

POSTER PRESENTATIONS

THEME I – A Worldwide Perspective on Viticultural Zoning

Phenology and Bioclimate of Wine Grapes in the Tropical Region of the São Francisco Valley, Brazil

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The region of the São Francisco Valley, located at 9°S, has been increasing the production of fine wines during the last years. The region has a tropical semi-arid climate (viticultural climate with intra-annual variability according to the Geoviticultural CCM System : « very hot, with hot nights and an intense to sub-humid dryness » depending on the period of the year in which the grapes are produced). The research aims at characterizing the phenology and bioclimatology of the region's wine grapes. Four cultivars with different levels of precocity were evaluated – Syrah, Cabernet-Sauvignon, Muscat Canelli and Schönburger, grafted on IAC 572, a vineyard in its first productive cycle, using the pergola as training system. The phenological stages bud burst (b) – stage 05, flowering (f) – stage 23 and ripening (r) – stage 35 were evaluated according to the system of Eichhorn & Lorenz. The date of the harvest (h) corresponds to the commercial grape harvest. The duration of the phenological sub-periods b-f, f-r r-h and b-h has been calculated. For each sub-period 19 climatic indices have been calculated – thermic, hydric as well as the solar radiation. The results of the São Francisco Valley have been compared with the same cultivars from a temperate climate

region – the Serra Gaúcha (« temperate warm, with temperate nights, humid climate » according to the Geoviticultural CCM System), located 29°S. The results have shown that the duration of the period b-h has been 124, 123, 116 and 104 days for Syrah, Cabernet Sauvignon, Muscat Canelli and Schönburger, while in the Serra Gaúcha the duration has been 158, 160, 160 and 138 days, respectively. As for the bioclimatic characteristics, the mean air temperatures in the São Francisco Valley during the period b-h have varied from 25,4 to 28,1 °C, whereas in the Serra Gaúcha the temperatures have oscillated between 15,8 and 21,8°C. The potential evapotranspiration, even when showing higher mean daily values in the Valley, was similar in both regions during the whole period b-h. The global solar radiation for the period b-h in the São Francisco Valley was lower when compared with the Serra Gaúcha. This result is related especially to the latitude (photoperiod) and the shorter duration of the b-h period under tropical conditions. The study presents the bioclimatic indices by cultivar and sub-period, comparing the region of low with that one of mean latitude. It has been concluded that the vegetative cycle of the grapevine (b-h) is significantly shorter in the the São Francisco Valley (mean duration, for the 4 evaluated cultivars, 37 days less than in the Serra Gaúcha). Such behavior is a consequence, essentially, of a shortening of the period b-f (29 days shorter in the average). It can be stated that the phenological behavior of the grapevine in the São Francisco Valley, although distinct from a temperate climate region, can be understood above all by the particular bioclimate found in the tropical zone.