

Influence of Soil and Irrigation Management on the Quality of Seedless Crimson Table Grapes.

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The market for table grapes is moving into mass production of specialty seed-less grapes in covered areas, aiming at obtaining premium prices with early or late production of high quality products. Production of quality seedless grapes is not straightforward since it requires the correct combination of various independent characteristics, such as color, sugars, size and quantity at the right moment for successful harvesting and marketing. The present study was carried out at the two largest Portuguese producers located in Alentejo, and has the objective of studying the effect of irrigation management strategies and two different soils on the various relevant parameters for successful production and marketing. The management strategies were the application of ten day stress at the end of the cycle, in order to promote early maturing of the grapes.

Three different timings of the stress were applied. Soil moisture, sap flow, bark thickness, as well as leaf water potential, stomatal conductance and chlorophyll content were measured regularly during the production season. The results indicate that the roots explore a rather large soil volume and the plants can successfully withstand reasonable periods of drought without significant changes to the plant physiology. Additionally late rains can mask the effect of any farmer applied drought and invalidate any farmer induced stress to the plants. Water-logged soils tend to cause early onset of maturity, but cause the ripening stage to extend over a longer period of time, and thus, in effect result in a delay in the harvest date. Topography also has some effect on the ripening, since hot air tends to accumulate under the plastic at the higher areas of the field.

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