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Diachronic study of the effect of growing trees on grapevine yield: 24 years of experience in the South of France

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Grapevine growers are fearful of the potential effects of climate change on yield and wine quality: the continuing trend for earlier harvest date leads to a decrease in wine organoleptic quality, and increased temperatures lead to heat stress and reduced yield. Thanks to its microclimatic effect, agroforestry could mitigate these risks. In 1995, trees (mainly *Pinus pinea* and *Sorbus domestica*) were planted with 4 or 5 rows of grapevine between each row of trees, on the Restinclières Agroforestry Platform, in the South of France. Twenty-four years later, the accumulated experience allows us to draw conclusions on the beneficial effects of the agroforestry microclimate, with up to 6 degrees lower in agroforestry compared to the pure grapevine control in the hottest summer days, but also on the negative effects of agroforestry, such as nitrogen competition between the trees and the vine, which is significant only on the grapevine row nearest to the tree line.



Grapevine associated with *Sorbus domestica* and *Pinus pinea*

Keywords: grapevine, microclimate, yield, grape juice quality.