

Climate change and fruit growing in Germany (KliO)

F.-M. Chmielewski and Y. Henniges

Institute of Crop Sciences, Subdivision of Agricultural Meteorology, Humboldt-University of Berlin (Email: chmielew@agrar.hu-berlin.de, Fax: +493031471211)

A regional climate impact study for Saxony, which is an important fruit growing area in south-east Germany, has shown that in the last decades the blossoming time for fruit trees has advanced by several days due to increasing temperatures in winter and in early spring (Chmielewski et al. 2004). Additional estimations on the basis of climate change scenarios up to 2050 pointed to a further shift of phenophases in spring and to an increased risk of late frost damages after the beginning of tree blossom (Chmielewski et al. 2005). The result could be severe economic losses for fruit growers if no adequate frost protection is introduced. For this reason, now a German wide study will start in order to investigate the impact of climate change on fruit growing more in detail. The study will focus on the main fruit growing regions in Germany such as Baden-Württemberg, Lower Saxony, Rhineland-Palatinate, and Saxony. For these regions, possible impacts of climate changes on fruit growing will be investigated up to 2100. The impacts can include changes in the growing conditions of fruit trees, in the risk of frost and hail damages and in the development of harmful organism. Over and above this adaptation strategies for the farmers will be developed and economic aspects are considered. Project partners within 'KliO' are the 'Fruit Growing and Consulting Service' (OVB) in Jork (Rhineland-Palatinate) and the 'German Institute for Economic Research' (DIW) in Berlin. The paper will show some results of the pilot study and will present the scientific approach within the project 'KliO'.

References: Chmielewski, F.-M.; Müller, A.; Bruns, E. 2004: Climate changes and trends in phenology of fruit trees and field crops in Germany, 1961-2000, *Agricultural and Forest Meteorology* 121(1-2), 69-78. Chmielewski F-M, Müller A, Kuchler W 2005: Climate changes and frost hazard for fruit trees. *Annalen der Meteorologie* 41 (2), 488-491.