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Developing tools to standardise the assessment of sustainability in pigmeat production systems – Genetic Resources

L.Rydhmer, J-L.Gourdine. SLU, Sweden

Swedish University of Agricultural Sciences

Within the EU Q-PorkChains project, the aim of this work was to identify the best adapted tool for assessing how the genetic resources are taken care of in various conventional and alternative production systems. This tool belongs to a package of tools aiming at a standardized assessment of the various dimensions of sustainability of pork production systems. These tools will be used in benchmarking of different current and future pork production systems.

Introduction

Within the Q-Porkchains project a suite of tools have been developed to assess, under practical conditions, the sustainability of different pigmeat production systems.

The genetic diversity in the European pig population is a fundamental resource for the continuous development of pork products and the efficiency of the production process. The aim of this inventory was to find tools that could be used for standardized assessment of the consequences of breeding programmes on biological diversity, quality of products, acceptability of production, environmental impact, social conformity and economy of production. The tool should be able to use without access to confidential data bases of breeding organisations.

Review of existing tools

The reviewed tools are applicable at the production system level rather than at the farm level, since pig breeding has a hierarchical structure. Two groups of tools have been identified: tools for inbreeding estimation and sustainability checklists for breeding programmes. Examples of these tools are DAD-IS (http:dad.fao.org); Characterisation of breeds (Ruane, 1999); Checklist for sustainable schemes (Woolliams et al., 2005); Checklist for adapting sustainability to farm animal breeding practices (Gamborg and Sandöe, 2004); List of societal concerns about pork production systems (Kanis et al., 2003) and Code of Good Practice (EFABAR, 2007).

Proposed Tool

The final tool that will be used within the Q-Porkchains project as part of the suite of tools to assess sustainability of pig production systems across Europe will be based on the checklist for sustainable schemes presented by Woolliams et al (2005). It is the only reviewed tool that integrates all the sustainability aspects without being too complicated for practical use. The checklist will, in a slightly modified form, include the following points:

i) definition of the market and product

ii) definition of the breeding goal

iii) sensitivity to external factors

iv) availability of economic, technical and human resources

v) change of inbreeding

vi) sufficiency of recording

vii) prediction of expected effects of selection

viii) monitoring and evaluation of genetic progress

ix) definition of time horizon and milestones

x) evaluation of profitability of the breeding scheme

xi) characteristics of the breed (if local breed is used)

Conclusions

In order to make assessments of the sustainability of genetic aspects of any given pig breeding programme, it is essential to use the tool in cooperation with the breeding organisations or herd books involved in the studied production systems.

The proposed tool is a checklist with rather detailed but short questions which should be easy enough to work with, in dialogue with the breeding organisations.

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