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Título del artículo: Effect of timing of drought stress during dormancy on starch storage in grapevine

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RESUMEN: Carbohydrate reserves sustain the early growth of grapevine plants (*Vitis vinifera*) in spring. In this study, we test the hypotheses that (i) water stress during dormancy modify the content of stored starch in the trunk, and (ii) starch content is related to the timing of water stress. We designed a trial in a commercial Syrah vineyard with three water regimes: (a) winter drought (WD), in which water was excluded with rainout shelters during dormancy; (b) irrigated to fill the soil profile at the onset of dormancy (IO), and (c) irrigated to fill the soil profile at the beginning of bud break phenological state or at the final of dormancy (IF). During the growing season, all three treatments received the same amount of water until harvest: rainfall and irrigation with 30% of the reference evapotranspiration. Water stress during dormancy did not have a carry-over effect of winter drought on plant water status in the vegetative period after the first irrigation. Instead, it reduced carbohydrates stored in the trunk by 30%, which was associated with a reduction in pruning mass. Yield was also affected in response to the amount of water at the beginning of dormancy, interacting with starch level. This suggests that the plant allocates resources for yield after reaching a certain starch level, while also reserving some starch for storage in its reserve organs. Our study supports the concept that water supply during dormancy influences starch storage in the trunk of vines at the beginning of the vegetative period.

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