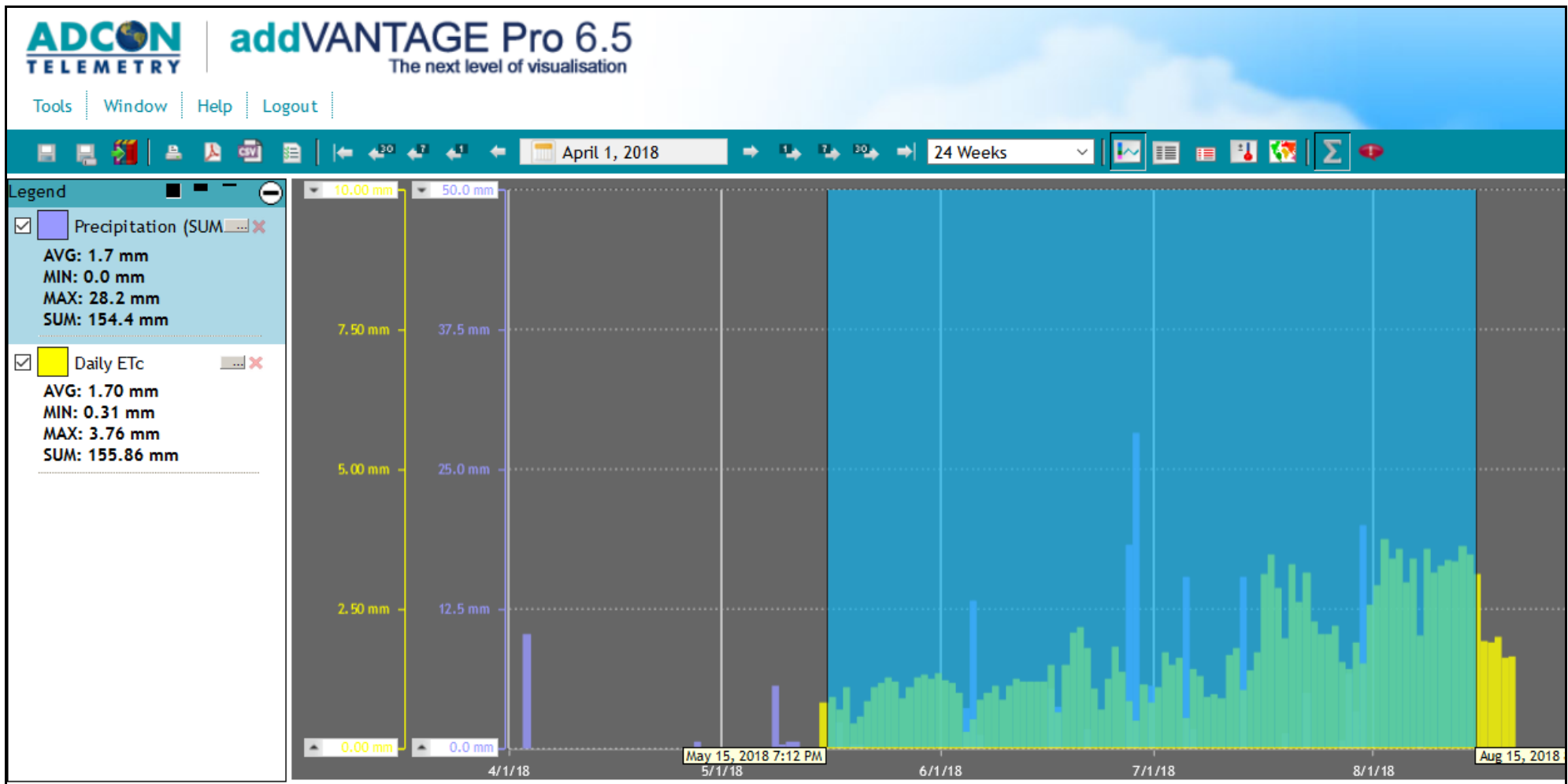
The **accumulated quantity of heat** received by the culture was measured by the system in accumulated degree-days Celsius (DC), taking into calculation what has exceeded + 10° C and a value of + 35° C only for temperatures exceeding this upper limit. Accumulated 1,600 DC, considered as necessary for Cabernet Sauvignon full maturation, were reached at 02.09.2018. This is considerably earlier than during the 2017 season, when 1,600 DC were reached as late as 18.09.2017.











The **quantity of heat received daily by the culture** was also permanently registered. The hottest day was 18.08.2018, when 17.4 DC were registered.



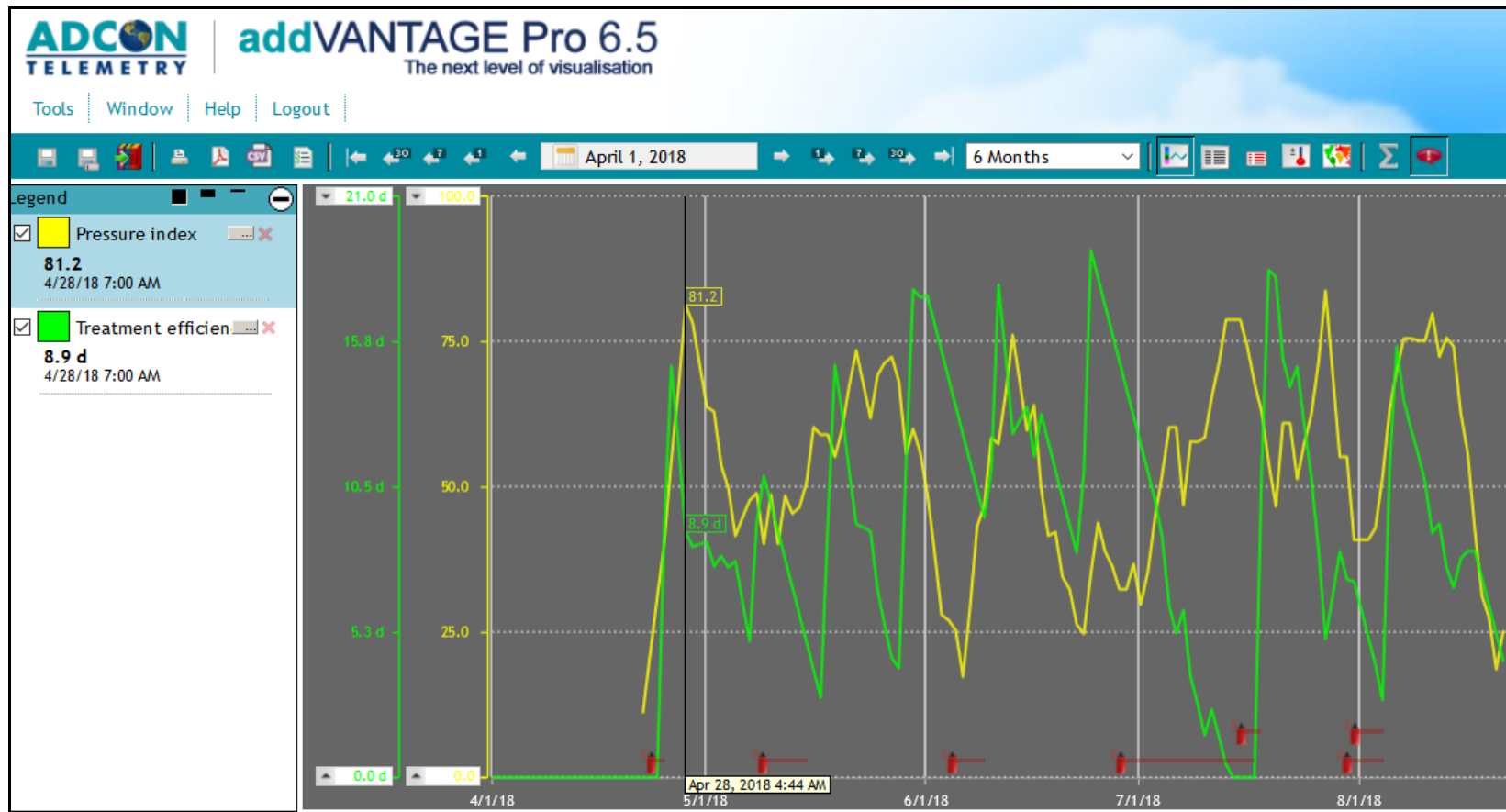
The quantity of precipitations fallen each day at Crama Histria is represented in the above diagram by a blue vertical bar, while the culture's daily water need (Specific Evapotranspiration ETC) is represented by an yellow bar. During the whole day of 05.07.2018, for instance, total precipitations have amounted to 15.4 mm, while the culture's water need was of 0.55 mm only.



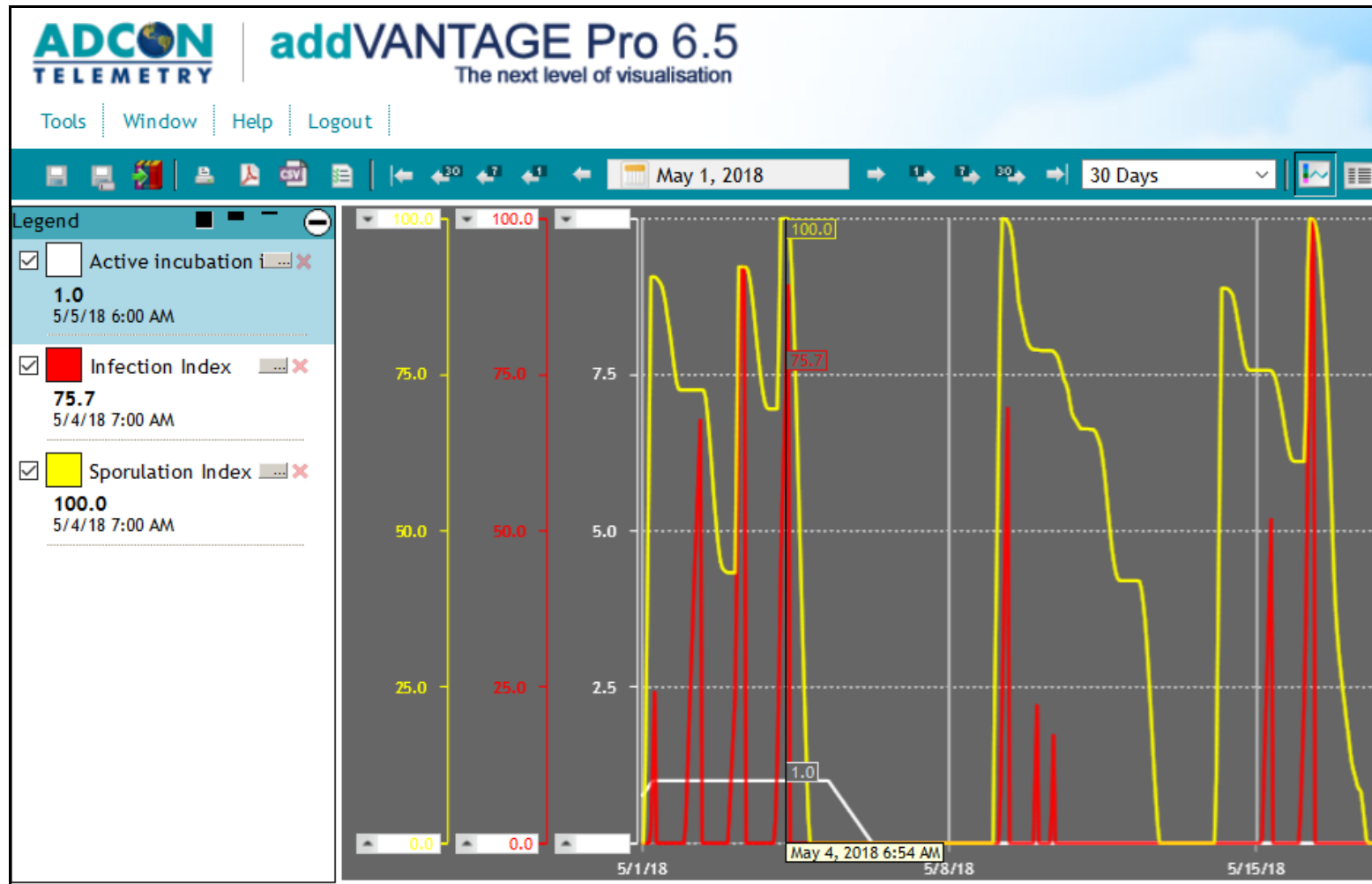
Contrary to the daily unbalance previously presented, the **total quantity of precipitations along 3 very important season months** (15.05-15.08.2018) has happily matched the culture's total water need along the same time interval. While precipitations have amounted to 154,4 mm, the culture's total water need was of 155,86 mm. It was a very good balance, contributing to a crop that was remarkable through both quantity and quality.

General	Crop	Treatments	Irrigation	Action	Security
BBCH	Name	Date			
00	Winter Dormancy	Jan 1, 2018			
07	Bud Burst	Apr 21, 2018			
13	3 Leaves Unfolded	May 4, 2018			
55	Inflorescence Swelling	May 25, 2018			
65	Full Flowering	Jun 3, 2018			
69	End of Flowering	Jun 12, 2018			
81	Beginning of Ripening	Jul 26, 2018			
89	Berries Ripe for Harvest	Aug 21, 2018			

Based on data gathered during previous seasons, a preliminary estimation of the time of occurrence of various culture development phases was made. Actual weather evolution during 2018 has however led to some adjustments, so that the final **culture development calendar** that the system has worked with was the one featured in the table above.



During 2018, **Powdery Mildew** has again represented a serious threat to the crop health (see above, colored in yellow, the evolution of the pressure index of this disease). The grower has answered to this threat with treatments appreciated as necessary by himself, but also with treatments that were recommended by the Beia-Adcon system. An example of the second kind is the one marked at 23.04.2018 on the diagram above by a small red spraying pump. It is due to this treatment that the peak of powdery mildew pressure appeared at 28.04.2018, and evaluated by the system at 81.2 units of 100 possible, has found the culture protected by a treatment appreciated as efficient for the following nearly 9 days (8.9 days).



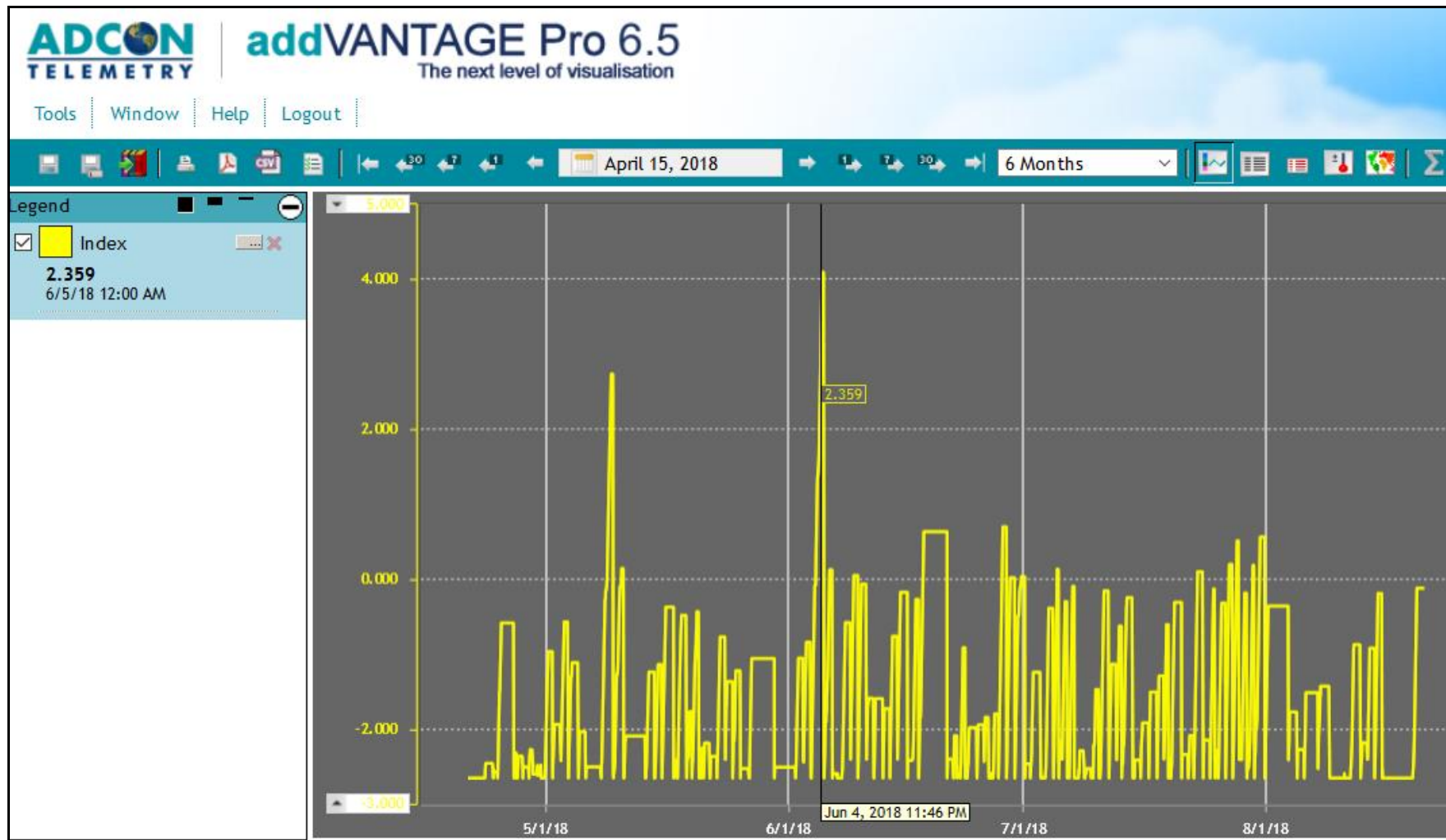
The **Downy Mildew** threat was also strictly followed through 3 distinct indexes: active incubation, infection and sporulation index. Evolution diagrams of these indexes (complicated enough and hard to understand, see above) were for the grower merely informative. It was the Beia-Adcon system that has continuously followed these evolutions using the Kast model and has issued the treatment recommendations contained in the event list on next page.



#	Begin Date ▲	Duration ↕	Source ↕	Area ↕	Con
<input checked="" type="checkbox"/>	Apr 23, 2018 7:00:00 AM	2d	Fainare (Powdery Mildew ...	Viticola SA Cogealac	Treatment recommended
<input checked="" type="checkbox"/>	May 8, 2018 10:00:00 PM	6d 12h	Putregai (Bunch Rot - Bro...	Viticola SA Cogealac	Treatment recommended
<input checked="" type="checkbox"/>	Jun 4, 2018 2:00:00 PM	4d 20h	Putregai (Bunch Rot - Bro...	Viticola SA Cogealac	Treatment recommended
<input checked="" type="checkbox"/>	Jun 28, 2018 9:00:00 AM	19d	Putregai (Bunch Rot - Bro...	Viticola SA Cogealac	Treatment recommended
<input checked="" type="checkbox"/>	Jul 5, 2018 12:00:00 AM		Mana (Downy Mildew - Ka...	Viticola SA Cogealac	Treatment recommended for sensitive cultivars
<input checked="" type="checkbox"/>	Jul 15, 2018 7:00:00 AM	3d	Fainare (Powdery Mildew ...	Viticola SA Cogealac	Treatment recommended
<input checked="" type="checkbox"/>	Jul 30, 2018 3:00:00 AM	5d 9h	Mana (Downy Mildew - Ka...	Viticola SA Cogealac	Treatment recommended
<input checked="" type="checkbox"/>	Jul 31, 2018 6:30:00 AM	4d 5h 30m	Putregai (Bunch Rot - Bro...	Viticola SA Cogealac	Treatment recommended

For each of the monitored diseases (Powdery Mildew, Downy Mildew and Grape Bunch Rot) as well as for other monitored parameters, the system has continuously kept update **event lists** like the one above. The system has issued for Downy Mildew two treatment recommendations dated 05.07 and 30.07.2018. For all treatment recommendations, at the moments indicated at "Begin Date", the system has also sent **e-mail alerts** towards e-mail addresses contained in a predefined list.

In brief, treatment recommendations issued by the Beia-Adcon system have helped the grower at Crama Histria to protect his crop against meteorological conditioned diseases. At the same time, they have helped the grower to sustainably utilize pesticides, as strongly recommended by the EU 2009/128/EC Directive.



**Grape Bunch Rot** threat was at Crama Histria during the 2018 season high enough again. The pressure index of this disease has exceeded the alert limit set by Broome at + 0.50 during four distinct time intervals along the season, highest values being registered at 04.06 and 05.06.2018.

## **Conclusion and Invitation**

Only very few was shown above of what an Beia-Adcon addVANTAGE Pro server continuously running can offer when provided with accurate data by an Beia-Adcon agro monitoring station installed in a wine-growing area.

Besides Wine and Table Grapes, disease management can be as well performed for Apple, Pear, Plum, Potato, Sunflower, Wheat, Oilseed and other such crops.

And besides Degree-days, Evapotranspiration and Chill/Heat hours, Beia-Adcon agro-meteo software extensions can also calculate Dew point, Wet bulb temperature, Sunshine duration, Soil moisture, Mathematical Formulas and many others.

**These are only a few of the many reasons to again kindly invite our distinguished readers to learn more about Adcon Telemetry at [www.adcon.com](http://www.adcon.com) and more about Adcon applications in Romania at [www.beia-telemetrie.ro](http://www.beia-telemetrie.ro)**

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