PhenObserve

How efficient monitoring can improve the assessment of the severity and extent of damages due to weather events.

PhenObserve optimizes damage forecasts and assessments by combining Copernicus Sentinel satellite imagery and phenological ground-truth data acquired through the Pan European Phenology Database (PEP725). The project consortium will implement innovative fusion techniques such that the affected regions are delineated faster and in more detail than ever before.

Why?

Increased agricultural damage

During the last years, climate events have led to serious damages in Austria's agriculture, for example:

- In 2015 Austrian corn harvests were about 22 % less than average due to severe summer droughts.
- In 2016 frost damage to fruit trees and vineyards in Styria was equivalent to 200 Mio Euros.

Current methodologies need to be improved

Currently, damage quantification is based on rough estimations from farmers, generalized calculations based on statistical figures on community basis or terrestrial/drone (UAV) surveys.

Additionally, these ground data sets lack in availability, accessibility, quantity and quality.

Full potential of remote sensing data is not yet reached

PhenObserve will build the scientific basis to fully understand the potential of Sentinel-2 and Sentinel-3 satellite data for the next generation of phenological indicators.

The integration of ground phenology (GP) and land surface phenology (LSP) will increase accuracy and reduce manual survey costs.

How?

By providing daily phenological data at a high spatial resolution through a powerful platform.

Daily

Because a higher frequency of images means obtaining more data from phenological phases where fruit trees are the most vulnerable (bud swelling phase – bud break phase).

High spatial resolution

Because it means a better distinction of small fields, which is very suitable and necessary for Austrian – but generally central European – field sizes.

Phenological data

We use ground phenology data (PEP725) and novel hybrid satellite data products based on Sentinel-2 & Sentinel-3.

Platform

Information products are generated and provided through our powerful cloud computing infrastructure. In this way, the user has direct, reliable and continuous access to most recent information

Use Cases

Damage of corn production due to hail, storm or drought

Late frost damage on fruit plants

The team

The Vision

Are you a land owner who needs fast and accurate information about your crop status to monitor and forecast possible weather damages?
Are you an insurance company who needs timely and reliable data to make proper damage estimations? Are you interested? **Let's talk!**