Reflections on the scope of the scientific principle and the idea of sustainable agriculture

T.Sivertsen

Norwegian Institute for Agricultural and Environmental Research (tor.sivertsen@bioforsk.no)

An interpretation of the scientific principle (as used in the contexts of agro meteorological modelling) is presented and discussed, containing the concepts of classification of meteorological and biological phenomena, parameterisation, testing and operational use of models.

The ideas of pure science and applied science are presented, and then the concept of scope of the scientific principle is discussed. Both the use of science for understanding nature, the use of science for implementing applications, and the use of science for understanding the consequences of the use of applications are contained in this discussion.

The views and discussion are also extended towards society; and what should be the content of the concept of sustainable agricultural production. The concept of the relations of human beings to other biological organisms and to past and future generations is a part of this discussion.

References:

Philip, J. R., 1991, Soils, natural science, and models, Soil science, 151: 91-98

Addiscott, T.M., (1993), Simulation modelling and soil behaviour, Geoderma, 60:15-40.

Sivertsen T.H., 2004, Invitation to Conceptual Discussions Concerning the Scope of the Scientific Method and Classification Systems of Meteorological Phenomena and Meteorological Parameters, P. 185 – 190., Selected Papers of the International conference "Fluxes and Structures in Fluids". St. Petersburg, Russia, June 23-26, 2003. Moscow. IPM RAS. 2004.

Sivertsen, T.H., Magnus, H. og Rafoss, T., 2004, Landbruksmeteorologi for landbruk og miljø, Grønn kunnskap, Vol.8 Nr.106, 2004, Elektronisk publikasjon på Planteforsks web-sider; in Norwegian

Sivertsen T.H., 2005, Discussing the scientific method and a documentation systems of meteorological and biological parameters, Physics and Chemistry of the Earth Special Issue: Agrometeorology 2003, Vol 30/1-3 pp 35-43 Sivertsen, T.H., 2005, Discussing scientific methods and the quality of meteorological data, in 'Use and Availability of Meteorological Information from Different Sources as Input in Agrometeorological

Models', COST ACTIONS 718 'Meteorological Applications for Agriculture', Edited by G. Maracchi, A. Mestre, L. Toulios and B. Gozzini.

Sivertsen, T.H, 2005, Reflections on the Theme of Classifying, Documenting and Exchanging Meteorological Data, Atmospheric Science Letters, John Wiley & Sons.