

FullStop-WFD Islanma Cephesi Dedektörü (FullStop-WFD Wetting Front Detector)



The Wetting Front Detector shows you how deeply water infiltrates into the soil and helps you to save fertilizer.

The Wetting Front Detector helps you to “see” what is happening down in the root zone when you irrigate the soil. Wetting Front Detectors are buried in the root zone and pop up an indicator to show when the infiltrating water goes past. They also capture and store a sample of water from the wetting front.

The Wetting Front detector can be used to:

- Find out if you are irrigating too little or too much
- Assist in the management of fertilizer and salt
- Show if the soil is water-logged

Wetting Front Detectors are supplied with a syringe to remove the soil solution sample and nitrate test strips to measure the soil fertility. Whether you are using mineral or organic fertilizers, nitrogen (nitrate) is the key nutrient to monitor, as it is easily washed out of the root zone. The color strips show how much nitrate is in the soil by turning white or pink or purple.

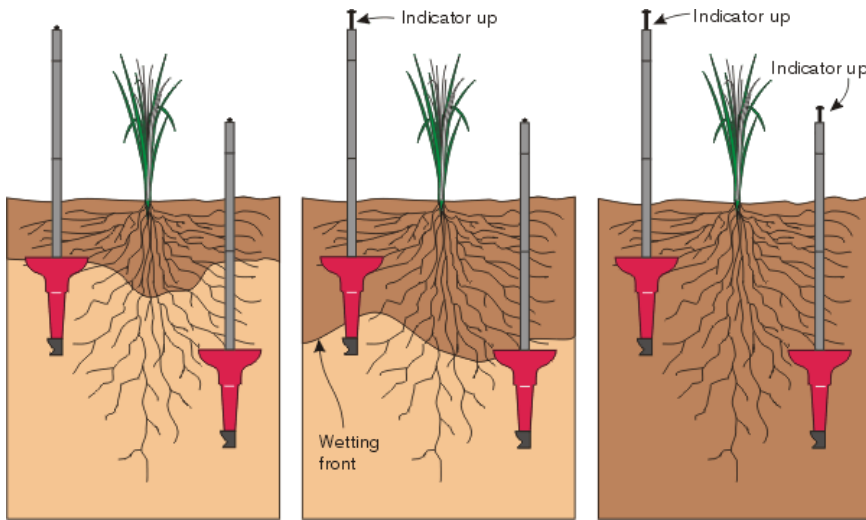
How does it work?

The funnel shaped detector is usually buried halfway down the active root zone. As infiltrating water moves downwards, it is captured by the funnel. Saturation occurs at the base of the funnel, causing a float to rise which is latched in the ‘up’ position by a pair of magnets. This shows the irrigator how deeply irrigation water moved into the soil. Together with nitrate test strips and a salt meter, the detector allows you monitor nutrients and salt.



Farmer’s Testimony

“Within one or two seasons of becoming comfortable with the tools farmers reduced their field irrigation supplies. According to key farmers, they typically extended the irrigation cycle from the local storage reservoirs from 8 to 11 days, or 9 to 12-13 days – effectively a water use reduction of 35%.”

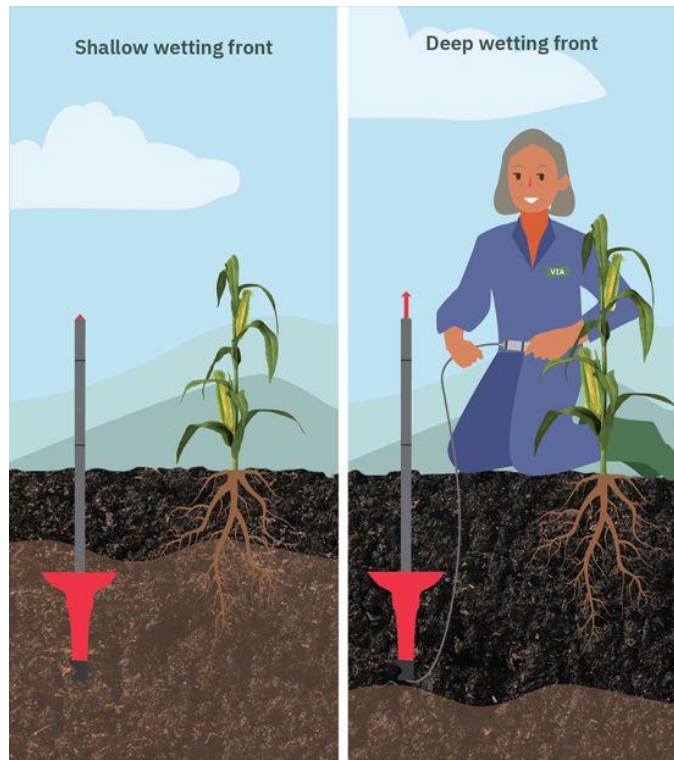


It takes a bit of experience to determine optimal placement depths for the WFDs. Ideally, a shallow WFD would respond to most irrigation events, showing that water has moved well into the rootzone. A deeper WFD should respond more rarely, as it may mean that water has moved beyond the rootzone.

Nitrate levels rise after application of nitrogen containing fertilizers, manure and compost, and also due to the mineralization of organic matter. Nitrate levels fall due to plant uptake and leaching. When nitrate levels are high, irrigation amounts should be reduced to minimize the chance of leaching.

If the electrical conductivity of irrigation water is the yellow zone or above, salt will likely accumulate in the root zone. Different crops have different sensitivity to salt (EC). Salt should be leached before reaching the level where crop yields decline.

The concentration of solute measured from the WFD is a measure of the nitrate and salt that is leaving the soil layer above and moving into the soil layer below. Thus, if nitrate or salt readings are high at a particular depth, it means that these solutes are being pushed deeper into the soil.



Components

The Wetting Front Detector is comprised of the following components:

- Red funnel (x2)
- Base piece with steel mesh filter (x2)
- Black extension tubes (x5)
- Locking ring (x2)
- Indicator cap red (x1)
- Indicator cap yellow (x1)
- Foam floats (x14)
- Green flexible tubing (x2)
- Syringe (x1)
- Bag of heat-treated silica (filter medium) (x2)
- Protector rods-sampling tube (x2)