Issues and challenges for animal fibre in Europe: A view of EAAP AFWG (Animal Fibre Working Group)

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Abstract

Animal fibre, in the form of the natural product, “wool”, is a neglected and socially under-recognised renewable natural resource in EU27. Its production is substantial at 186,000 tonnes of raw wool (FAO) for 62m breeding sheep alone (Eurostat). To this may be added smaller amounts from goats (mohair, cashmere) and South American camelids (alpaca, vicuña). Relevant biological issues include (i) environmental costs from enteric methane and nitrogenous greenhouse gas emissions and (ii) requirement for dietary nutrients, calculated at 45 million tonnes annually (2kg/animal/day). Wool has potential to improve returns to offset these costs. Sociological issues concern lack of social recognition, where wool is also not recognised in the Common Agricultural Policy, low prices and frequent unprofitability. These are associated generally, with increasing urbanisation and competition with petrocarbon-based artificial fibres. Technical issues relate to frequent poor quality and lack of uniformity in post-harvest collection and sorting. Challenges include enhancing quality by improving understanding of wool biology, animal genetics and husbandry, and technology of processing in the context of development of existing and novel products. An additional challenge is for the EAAP AFWG to expand its current successful scientific connections both within and outwith Europe. The aim will be to benefit from knowledge and expertise across scientific disciplines, in a global environment, for transfer to animal fibre production in Europe. This process is ongoing.

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EAAP Animal Fibre Working Group (AFWG)

Background

• Est. 186,000 tonnes of raw sheep wool (62m breeders) in EU28
• Plus post-slaughter "pulled wool"
•Smaller quantities from goats (mohair, cashmere), rabbits (angora) and South American camelids (SAC, alpaca)

Issues 1. *Environmental Impact*
•Cost/benefit impacts marginal to other products; milk/meat...
•Life cycle analysis not available, but issues include:
• Contribution to impacts of animals on pasture, soil, water, on intensive or extensive land.
•Costs
- (i) dietary nutrients (ca. 45 mtonnes/year)
(ii) Greenhouse gases (GHG: carbon dioxide, methane ,N oxides
•Benefits
•(i) fibre (keratin-proteins)
•(ii) Replacement of petrocarbons

... To offset these costs, wool should not be wasted....

Issues. 2. *Economics/ Politics*
•Potential sheep raw wool economic value; €250m+ "but poorly utilised"

•Prices, low and frequently loss-making... poor quality of product

•Production chain , marketing and record-keeping, variable among countries

•Small Production from higher value goat, SAC and rabbit

•No CAP recognition

Challenges 1. EU28 recognition by

Encouraging political aspiration
•Obtaining recognition by the CAP (Common Agricultural Policy)

Challenges 2. Improve quality and sustainability by eg;
•Developing effective production and husbandry

• Exploiting new multipurpose breeds and "Easycare" systems for fibre

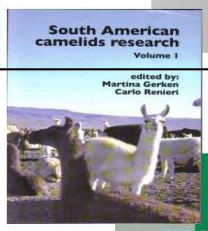
• Increasing knowledge of hair follicle biology
• Applying new genetic tools for breeding

Challenges 3. Improve production chain by;
•Developing techniques to evaluate wool quality on- and off- farm

• Improving collection and marketing

•Sharpening integration of processing and end-user and promotion interests

• Developing novel end-products in eg, textile and biomedical applications



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Conclusions:
EAAP AFWG recognises:
•animal fibre as a valuable product with potential to offset environmental costs of animal production
It presents a view for action :
•To improve husbandry, fibre collection, processing systems,
•To enhance quality based on genetics, breeding and biology

• To better coordinate science and production (eg EC COST applications - currently unsuccessful)

• To seek support from the Animal Science community for CAP acceptance of wool as a recognised agricultural product