

PLANT PROTECTION

Integrated Pest Management
Plant Protection | Monitoring | Disease Prediction
Decision Support | Agriculture Weather
Frost Warning | Degree Days | Software | Hardware

Integrated Pest Management

— a world wide issue —

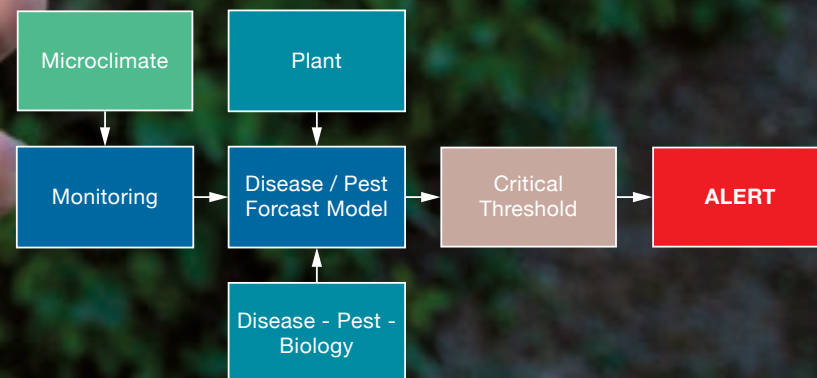
Integrated Pest Management (IPM) aims to combat pests in agriculture in such a way that they have the least impact on the environment and the health of animals and humans. This is achieved by a combination of different techniques. Integrated Pest Management regulations and principles prescribe the use of monitoring systems, decision support systems and forecast systems. By knowing the timepoint of the onset of a pest or a disease, the user can make a timely decision regarding the phytosanitary measures to be taken. This in turn helps to make the use of pesticides more precise and economical. A more precise use of pesticides also results in a reduction of existing resistances and helps to prevent future resistances.



Decision Support System

— the operating principle —

In an agricultural context a Decision Support System (DSS) is an interactive software system that collects and processes a variety of inputs (raw data, eg. from farm-deployed sensors, chemical data, crop data, pathogen data) in order to present to the farm manager a solution to an arising problem, such as disease pressure, frost or the need to irrigate.

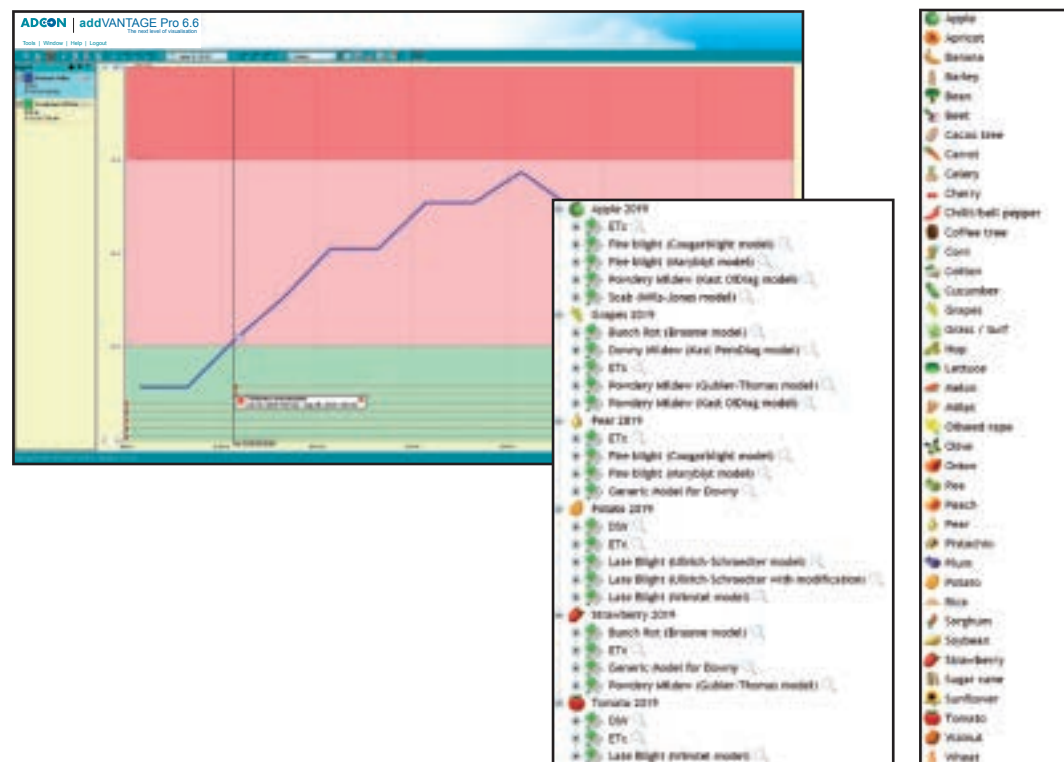


Remote Data Collection

Remote Data Collection in field with a resolution from one minute to several hours can be achieved with the dataloggers. Each datalogger has an autonomous power supply, with long term durability of the batteries and recharged by solar panels as small as an A5 paper format. This is achieved by an ultra-low power consumption profile of the system in combination with the ADCON sensors. The data is transmitted to the the ADCON A850 Telemetry Gateway either via ADCON's radio (UHF) protocol or via mobile data services like 2G, 3G and 4G.

Always a Plan B - if a radio datalogger is outside the range of the gateway due to topography or meteorological conditions, the data is simply redirected via relay function to another station and from there passed on to the gateway. So, you always get your data safely!

The data is securely stored at the gateway. From the gateway, addVANTAGE Pro, ADCON's universal data visualization, processing and distribution platform, updates data on a fully customizable basis to store it in the database. In addVANTAGE Pro data can be processed in many ways, it offers a wide range of operations and calculations. Viewing the results is simple, all you need is either a smartphone, tablet, PC or notebook with a common web-browser.



Temperature + Relative Humidity

— combo sensor —

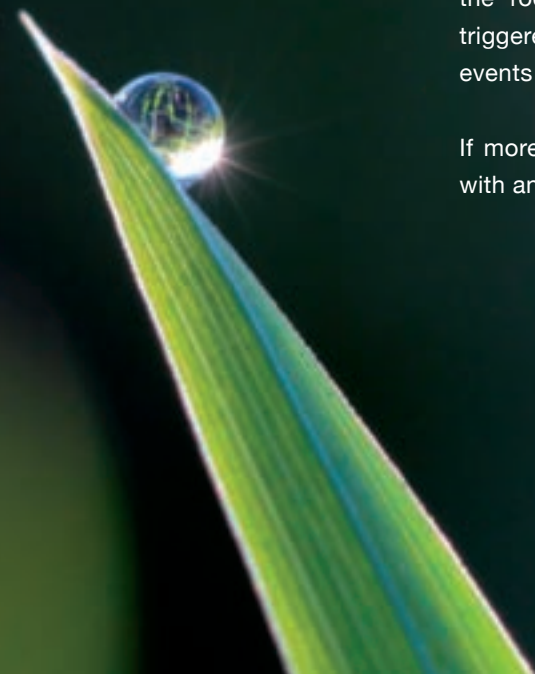
From all environmental parameters, temperature and moisture are the two most important ones for the onset and development of plant diseases. It is important to note that the measuring sensor is housed in a naturally vented radiation shield. For the collection of the meteorological data, ADCON's TR1 and TR2 combo sensors perfectly meet the requirements for agricultural applications to measure air temperature and relative humidity. The sensor technology is housed in a cast housing and has its own coating to meet the on-site conditions.



Precipitation

The ADCON RG-1 has a catchment area of 200 cm² and a state-of-the-art resolution of 0.2 mm. The precipitation is measured by a rocker. The weight of the precipitation pushes the rocker downwards, which triggers an impulse. Each triggered impulse counts 0.2 mm precipitation. Precipitation events of up to 50 mm per hour can be recorded.

If more resolution is required, ADCON offers also a version with an orifice of 400 cm² and a resolution of 0.1 mm.



Leaf Wetness

In addition to the temperature and the relative humidity, the measurement of leaf wetness and the leaf wetness duration are of greatest interest from a phytopathological point of view. The electronic leaf wetness sensor imitates the surface of a leaf as closely as possible. The WET Leaf Wetness Sensor from ADCON consists of a ceramic-coated carbon conductor plate with a net-like structure. The dielectric constant of the sensor surface is measured. The scale with which the leaf wetness is measured, generates a value on a scale from 0 to 10. The value 0 to 3 indicates a 'dry' state of the leaf surface, 4 to 10 indicates a 'wet' state of the leaf surface. Many disease models - like the Kast model for grapes, DSV, or the Winstel model for potato - require Leaf Wetness as an input.



Wind Sensors

Wind plays an important role in phytopathology. Wind can lead to favourable, but also to poor conditions for the occurrence, or spread of a disease. The ADCON Vento1 Wind Sensor Set is not only an highly accurate set of sensors, it is also extremely robust, fully made of anodized aluminum, with no plastic parts.

Both sensors, Wind Speed and Wind Direction, have a very low onset speed but can withstand wind gusts of up to 75 m/s even at extremely low temperatures.



Agricultural companies from all over the world, top winegrowers, potato producers as well as numerous institutions such as universities, research institutes and official submissions rely on our systems.

We offer the best equipment to support you sustainably and reliably in your work. With more than 100,000 systems sold worldwide, we are the leading provider of reliable environmental measurement at the highest level of quality.



OTT HydroMet GmbH
Ludwigstr. 16
87437 Kempten
Germany
www.otthydromet.com



ADCON is a brand of OTT HydroMet

OTT HydroMet GmbH
Industr. 24
3400 Klosterneuburg
Austria
www.adcon.com