O.12 - Intensification of winter wheat production: a path-dependency analysis

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This paper is based on the work done in the French research project Gedupic (*Gestion écologique de la santé des plantes*) which brings together agricultural and social scientists around the issues of transition towards integrated production. Three case studies on wheat, weeds in arable crops and orchards make possible the study of transitions in their technical, sociological and economical aspects. Transversal questions are the basis for the case studies and discipline confrontation. The main one deals with the coherence of the whole “socio-technical system” which encompasses the different levels of technological innovations, research priorities, farming practices, farm structure and management, economic intermediaries (suppliers and buyers), advisors, and regulations. We aim in this paper to demonstrate the coherence of this whole socio-technical system and the irreversible changes created by the specific and interdependent trajectories of the system’s different components. We draw on the case of winter wheat in France to analyse how this socio-technical system has progressively stabilised itself around the “paradigm of intensification”, creating “lock-in” and “path dependencies” (Cowan and Gunby, 1996). The convergence of innovations (homologation of new pesticides, changes in fertilisation methods, earlier sowing, etc.) and actor strategies lead to a change from a curative use of pesticides to a more systematic one. On the other hand, studying minor trends makes possible the identification of conditions for transitions towards more sustainable forms of crop protection.