EFFECTS OF ACCELERATED OXYGENATION AND AGING ON ANTHOCYANINS AND CHROMATIC CHARACTERISTICS OF BRS VIOLETA YOUNG RED WINE

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Violeta young red wine (VYRW) shows dark red-purple color, because of high concentrations of anthocyanidin-3,5-diglucosides (ant-3,5-diglc) and important copigmentation due to also high content of anthocyanidin-3-cumaroylglucoside-5-glucosides (ant-3-cmglc-5-glc). Accelerated oxygenation treatment of VYRW (bottling with head space, air renewed twice a day and vigorously shaken over 13 days) slightly changed the red color component (OD520), whereas yellow component (OD420) increased, thus enhancing both color intensity (OD420+OD520) and hue (ratio OD420/OD520, from 0.46 to 0.62). Regarding anthocyanin composition (HPLC-DAD-MS/MS), only 6% of total anthocyanins were lost during the treatment, especially ant-3-cmglc-5-glc (23%). Accelerated aging in full bottles of VYRW was achieved in darkness at two storage temperatures (30°C and 50°C) over 36 days. Total phenolic content decreased (initially more at 50°C, but reaching similar contents at final stage for both aging temperatures) being anthocyanins the main affected phenolics. Anthocyanin copigmentation evolved in parallel to anthocyanin content but was still important after aging (from 40% to 20%). Individual anthocyanins decreased as follow: at 30°C, ant-3,5-diglc and ant-3-cmglc-5-glc similarly decreased by 40-42% (total average loss, 39%); at 50°C, ant-3,5-diglc decreased in higher proportion (79% vs. 70% for ant-3-cmglc-5-glc; total average loss, 73%). The CIELAB parameters of aged wines evolved towards slightly lighter and less pure color (increase of L*, decrease of C*), with a very remarkable increase of hue angle towards red color without purplish nuances (high parallel increase of h* and b*). Finally, the antioxidant capacity (TEAC) slightly increased in the first stage of aging and did not significantly change further.