

Research in Organic Animals and Livestock Production

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Introduction

Over the last 80 years a wide range of diverse organic livestock systems have developed. The driving force behind these developments has mainly been the farmers, consumers and various movements, and it has happened more “despite research” than “because of research.” Most production methods have developed in Western Europe and USA, where they are primarily niche products for consumers who give priority to environmental and animal welfare concerns. In these countries organic livestock production offers the option of establishing a niche product that can be sold at a higher price, e.g. as for milk and eggs. In some cases, the potential of organic farming is associated with the adoption of organic principles into existing systems with the aim of improving sustainability and achieving environmentally friendly production, food security and good food quality. In the US, government support for organic research, some of which was for livestock studies, increased from 15 million dollars in 2002 to 78 million in 2008.

In Australia where more than 95% of the certified organic land is pasture, government-supported research tends to focus on organic dairy and meat production. In addition, research into agro-forestry systems is also of potential interest to the Australian organic sector. In many African and

Asian countries, organic livestock plays a very minor role compared with production of high value organic crops, and hence is not covered specifically in research initiatives. A recent survey on African organically-oriented research projects concluded that no significant research focuses on organic livestock. In South America, a number of research projects have been carried out on integrated agro-ecological farming, which includes livestock. These are not necessarily certified organic systems, as “organic” is often perceived as high value products, while “agro-ecological farming” is basically the application of the fundamental organic principles, so research in these systems provides valuable insights for organic research in general.

Research is necessary for many reasons, but at a fundamental level it is relevant to both provide specialised knowledge relevant to organic situations (e.g. feed stuffs) and to take a systems approach through interdisciplinary research (e.g. how grazing systems integrate good animal welfare aims with environmental care). A third aspect important to consider is the human and social structures around organic livestock systems, e.g. farmer attitudes, actions, practices and interactions with advisory services.



Different approaches to organic livestock research

There have been a number of research projects that have compared organic systems with non-organic systems. These have provided documentation about differences and similarities within the same cultural, geographical and traditional context. Other research projects have focussed more on the development of organic farming involving farmers, farmer organizations and/or other stakeholders within the organic sector. This type of research has emerged partly through the engagement of the organic movements and producers in the development of their sector. It generally involves small, often privately funded, non-governmental, sometimes non-mainstream institutions that are interested in local and context-oriented research.

In recent decades, there have been a number of EU projects involving organic livestock production, including network projects like the “Network for Animal Health and Welfare in Organic Agriculture” (NAHWOA) and “Sustaining Animal Health and Food Safety in Organic Farming” (SAFO), both linked at www.safonetwork.org. These have contributed hugely to international project collaboration, exchange of information and joint research proposals, and have involved new and emerging EU Member States, which often have more diversified and integrated farming systems inspiring a focus on the robustness of organic systems. The integrated project “Quality Low Input Food” (QLIF) is another example of an EU project that includes a major combined research focus. QLIF focuses on organic and non-organic low input systems, product quality and consumers’ understanding of “or-

ganic,” as well as certain identified risks related to organic production.

Organic animal welfare concept needs a certain research focus

All organic systems should allow animals to perform their natural behavior. Consequently, “naturalness” is an important key feature of organic livestock farming, combined with a strong emphasis on human care. This philosophical framework for organic animal husbandry gives rise to many, very different challenges, and different types of focus areas for research are involved in identifying the dilemmas and then finding relevant solutions. For example, the objective of naturalness, as well as the acknowledgement of the many health benefits of exercise and open air, leads to grazing as the major emphasis of management for all animal species. Research has contributed greatly towards gaining knowledge on numerous topics relevant for outdoor keeping of animals, including behavioral studies (e.g. contributing to design of outdoor poultry runs), prevention of parasitic diseases in small ruminants (e.g. WORMCOPS (QLK5-CT-2001-01843), feeding of different age groups, as well as management of grassland under intensive and extensive farming conditions. The combined aim of access to “naturalness” and human care represents two widely different challenges in practice as well as scientifically.

Need for an interdisciplinary research approach

Interdisciplinary approaches deal with the complexity of whole systems. In relation to organic grassland farming, the research does not stop with the management of the animals (one or more species per farm). It also aims at providing solutions



to dilemmas between the behavioral needs of the animals on one hand, and environmental care on the other hand (e.g. outdoor pig systems). Much interdisciplinary research has been carried out to enable the sector meet such challenges, although in many research environments a narrower focus would often be preferable in order to reduce complexity and to be able to work from a simple hypotheses. Until recently, relatively few initiatives

within organic livestock research had, for example, integrated natural sciences with social issues.

Research in human perceptions, actions and interactions related to organic animal farming

Some scientific work has focused on animal husbandry practices and disease handling. In the USA, no antibiotics can be used in organic farming, which clearly raises interesting and relevant questions regarding disease prevention and epidemiology. A number of North American studies have compared organic and non-organic dairy systems, and because of the huge differences regarding disease handling between the two systems, these comparative studies may highlight relevant issues important to both the organic and non-organic farming sectors. As the organic livestock sector's aim is to keep animals in a manner that allows them maximum "naturalness," while at the same time providing them human care to a degree that ensures they never suffer, the human-animal interaction is a highly relevant focus area for organic livestock farming. The complex ani-

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mal systems also put high demands on reflective and contextually specific system development, which emphasizes the need for both supporting and understanding human decision-making and how human perception, actions and interactions influence the design of the livestock farming system as well as daily life in organic herds. The projects, the CORE-Organic-funded "Core-pig" and "ANIPLAN" (<http://aniplan.coreportal.org>)

investigated human assessment and decision-making related to the whole production chain and to the conscious process of planning for animal health and welfare improvements, respectively.

Future research needs towards sustainability and resilience in organic livestock systems

A huge number of research needs could be listed in relation to each specific type of production. For example, organic dairy production involves mainly dairy cows, but goats and sheep are also used in dairy systems. However, there is very little research that focuses on organic dairy goats and sheep. Breeding for disease resistance, robustness and use of indigenous breeds still need a considerable research effort, despite some previous research. Feeding with 100% organic feed, especially to mono-gastric animals, is still very difficult and need further investigation. With regard to disease handling the role of vaccination, traditional medicine and alternatives to biomedical treatments needs further research efforts, mostly in order to guide the sector on responsible use,



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rather than attempting to prove that “so-called alternative treatment can work.” Potential control of vector-borne diseases in the development of organic systems in tropical areas is a focus area that should be prioritized, along with other endemic tropical diseases.

The challenges associated with developing resilient livestock systems are clearly different – but equally important – between regions. However, particular elements of traditional farming in tropical areas can be transferred to systems that are more eco-intensive. Many pastoralist systems rely on using huge tracts of land, but increasing populations have resulted in pressure on the land, which then reflects in pressure on the animals. For example, the balance to keep the animals free of parasitic diseases, which was previously solved by moving over large distances, is lost when population pressures restrict movements. This leads to a heavy use of “non-organic” medi-

cines. To solve such problems a combined research and development effort with a strong interdisciplinary approach and with a strong element of farmer input is necessary. This approach is in complete contrast to research for improved resilience and mitigation related to climate change in highly intensive and industrialised livestock systems. These later systems need to balance the requirements of animal welfare friendly systems following organic principles, with pressure from markets for continuous production and for low consumer prices. The reliance on imported feed, the vulnerability of intensive mono-cultural livestock farming (e.g. in terms of disease pressure), and providing very big herds with sufficient outdoor access and grazing possibilities are matters that need a combined effort from farmer innovation, development and interdisciplinary research approaches.



More research is needed on organic dairy goats and sheep.

Source: www.oekolandbau.de

