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Livestock farming systems research in Europe and its potential contribution for managing towards sustainability in livestock farming

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Abstract

Livestock farming systems (LFS) research in Western Europe has been mainly conducted by ‘generalist’ animal production researchers. It involves strong interaction with a wide range of disciplines outside animal science to provide an improved understanding of the potential for the integrated development of LFS. LFS researchers have developed concepts, methods and tools to address the livestock farming activity as a whole. The approach is primarily based upon a dual concept of a farm which integrates human objectives and constraints with technical knowledge derived from ‘conventional’ animal and other biological sciences. Progress is achieved through the application of systems modelling. The need for such a systems approach has increased with recent political pressures in Europe to limit agricultural production, reduce pollution, enhance the environment, meet new societal concerns such as product quality and animal welfare, and maintain rural infrastructures. The objective of the LFS Working Group of EAAP is to improve the basis of this systems approach within the animal production scientific community. We consider that LFS research can contribute support for improving the sustainability of livestock systems provided that: (i) the interdisciplinary nature of the research is maintained and (ii) the approach maintains its roots in the community of animal scientists. These themes are developed in the paper. © 1999 Elsevier Science B.V. All rights reserved.

Keywords: Animal production science; Livestock farming systems; Research and development; Farm management; Farmer practice; Sustainability; Methodology; Integrated approach; Systemic modelling; Decision support

1. Introduction

A series of symposia was initiated under the auspices of EAAP and the European Union in 1990 to encourage discussions between European animal

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