Geophysical Research Abstracts, Vol. 9, 07578, 2007
SRef-ID: 1607-7962/gra/EGU2007-A-07578

Temperature and grape harvest dates in France

V. Daux (1,2), P. Yiou (2), O.Mestre (3), E. Le Roy Ladurie (4), B. Seguin (5), I. Chuine (6), E. Garnier (7), N. Viovy (2)

(1) Université P. & M. Curie, Paris, France, (2) Laboratoire des Sciences du Climat et de l'Environnement, IPSL, Gif sur Yvette, France, (3) Météo France, Toulouse, France, (4) Collège de France, Paris, France, (5) INRA, Avignon, France, (6) CEFE, Montpellier, France, (7) Université de Caen , Caen, France

Grapevine is a Mediterranean, hardy and perennial plant. Its development annual cycle strongly depends on climate – especially temperature. Grape harvest occurs when the grape has reached maturity. Though grape harvest date, which is influenced by the socio-economical context, is not a phenological parameter, it seems to be linked to the spring-summer mean temperature. We investigate the relations between grape harvest dates and regional monthly temperatures for vines from Burgundy, Champagne, Bordeaux, Alsace and Rhône areas since 1850. The best correlations are obtained for May to August mean temperature versus dates. The time of grape maturity depends not only on temperature but also on grape variety. Not surprisingly, the best correlations (R) (highest correlation coefficients) are obtained for regressions involving single varieties. For example, R=0.6 for harvest dates of Alsace vines combining several varieties, and R=0.9 when considering Riesling only. The slopes of the different regressions tested are all close to 0.1 ˚C/day : whatever the area and the grape variety, a 1˚C variation in the May to August mean temperature results in a variation of ten days in the grape harvest date. The potential of grape harvest dates as a temperature proxy is thus high. However, information on grape varieties is necessary to make the most of grape harvest dates series.