



HAL
open science

National genetic evaluations in dairy sheep and goats in France

Helene Larroque, Jean-Michel Astruc, Anne Barbat, Francis Barillet, Didier Boichard, Bernard Bonaiti, Virginie Clément, Ingrid David, Gilles Lagriffoul, Isabelle Palhiere, et al.

► **To cite this version:**

Helene Larroque, Jean-Michel Astruc, Anne Barbat, Francis Barillet, Didier Boichard, et al.. National genetic evaluations in dairy sheep and goats in France. 62. Annual Meeting of the European Federation of Animal Science (EAAP), Aug 2011, Stavanger, Norway. Wageningen Academic, Abstract, p. 344, 2011, 978-90-8686-177-4. hal-01193670

HAL Id: hal-01193670

<https://hal.science/hal-01193670>

Submitted on 6 Jun 2020

HAL is a multi-disciplinary open access archive for the deposit and dissemination of scientific research documents, whether they are published or not. The documents may come from teaching and research institutions in France or abroad, or from public or private research centers.

L'archive ouverte pluridisciplinaire **HAL**, est destinée au dépôt et à la diffusion de documents scientifiques de niveau recherche, publiés ou non, émanant des établissements d'enseignement et de recherche français ou étrangers, des laboratoires publics ou privés.

Estimation of breeding values for meat sheep in France

Tiphine, L.¹, David, I.², Raoul, J.¹, Guerrier, J.¹, Praud, J.-P.¹, Bodin, L.², François, D.², Jullien, E.¹ and Poivey, J.-P.^{2,3}, ¹Institut de l'Elevage, 149 rue de Bercy, 75595 Paris Cedex 12, France, ²INRA, UR 631, SAGA, 31320 Castanet-Tolosan, France, ³CIRAD, UMR 112, SELMET, 34398 Montpellier, France; laurence.tiphine@inst-elevage.asso.fr

Reproductive performances of ewes and growth of lambs are registered in the national farm recording system, in order to estimate breeding values of rams and ewes for several traits: prolificacy, maternal ability and growth potential. Estimation of breeding values for prolificacy is based on normal scores of litter size after natural or hormone-induced estrus, considered as two different but genetically linked traits, under BLUP animal model methodology. Maternal ability combines growth between birth and 30 days of age and survival of lambs, each dependant on maternal and direct genetic effects, under BLUP animal model methodology. The evaluation model takes into account the number of lambs suckled thanks to a multiplicative factor (1 for a lamb reared as a single, 0.7 for twin-reared lambs) for the maternal genetic effect. Last trait recorded in farm is growth potential between 30 and 70 days, which is estimated using improved sire model BLUP. Young males are chosen on genetic values of their parents and then evaluated on central stations for growth, conformation and fattening traits. On these individual test stations, genetic evaluation is only made intra test group using animal model, but with limited pedigree information. In some breeds, the best males are then evaluated on progeny test for carcass and slaughter traits. Results obtained on many slaughter traits are presented in graphical spider charts. Currently, important work is being done to evaluate the economic importance of each selected trait. The first step, recently completed, was to model the production systems. We are now going to set up synthetic index at each step of the selection schemes. Furthermore, on-going researches concern parasite resistance, social behavior, fertility and semen production for a potential short or long term inclusion in the national genetic evaluation.

National genetic evaluations in dairy sheep and goats in France

Larroque, H.¹, Astruc, J.M.², Barbat, A.³, Barillet, F.¹, Boichard, D.³, Bonaiti, B.³, Clément, V.², David, I.¹, Lagriffoul, G.², Palhière, I.¹, Piacère, A.², Robert-Granié, C.¹ and Rupp, R.¹, ¹INRA, UR631-SAGA, BP 52627, 31326 Castanet-Tolosan Cedex, France, ²Institut de l'Elevage, BP 42118, 31321 Castanet-Tolosan Cedex, France, ³INRA, UMR 1313 -GABI, 78352 Jouy-en-Josas Cedex, France; helene.larroque@toulouse.inra.fr

In France, breeding schemes in dairy sheep and goats have been oriented for a long time towards the improvement of dairy traits (milk, fat and protein yields, and fat and protein contents). The estimated breeding values (EBV) for these traits are performed using a BLUP repeatability animal model assuming heterogeneous variances and constant variance ratios. In 2010, the evaluations involved 2,128,729 animals and 6,735,408 records from the five dairy sheep breeds, and 2,760,612 animals and 7,273,465 records from the two main goat breeds. These last years, to reduce production costs and take into account also milking labour and animal welfare, EBVs have been carried out for functional traits, i.e. somatic cell score (SCS) for mastitis resistance and udder type traits. These EBVs are computed with the dairy trait model for SCS and a multiple-trait BLUP animal model for type traits. According to the data availability, all these EBVs are not yet computed for all breeds. For the most advanced breeds, a total merit index has been proposed giving more or less the same weight for production and functional traits. The short-term objective is to implement genetic evaluations for SCS in all breeds and to update the breeding objectives accordingly. On-going researches on genetic evaluations concern reproduction traits, milking speed, longevity, milk production persistency and once-daily-milking ability. The availability for sheep, and soon for goats, of a pangenomic high density SNP chip allows considering genomic selection programs. In Lacaune dairy sheep breed, a life-size test of genomic selection is in progress based on genomic estimated breeding values (GEBV) for all traits with a GBLUP method. First results are presented in other papers at this congress.

Book of Abstracts of the 62nd Annual Meeting of the European Federation of Animal Science



**Book of abstracts No. 17 (2011)
Stavanger, Norway
29 August - 2 September 2011**