



Soil water content at field capacity (FC): estimation of a reliable value in the field

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Obtaining realistic values of the volumetric water content at Field Capacity (FC) is crucial in many agronomic and hydrological calculations. Reliable Field Capacity values are needed as an input for crop models, to calculate the water holding capacity of the soil and its availability to plants and to identify drainage events in relation to soil moisture and precipitation (irrigation and rain). It is also a very useful reference value when transforming and interpreting raw moisture data time series in the soil profile. Traditionally, it has been a general practice to determine the FC water content at a given water potential (-10 to -33 kPa), using pressure plates, evaporative methods (Hyprop, UMS, München, Germany) and dew point techniques (WP4T, Decagon, Pullman, USA). Another method to obtain FC values is by installing soil moisture sensors and identifying the inflection point in the soil moisture graph when, after a precipitation event, drainage due to gravity slows down. This field method is generally used in commercial irrigation fields to make tactical decisions. Usually, finding a consistent value for FC is quite difficult as it shows high variability depending on soil type, previous soil moisture content, type of precipitation (drip, subsurface, sprinkler, rainfall) and evapotranspiration demand. This work compares the soil water content values obtained under different conditions and analyses the variability and its implications for irrigation scheduling.