



METOS[®]
BY PESSL INSTRUMENTS

METOS[®] TSM

TAKING THE GUESSWORK OUT OF UNDERSTANDING YOUR SOIL

Soil moisture mapping is crucial for agricultural applications to ensure optimal crop growth, maintain healthy soil, conserve water and resources, reduce operational costs, and meet environmental and regulatory obligations. It allows farmers to make informed decisions regarding irrigation and soil management, ultimately improving crop yields and sustainability while minimizing the environmental impact of farming practices.

Since soil moisture can vary significantly across different areas of a field, single point measurements only provide information for specific locations, which may not represent the overall moisture conditions across the entire farm. Areal soil moisture measurements provide a more comprehensive and accurate understanding of moisture distribution across any field.

Soil Moisture

METOS TSM is a versatile and scalable tool for measuring soil moisture at various subsurface levels, which can be attached to different agricultural machinery such as tractors or utility vehicles. Its basic operating principle involves measuring soil conductivity and converting the readings into soil moisture values. The readings are scalable due to the tool's ability to measure moisture at different depths, ranging from 2 inches (5 cm) to 6 inches (15 cm), providing farmers with detailed insights into soil conditions at multiple levels.

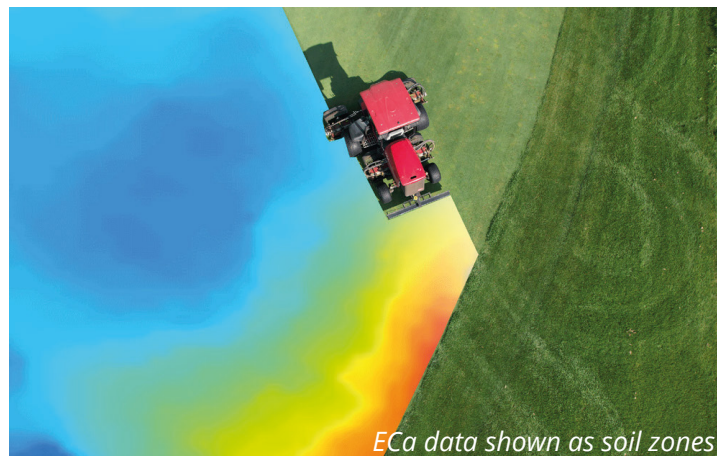


METOS TSM mounted on a mower

IT'S MAIN FEATURES ARE:

- 1 Non-Invasive:** METOS TSM is a non-invasive technique that does not require physical contact with the soil. This means it doesn't disturb crops or the soil surface, making it ideal for agricultural use where maintaining the integrity of the land and crops is paramount.
- 2 Rapid data collection:** The method enables rapid data collection over large areas. METOS TSM can be mounted on agricultural vehicles and driven across fields, collecting data quickly and efficiently. This is particularly valuable for large farms with extensive crop areas, allowing for efficient monitoring and management of soil moisture conditions.

- 3 High Spatial Resolution:** METOS TSM provides high spatial resolution data, meaning it can detect variations in soil moisture at a fine scale. This level of detail is crucial for agricultural management, as different areas of a field may have varying moisture requirements, allowing for precise and targeted irrigation and soil management practices.
- 4 Depth Profiling:** METOS TSM provides depth profiling to assess moisture conditions at different soil depths. This information is critical for understanding moisture in the root zone for various crop types and for making informed irrigation decisions that promote healthy crop growth.
- 5 Versatility in Soil Types:** METOS TSM is effective across a wide range of soil types, from sandy to clayey soils. It can adapt to the varying soil characteristics typically found in agricultural fields, whether it be heavy clay soils in some areas or high sand content in others, providing reliable moisture measurements across diverse conditions.
- 6 Quantitative Data:** METOS TSM provides quantitative data on soil moisture levels. This is valuable for farmers who need precise information to make informed irrigation decisions. It offers an objective and measurable assessment of moisture content, enabling better management of water resources and crop health.
- 7 Spatial Coverage:** With METOS TSM, large areas can be covered in a relatively short time frame, making it cost-effective for mapping soil moisture across entire fields. This extensive coverage ensures that no section of the field is overlooked, providing comprehensive insights into moisture distribution.
- 8 Historical Data Comparison:** Over time, the collected soil moisture data can be compared to identify trends and patterns. This information helps farmers make data-driven decisions and refine their irrigation strategies for improved efficiency and crop health.
- 9 Drought Management:** During drought conditions or water-use restrictions, soil moisture mapping helps farmers optimize water use by identifying areas with the greatest moisture needs. This is essential for complying with regulations and minimizing water waste, ensuring efficient resource management.



Conclusion

In summary, METOS TSM is a versatile and valuable tool for mapping soil moisture in agricultural fields due to its non-invasiveness, rapid data collection, high spatial resolution, depth profiling capabilities, adaptability to various soil types, and ability to provide precise quantitative data. It empowers farmers to make informed irrigation decisions, conserve resources, and maintain crop health.

METOS TSM provides a holistic view of moisture levels, helping reduce the risk of over-irrigation and related environmental issues such as water runoff and groundwater depletion.