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The Influence of Sunlight on Grape Berry Growth and Composition Varies During Fruit Development

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Cabernet Sauvignon and Pinot noir grapevines (*Vitis vinifera* L.) grown in a sunlit phytotron were used to study the influence of sunlight exposure during specific stages of fruit development on berry growth and composition. Fruit clusters excluded from sunlight during berry development stages I and II, stage III, or stages I, II, and III, were compared to fruits exposed to 20% of ambient sunlight throughout berry development (control). The fruits of both cultivars responded similarly to the treatments in this experiment. Berries grown in the absence of sunlight during stages I and II were similar in both diameter and weight to berries excluded from sunlight throughout their development (stages I, II, and III). The berry diameter and weight of these treatments were significantly lower than those of the control. Berries excluded from sunlight during stage III were similar in diameter and weight to berries of the control. The composition of berries excluded from sunlight during stages I and II was similar to the composition of berries grown in the absence of sunlight throughout their development. The fruits of these treatments contained greater malate concentrations prior to veraison, exhibited reduced rates of post-veraison sugar accumulation and malate degradation, and had lower anthocyanin and total phenolic concentrations in their skins compared fruits of the control. Fruits excluded from sunlight during stage III exhibited only slight reductions in the rates of post-veraison sugar accumulation and malate degradation compared to the control. Sunlight exclusion during stage III significantly reduced skin anthocyanin and total phenolic concentrations compared to the control. Sunlight exposure had no significant effect on the tartrate content or juice pH of fruits in this experiment.

Influence of Basa and Croppi Growth, Yield, C and Bud Fr in Seyval G

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Basal leaf removal effects on gr hardiness and fruitfulness of the removal, were studied in different grapevines, whether young potted o leaf removal had no significant ef differentiation and primary bud h vines suggested that an eventual co more effective following treatment a The net CO_2 assimilation rate per u by leaf removal at pea size, unlike a increased A, especially on potted v was lower on fruiting than on non- vines, basal leaf removal improve cluster region with no significant tion. In 1990, when canopies were reduced the percentage of rotten cl clusters per node retained (1.5), but n (NT) vines. Carbohydrate storage i due to an early leaf killing frost and crop. Field cold injury was greater i dormant seasons, as evidenced by nodes in 1990 than in 1991. This affected by leaf removal, and was lo vines. In 1990 the number of cluste on 0 than on NT vines. Differences i and primary bud fertility betwee significant in any trial year.