

Product Quality and Sustainability of Organic Sheep and Goat Production in Mediterranean Countries

Final Report

Thessaloniki, Greece, 15-17 June 2007

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Acknowledgements

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Many thanks are also due to the personnel of the Sun Beach Hotel for helping with the venue, catering and accommodation of delegates.

Executive Summary

The overall aim of this exploratory workshop was to update the existing knowledge on husbandry practices, product quality and safety in organic systems of sheep and goat production. To date, there has been little previous work undertaken on both the production and product quality of organic dairy sheep and goat systems. Hence, the workshop addressed an important theme considering that the EU policy is to expand and to improve the overall competitiveness of organic livestock production systems. The latter is important because organic livestock production systems differ significantly between different regions and different member states of the EU. For example, the implementation of the organic principles and common organic standards concerning livestock production remains a huge challenge.

Fifteen delegates from 7 countries attended the workshop, which lasted two days. During the course of the workshop there have been plenary papers that focused specifically on the quality and safety of organic products from sheep and goat systems as well as on issues related to the sustainability of this sector of livestock production. The plenary papers were presented by invited experts' and by members of the host team. Moreover, there were two working group sessions in order to enable the exchange of valuable information on the latest advances in research and technology in the organic sector as well as to explore the potential of future collaborative actions between participants.

Scientific Content of the event

Workshop objectives

Main Objectives of the Workshop:

The primary aim of this workshop was to assess the existing knowledge and available information on husbandry practices, product quality and safety on organic dairy sheep and goat production systems. Hence, the main objectives were: (i) To assess the current status of organic sheep and goat production in Mediterranean countries and to identify its potential for future growth within the EU market, (ii) to set up research priorities addressing production methodologies and the quality of dairy products and, (iii) to explore the potential of research collaboration between the participants.

In the first day, the ESF representative, Professor Constadinos Doukas who informed the delegates about the activities and the scope of the European Science Foundation, opened the morning session of the workshop. Subsequently, Dr Mette Vaarst of the University of Aarhus, Denmark, presented a number of challenges that were identified through the SAFO project (www.safonetwork.org), with regard to the implementation of EU standards. She produced a detailed description of the major research projects on organic production that have been completed or were still running at the European level. She recommended that relevant areas for future research both at local, national and international levels should include the following: (i) breeding programmes for organic animals, (ii) animal health planning, (iii) improving milk quality, (iv) the role of small ruminants in organic production, (v) grassland farming, (vi) alternatives to conventional veterinary medical treatment methods and (vii) identification of potential food safety risks.

Subsequently, professor Michel deRancourt, of PURPAN, France, reminded delegates the importance of sheep and goat production in the EU and particularly for Mediterranean countries. He presented data regarding the evolution of sheep and goat numbers that manifested that the small ruminant production in the European Union has a steady tendency to decrease. The reasons of this reduction were analysed, either with internal or external factors. Considering the new CAP he presented solutions to reduce the high labour pressure of those systems and

suggested the optimum use of the new consumers' demand for high quality and traditional products.

Georgios Arsenos of the Aristotle University, Greece, highlighted the advantages and disadvantages of organic dairy sheep and goat production systems. He suggested that organic producers should focus on high quality products, considering also process quality and safety. He discussed the important role of small ruminant systems in relation to maintaining the production and availability of traditional high quality livestock products, based on local breeds of sheep and goats at different countries. The importance of the "stable to table approach" in organic production together with the implementation of health schemes and traceability systems were also addressed. The morning session closed by the presentation of Andrea Martini from the University of Firenze, Italy, who described the varieties of organic products for dairy sheep and goat systems. He presented detailed data as well as several case studies from France, Italy and Greece.

Two Working Group Discussions were held during the afternoon session.

The topic in the first Group discussions was product quality and safety. This discussion provided a forum for many clarifying questions about the possibilities of a research project proposal and focused on specific issues such as implementation of existing knowledge, market demands and innovative products. It was emphasised that the safety component is basic to the quality of a product whereas the sensory characteristics (organoleptic properties) are most times related to nutritional aspects. The group agreed that most studies are compositional comparisons between organic and conventional products without any differences of biological significance. It was highlighted that traceability will become a main issue in organic production especially for chemical, antibiotic and antiparasitic residues. The group concluded that although diversity in production methods is acceptable there should be zero tolerance in safety issues.

The second group discussed the problem of diseases in organic livestock and the issue of genetic resistance. Considering the environments as the central factor in livestock production the role of different parameters (e.g. management, nutrition, waste management, welfare assessment, disease prevalence) were discussed. The group produced a wealth of information on husbandry, feeding and breeding techniques in relation to the occurrence of specific diseases in organic sheep and goat systems. The group highlighted main health problems for sheep and goats and stated that breeding and definition of "organic breeds" is a major challenge for the sustainability of organic systems.

Herve Hoste of INRA, France, opened the morning session of the second day of the workshop. He introduced the issue of alternative strategies for the control of parasites in organic systems. He described studies, which had examined several alternatives to classical parasiticides. He presented three general basic concepts, which can be applied to prevent parasite infections and/or to maintain the intensity of infection under a threshold compatible with production and the farm economy. These approaches concern either the free-living stages present in the environment or the host parasitic stages. Hence the aim should be: (i) to avoid or to reduce the contact between the host and the infective stages of parasites, (ii) to reinforce the host response against the parasites in order to limit the negative effects of parasitism on animal health and production, and (iii) to kill the parasites within the host and consequently reduce the contamination of environment with parasitic eggs.

Apostolos Aggelidis, of the Aristotle University of Thessaloniki, Greece, reviewed the quality of milk and dairy products from organic sheep and goat systems. He presented studies comparing the nutritional composition between organically and conventionally dairy products. He also discussed the occurrence of pollutants, pesticides and antimicrobial residues as well as the

occurrence of antibiotic resistant bacteria. The performance of assays for detecting antibiotic residues in milk from lactating ewes and goats was also addressed.

Several conclusions became apparent through the comprehensive discussion process that took part at the rest of the morning session on the second day of the workshop:

- The delegates agreed to prepare a research proposal on “safety and authenticity of organically produced milk in sheep and goat systems”. The lack of quantitative and qualitative data on the product was emphasised.
- The existing diversity in both physical and social conditions amongst Mediterranean countries could be an obstacle for technology transfer between different regions and countries.
- The implementation of selective treatments against parasitism is essential to avoid the development of resistant parasites. The animal that needs the anthelmintic and not the flock (blind treatment) should be the common approach in organic farms.

Assessment of the results of the workshop and future directions

During the course of the workshop the current state of organic livestock production in Mediterranean countries was discussed in detail. Moreover, information on the whole picture of organic livestock production in Europe was presented. The market situation for organic products from sheep and goat systems was highlighted in detail using case reports from different countries. Both the presentations and the discussion revealed the challenges of diversity in such systems across the Mediterranean region. The differences in physical and social conditions were emphasised whereas specific problems at farm level were identified.

The most common problems restricting the development of organic sheep and goat systems were classified on the basis of their importance. These were mainly structural issues characterising a novel and immature sector of livestock production. The issues of animal health and food safety were identified by all delegates as the most important parameters. Moreover, the lacks of processing facilities, marketing, innovative products as well as qualitative and quantitative data regarding the products of organic sheep and goat production in Mediterranean countries were reported. The workshop served as a platform, which enabled delegates to communicate their experiences concerning the organic livestock in their countries. It enabled delegates to assess the potential for development of the organic sector in these countries and to identify issues requiring further research. One issue was the safety and authenticity of organically produced milk. The need to focus on residues and microbes of produced milk and to develop a database, at European level, was emphasised. It was agreed that the delegates would work towards preparing a proposal for a research project on the later theme.

The publication of the final report marks the end of the EW06-065 award for the exploratory workshop funded by the ESF. During workshop, much information and knowledge has been exchanged. It remains a challenge to continue this networking process between the delegates and to expand it to others in different countries in a way that will enable the dissemination of the outcomes as well as the transfer of technical information. New ideas and topics for research have been debated and this has proven to be of great value to all participants.

Workshop Final program

Saturday 16 June 2007

ESPERIDES HALL, SUN BEACH HOTEL

Morning Session

Moderator: Dr Paschalis Fortomaris

08:45 – 09:15 Registration of participants

09:15 – 09:30 Presentation of the European Science Foundation (ESF)

Professor Constantinos Doukas

ESF Standing Committee for Life, Earth and Environmental Sciences

09:30 – 10:00 A review of knowledge: Current research on organic livestock production in the EU

Dr Mette Vaarst

10:00 – 10:30 Sheep and goat production in the EU

Professor Michel de Rancourt

10:30 – 10:45	Coffee break
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10:45 – 11:15	Advantages and disadvantages of organic dairy sheep and goat production systems in the Mediterranean region
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Assistant Professor Georgios Arsenos

11:15 – 11:45	Varieties of organic products from dairy sheep and goat production systems in the Mediterranean region
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Associate Professor Andrea Martini

11:45 – 13:00	Discussion
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13:00 -14:30	Working Lunch
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Afternoon Session

14:30 - 16:00 Two Working groups

16:00 – 17:00 Reports of the working groups followed by discussion

17:00 – 19:00 Personal time

19:00	Workshop main Dinner
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Sunday 17 June 2007

ESPERIDES HALL, SUN BEACH HOTEL

Morning Session

Moderator: **Dr Elias Papadopoulos**

09:00 – 09:30 Alternative strategies for the control of parasites in organic sheep and goat production systems in the Mediterranean region

Dr Herve Hoste

09:30 – 10:00 Quality of milk and dairy products from organic sheep and goat production systems

Lecturer Apostolos Aggelidis

10:00 – 10:15	Coffee break
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10:15 – 10:45	Native breeds sustainability in Organic sheep and goat production in Mediterranean countries Dr Mark Causon (presented by G.Arsenos)
10:45- 13:00	Discussion of research proposals – future actions Coordinator: Dr Mette Vaarst
13:00 -14:30	Lunch
14:30 - 15:00	Draft presentation of workshop outcomes End of workshop – depart of participants

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Statistical information on participants

In total, fifteen (15) delegates from seven (7) different countries attended the workshop. Their age ranged from 28 years up to 58 years. The host Country (Greece) was represented by 5 delegates followed by France with three delegates and Italy with two. All other countries had one delegate. One third of the delegates (five delegates) were women scientists. All the delegates were holders of a PhD degree and were either working in academia or in research institutes.