



METER

SATURO NOW ADOPTED AS A STANDARD METHOD



SATURO Field Saturated Hydraulic Conductivity

THE NEW STANDARD

The SATURO infiltrometer combines automation and simplified data analysis together in one system. And it's less prone to error than other methods. For these reasons, the USDA National Resources Conservation Services (NRCS) Soil Survey Team and the Soil Health Institute have both adopted the SATURO as the standard method of measuring saturated hydraulic conductivity and the Soil Health Institute considers it a tier 1 indicator for soil health assessments. Increased ease of use, conservation of precious resources such as water and valuable research time, and higher accuracy – the bigger question is why wouldn't you choose to use the SATURO for all your saturated hydraulic conductivity measurements?

HISTORICAL CHALLENGES OF MEASURING KSAT

If you've ever measured saturated hydraulic conductivity in the field, you know it's an arduous process. Transporting hundreds of gallons of water and bulky equipment to the site, hammering in large double-ring infiltrometers, setting up water supply reservoirs that need to be constantly refilled, installing floats to maintain water levels, connecting hoses, setting up data loggers, and testing to make sure the whole system works.

Then, after babysitting the system for 1-2 hours, the data still requires extra processing. The data needs to be manually downloaded, and an α value, representing the soil macroscopic capillary length, is added to account for lateral flow. The problem is, this α value must be guessed based on the assumed soil type you're studying. Get it wrong, and all of your calculations are inaccurate.

This was a process METER research scientist Leo Rivera became exhaustingly familiar with during his graduate work. His project, funded by the National Resources Conservation Service (NRCS), required visiting over 100 locations, repeating this process at every single one. He spent so much time in the field, he was actually captured by Google Maps in one of these locations doing field work.



RETHINKING WHAT'S POSSIBLE

When Leo joined the METER team, he wondered why this process couldn't be simpler. That small seed question is what grew into the development of the SATURO.

The SATURO was designed to simplify every step of the field saturated hydraulic conductivity measurement. Installation only requires the SATURO infiltration head, the control unit, and the included collapsible water tanks. Unlike the double ring infiltrometer, it uses only about 3-10 gallons of water, depending on soil texture and structure. Just hammer the insertion ring into the soil, insert the gasket and infiltrometer head, connect the hoses, and configure your test.

The best part about using the SATURO is what you don't have to do. Once configured and running, you can walk away, freeing up your time for more important tasks. Thanks to the use of the dual-head method, everything is automated. The control unit can determine the lateral flow, choose the correct α value, and provide you with an already adjusted saturated hydraulic conductivity and graphed data. Because of this, the data is more accurate and ready to publish quicker than any other method.

NO MORE

- Hauling trailers of water
- Babysitting instrumentation
- Guessing soil type
- Guessing the correct α value
- Calculating after measurements

[Visit meter.ly/saturo to learn more about the SATURO →](https://meter.ly/saturo)