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## Opportunities to improve value and utilization of sustainable animal fibre production in Europe

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**Opportunities to improve value and utilization of sustainable animal fibre production in Europe**

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The natural 'wool' product of farmed fibre-bearing animals is underutilised in Europe. It is a natural product of domesticated ruminant/pseudo-ruminants such as sheep (wool), and small numbers of goats (mohair, cashmere) and South American camelids (SAC, alpaca). The scale of production is substantial. For the major animal species, sheep and 62 m breeding ewes (Eurostat) alone, we can estimate up to 150,000 tonnes of raw wool. Production, marketing and record-keeping vary among countries. Wool prices are low and frequently unprofitable. Production of higher value goat and SAC fibres is small by comparison. Chemical outputs of production include fibre (keratin-based protein) milk, meat and greenhouse gases (GHG: carbon dioxide, methane and nitrogen oxides). The specific contribution of fibre to GHG synthesis requires evaluation. Better sustainability may be attained by more effective production, typically achieved by improvements in husbandry, knowledge of hair follicle biology and regulation, application of new genetic tools for selection and breeding and development of more desirable end-products. The role of newly developing commercial breeds and cross breeds, and husbandry such as 'easy care' systems requires attention. The production chain may also be enhanced by development of new techniques for evaluation of wool quality on-farm, improved collection and marketing systems and better integration of processing and end-user and marketing interests.

**Quantitative variation of melanins in alpaca**

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The amount of melanin pigments was investigated in 95 Peruvian alpaca, representative of six different fleece colours, by means of spectrophotometric assays: SpEM (Spectrophotometric Eumelanin), SpPM (Spectrophotometric Pheomelanin), SpASM (Spectrophotometric Alkali Soluble Melanin), and SpTM (Spectrophotometric Total Melanin). It was found that these melanin pigments were suitable for identifying three homogeneous groups, each consisting of two closely related colours. A low, an intermediate, and a high amount of SpASM, SpTM, and SpPM characterise pinkish grey and light reddish brown, brown and reddish brown, dark reddish brown and black fleeces, respectively. SpEM and SpTM provide a further split within this latter group; high concentration of these pigments distinguish black fleece from dark reddish brown. From this preliminary survey it results that the usual fleece colour classification, based on about 22 different colours, should be reviewed, and a new one may be proposed on the base of the objective parameter, amount of melanin pigments.

# **Book of Abstracts of the 62<sup>nd</sup> Annual Meeting of the European Federation of Animal Science**



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