

iMETOS®sm the internet weather station for disease prediction, evapotranspiration and continuous soil moisture monitoring

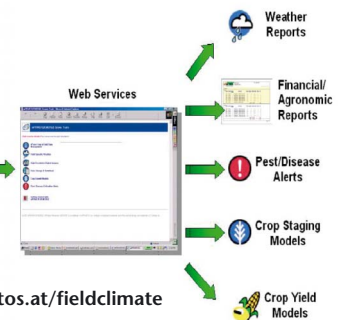


Real time data via internet for

- Irrigation management
- Soil moisture monitoring
- Disease forecasting
- Frost warning
- Work planning and logistics
- Local micro climate monitoring



Metos weather data



With iMETOS®sm all relevant agriculture weather data are measured permanently and sent to the internet climate data base every two hours.

The iMETOS® sm station is powered by rechargeable batteries and a solar panel therefore no changing or external charging of batteries. iMETOS® sm only needs a valid GPRS contract with good GSM coverage in the area and a deactivated SIM lock to be operational. iMETOS® sm reports its data every two hours to the internet climate data base of Pessl Instruments GmbH. at <http://www.metos.at/fieldclimate>. Your internet browser and your log in password to the site <http://www.metos.at/fieldclimate> will get you online to data, reports and graphs observed in your own orchards or fields. This site reserves you also an area where you can input and change the thresholds (based on phenological progress) and telephone numbers (men on duty) to be used for warnings.

Don't leave your crop unattended - iMETOS® sm will monitor day and night your field data.

iMETOS® sm is available with the following sensors and options:

SMT 50 with soil temperature: This model gives the opportunity to measure soil moisture by six watermark sensors without any additional sensors needed for this specific purpose. All corn growers know about the importance of soil temperature for the early development of corn seedlings. Soil temperature reporting gives you a better understanding about best seeding dates for susceptible corn varieties. This sensor helps you to estimate nitrogen-mineralization. Soil temperature is needed to calculate the disease models available for turf on
<http://www.metos.at/fieldclimate.html>

SMT 100 with soil temperature, temperature and relative humidity: This model is specifically designed for all potato growers interested in having Smith Periods calculated for their fields, for all interested in growing degree days, and temperature based pest models.

The temperature measured in your fields allows you to calculate degree day accumulations more accurately. An important fact is also the temperature during sunrise and sunset – available in real time on your finger tips by logging in at: <http://www.metos.at/fieldclimate.html>

SMT 150 with soil temperature, temperature, relative humidity, global radiation, rainfall:

For sites with low to moderate wind speeds, this model offers a cost effective solution way to estimate of the daily evapotranspiration rates on
<http://www.metos.at/fieldclimate.html>

SMT 200 with soil temperature, temperature, relative humidity, leaf wetness and rainfall:

This model is the preferred choice to be used for our disease forecasting models available on
<http://www.metos.at/fieldclimate.html>

SMT 250 with soil temperature, temperature, relative humidity, leaf wetness, rainfall and global radiation:

For areas with low to moderate wind speeds, this model works with most of our disease models and is a cost effective choice get a good estimate of daily evapotranspiration rates on
<http://www.metos.at/fieldclimate.html>

SMT 300 with temperature, soil temperature, relative humidity, leaf wetness, rainfall, global radiation and wind speed:

These sensors allow the most accurate calculati-

on of site specific evapotranspiration rates and run most of our disease models via log in to:
<http://www.metos.at/fieldclimate.html>

Optional watermark sensors: This very cost effective sensor was found by millions of growers worldwide for the past 20 years and using this sensor is an affordable solution for continuous soil moisture monitoring. The output of the readings is water tension, which tells us directly and exactly the available water for the crop.

Optional wet bulb temperature: For frost warning and evaporative cooling by SMS

Optional wind direction and optional barometric pressure: Sensors for all customers who want to have reports on these sensors data on
<http://www.metos.at/fieldclimate.html>

Services offered at

<http://www.metos.at/fieldclimate.html>:

View your field climate data in tables and graphs. Download these data into excel and access sheets or other spread sheets and data base programs. See your own daily evapotranspiration and calculate crop specific soil water balances in real time. Calculate your own field degree day model as well as sunrise and sunset for pest prediction in real time. Calculate growing degree days for corn seed production. See your own disease prediction model results in real time for:

o Vine grape: Downy mildew, powdery mildew, botrytis, black rot

- Apple: Scab, fire blight
- Pear: Scab, Brown spot
- Stone fruit: Monilia, Pseudomonas, Shut hole disease
- Strawberry: Powdery Mildew, Botrytis cinerea
- Cucumber: Downy mildew
- Tomato: Early blight, late blight, Botrytis cinerea
- Potato: Early blight, late blight
- Onion: Downy mildew, Botrytis squamosa
- Lettuce: Downy mildew
- Wheat: Rust, Septoria, Fusarium
- Canola, sun flower, pepper: Sclerotinia
- Soybean: Rust
- Sugar beet: Cercospora
- Turf: Pythium blight, brown patch, dollar spot, fusarium, Snow mold, overseeding



Technical data of iMETOS sm:

Dimensions without sensors: 54cm x 18 cm x 18 cm
 Weight without sensors: 1.2 kg
 Measuring interval: 5 minutes
 Logging interval: 60 minutes
 Internet contact interval: 120 minutes 6oo to 22oo
 Temperature sensor: SMT 160-30
 Temperature sensor resolution: 0.1°C
 Temperature sensor accuracy: ±0.5°C
 Relative humidity sensor: HC 103
 Relative humidity sensor resolution: 1%
 Relative humidity accuracy 25% - 90%: 3%
 Rain gauge resolution: 0.2mm
 Rain gauge max rain reporting 12 mm/min

Rain gauge accuracy: ±5%
 Leaf wetness sensor principle: Resistance inside Filter paper
 Global radiation sensor range: 0 – 2000 W/m_
 Global radiation sensor resolution: 1 W/m_
 Global radiation sensor response area: 320 nm – 1,100 nm
 Global radiation sensor accuracy: ± 5%
 Wind speed Range: 0 - 40 ms-1
 Wind speed Gust Survival: 60 ms-1
 Wind speed Anemometer Threshold: 1.4 m/s
 Wind direction Azimuth: 355°
 Wind Vane Threshold: 0.8 ms-1 (10 degree)
 Barometer Range: 0 - 1103 mbar
 Barometer accuracy: 0.5% of full span
 Watermark: 0 – 200 centibar
 Watermark accuracy: +/- 15 %