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Estimation of Water Status by Relative Stem Water
Time Domain Reflectometry in Satsuma Mandarin

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In earlier research, we developed a system to measure the volumetr
branches and trunks of satsuma mandarin (*Citrus unshiu* Marcow.)
Domain Reflectometry (TDR). However, there were some problem
dependency or the unevenness of the values at the beginning of the
errors in the insertion of the probe. Therefore, in this research, a rev

to adjust for the temperature dependency; and to remove the uneve
relative evaluation based on the annual point time at which the stem
stable was examined. Concerning the revised equation, we recogniz
between the temperature and the TDR value through which we obta
equation. During the measurement period, from early and mid-July t
the temperatures were above 30 degrees and the soil was wet, the s
determined to be the point at which the stem water content reached
the relative value of TDR (R_{rev}) could be fixed, and the correlation
the leaf water potential (LWP, φmax) was demonstrated month by
coefficient in July was 0.888, and that in August and September wa
October and thereafter, the coefficient decreased to 0.435. Howeve
converted into volumetric water content (VWC) maintained its corre
LWP 0.3 and under every month. The predicted value of LWP fron
showed a strong correlation ($r^2 = 0.712$) with the observation LWP
method used in this research seemed to be able to measure the wate
high precision.

Key Words: irrigation, leaf water potential, sheet mulching, water

[PDF (684K)] [References]

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