DAILY TRUNK CONTRACTION IN RELATION TO A BASE LINE AS AN IMPROVED CRITERION FOR IRRIGATION IN AVOCADO

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Maximum daily trunk contraction, calculated through the difference between the maximum and minimum diameter in a certain day, may be considered as a criterion for irrigation. The irrigation strategy in many orchards is based on empirical changes in order to have a minimum daily trunk contraction. Maximum daily trunk contraction does not show full measurement of accumulated stress. In conditions of accumulated stress, the daily maximum contraction increases under a limited range; while in extreme stress conditions, the maximum daily trunk contraction tends to decrease. The criteria for irrigation can be improved in order to be applied under accumulated stress conditions, by establishing a baseline to measure the changes in the trunk diameter. The maximum daily contraction in relation to a baseline will increase in accumulated stress conditions, with the possibility of being used as criterion for irrigation. We found expression of this hypothesis in the poor correlation between the trunk contraction, calculated in the traditional way, and the vapour pressure deficit (VPD) in the atmosphere (R^2=0.63), contrasting with the high correlation with the daily maximum contraction, calculated in relation to the baseline reference (R^2=0.91). The baseline is arbitrarily determined but even a parallel line improves the correlation between VPD and the daily maximum contraction. The determination of the daily maximum trunk contraction in relation to a baseline reference should be included as a useful parameter to determine irrigation in avocado.