

Effects of defoliation and topping on syrah grapevine in tropical semi arid of Brazil

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The wines of the Sao Francisco Valley, Northeastern Brazil, are the only ones in the world produced in a semiarid tropical condition. This work shows results related to the 4th production cycle for physiological and agronomic characteristics of vine Syrah, submitted to the practices of defoliation and topping. The experiment was carried out in 2012 in a commercial vineyard of 'Syrah' grafted on rootstock IAC 766, with five years old, drip irrigated. The treatments consisted in combinations of the practices of defoliation of basal leaves above the last bunch, applied one time in beginning of berry touch stage, and topping applied in two stages: 'pea' size grain and beginning of berry touch. The control (T1) consisted to the same canopy management adopted at the farm which was two defoliations, and one early topping. The experimental design was randomized blocks with four replications. The fresh mass of shoots was not influenced by defoliation and topping, although the leaf fresh mass differed significantly between treatments. Plants subjected to treatment T2: defoliation and no topping showed higher production than those subjected to T5: defoliation and topping on stage 1. Greater mass of the bunch was obtained in T8: no defoliation and topping at stage 1. Average Ravaz index was 7.5 showing an excess in the production of fruit. The effects of defoliation and topping on gas exchange were analyzed through photosynthesis, stomatal conductance and water use efficiency from 15 days of treatment application until the ripening stage, using the IRGA (model Li -6400 XT). From the standpoint of leaf gas exchange, practices and cutting defoliation did not affect the plants. It will be up to the grower to adopt the technique that implies lower operating costs by ensuring good photosynthetic rates and resulting improved quality of grapes for winemaking.