



BACCHUS grape harvest days from Vienna and Klosterneuburg from the 16th to the 21st century

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The development of a grape harvest date (GHD) time series for the period 1523-2007 from Vienna and Klosterneuburg which are situated in one of the most north-eastern regions in Europe where wine is grown professionally is shown. Only original historical manuscript sources are used in order to avoid mistakes arising from later transcriptions and editions. Since wine harvest dates are intensely influenced by spring to (early) summer temperatures especially in a climatic border region for wine growing, we found highly significant correlation coefficients between the homogenized single to multi monthly mean temperatures at Vienna - Hohe Warte and GHD. This made it possible to reconstruct May to July mean temperatures starting in 1523 using the years from 1775 to 1850 as calibration period for determining the temperature sensitivity of GHD. The normalized power spectra of reconstructed and observed temperatures show both the same absolute normalized maximum at a period of 3.4 years confirming the quality of the temperature reconstruction. The more than 30 years lasting continuous temperature increase since the 1970s seems to be unprecedented in the last 470 years. But it also turned out that probably a change in viniculture took place in the last about 30 years as the GHD of this period show remarkable differences of temperature sensitivity to the historical series.