



Applied Sheep and Goat Genetics

Organised by a standing committee: YES

Meeting information

Date: 11th July 2019

Time: 14:30 – 18:15

Number of participants: 50-70

Chair

Name: Gesine Lühken

Affiliation: Department of Animal Breeding and Genetics, Justus Liebig University of Giessen, Germany

Contact email: Gesine.Luehken@agrar.uni-giessen.de

Agenda

14:30-15:00 OP157 Invited Workshop Presentation: Adapt Map project: Exploring worldwide goat diversity and adaptation (L. Colli)

15:00-15:15 OP158 Flock54: A new targeted marker panel for the sheep industry (B. Murdoch)

15:15-15:30 OP159 Effect of genotyping strategies in the sustained genetic gain across multiple generations of selection using ssGBLUB (M. Sanchez-Mayor)

15:30-15:45 OP160 Genome-wide association with footrot in hair and wool sheep (S. N. White)

15:45-16:00 OP161 Genomic background of heat stress in Assaf sheep (M. J. Carabano)

16:00-16:30 Coffee/Tea Break

16:30-16:45 OP162 Functional fertility genomics in sheep (*Ovis aries*) (K. Pokharel)

16:45-17:00 OP163 Genetic diagnosis of sex chromosome aberrations in sheep based on parentage test by microsatellite DNA and analysis of X- and Y-linked markers (J. A. Bouzada)

17:00-17:15 OP164 Selection signatures in goat breeds reveal the molecular basis for six different coat color phenotypes (J. Henkel)

17:15-17:30 OP165 Polled intersex syndrome (PIS) in goats – Nanopore sequencing revealed a complex structural variant and made it possible to devise a simple genetic test for identification of intersexual goat (R. Simon)

17:30-17:55 Sheep and goat CT discussion (A. Dalkilic, A. Martinez, G. Lühken)

17:55-18:10 Election of new committee members

Summary of the meeting

All presentations were given as scheduled. The different topics were nicely presented and interesting points were discussed by the auditorium.

The colleagues in charge for the comparison tests (sheep CT: Aylin Dalkilic, Labogena, France; goat CT: Amparo Martinez, University of Cordoba, Spain) presented data regarding participation, error rates and problems with single markers.

The following decisions were made (no votes against):

1) Decisions about handling discordant results of problematic markers: **Sheep INRA172** and **INRA005**, **goat McM527**. Details see under: Comparison tests for sheep/goat, comments (issues arising).

2) In 2020/21, STR comparison tests for both sheep and goats will be conducted. The participants were grateful to the two volunteering duty labs (see additional information about future CTs below).

3) On their business meeting in Lleida 2019, members of the “Applied genetics and genomics in other species of economic importance” committee volunteered to take responsibility for the sheep and goat comparison tests in the future, as many other comparison tests are already handled by this committee. This suggestion was accepted. Consequently, it was decided to apply for changing the name of the current committee from “Applied Genetics in Sheep and Goats” to “Small Ruminant Genetics and Genomics”.

Committee chair (the new chair)

Chair: Meng-Hua Li
Term of service: 2019-2023 (2 nd)
Affiliation: Institute of Zoology, Chinese Academy of Sciences, Beijing, China
E-mail address: menghua.li@ioz.ac.cn

Committee members (the new committee)

Other members	Term of service	E mail address
Rebecca Simon (Co-Chair)	2019-2023 (1 st)	Rebecca.Simon@agrar.uni-giessen.de
Bengi Cinar Kul	2019-2023 (2 nd)	bkul@ankara.edu.tr
Aylin Dalkilic	2019-2023 (1 st)	aylin.dalkilic@labogena.fr
Sandrine Geniez	2019-2023 (1 st)	genomique@aveyron-labo.fr
Michelle Moussel	2019-2023 (1 st)	Michelle.Moussel@usda.gov
Xiaolong Wang	2019-2023 (2 nd)	xialongwang@nwsuaf.edu.cn

COMPARISON TEST FOR SHEEP (2018-2019) YES

Duty laboratory

Contact person: Yvez Agez
Affiliation: Labogena, France
E-mail address: Yvez.Agez@labogena.fr

Comments (issues rising)

INRA172: Allele 126 was wrongly genotyped as 122 by some labs. However, it has been decided in 2012 and 2014 to call this allele as 126. This information will be included in the STR panel table now. A second allele of this marker caused problems, as different labs genotyped it as 138 or 140. No decision was possible on the “right” size.

Due to the multiplicity of problems with this marker, it was decided not to count wrong results of this marker as error for the CT 2018/19.

INRA005: It was not possible to decide if allele 113 is a regular allele or not. Moreover, many labs did not identify allele 133 in two samples. Finally, allele 129 seemed to cause problems when occurring together with allele 127.

Due to the multiplicity of problems with this marker and as these problems occurred for the first time, it was decided not to count wrong results of this marker as error for the CT 2018/19.

List of recommended markers with primer information

Marker	Forward primer sequence (5'-3')	Reverse primer sequence (5'-3')
AMEL	CAGCCAAACCTCCCTCTGC	CCCGCTTGGTCTTGTCTGTTGC
CSRD247	GGACTTGCCAGAACTCTGCAAT	CACTGTGGTTTGTATTAGTCAGG
ETH152	TACTCGTAGGGCAGGCTGCCTG	GAGACCTCAGGGTTGGTGATCAG
INRA005	TTCAGGCATACCCTACACCACATG	AAATATTAGCCAACTGAAAACCTGGG
INRA006	AGGAATATCTGTATCAACCGCAGTC	CTGAGCTGGGGTGGGAGCTATAAATA
INRA023	GAGTAGAGCTACAAGATAAACTTC	TAACTACAGGGTGTTAGATGAACTC
INRA063	GACCACAAAGGGATTTGCACAAGC	AAACCACAGAAATGCTTGGAAG
INRA172	CCAGGGCAGTAAAATGCATAACTG	GGCCTTGCTAGCCTCTGCAAAC
MAF065	AAAGGCCAGAGTATGCAATTAGGAG	CCACTCCTCCTGAGAATATAACATG
MAF214	AATGCAGGAGATCTGAGGCAGGGACG	GGGTGATCTTAGGGAGGTTTTGGAGG
McM042	CATCTTTCAAAGAAGACTCCGAAAGTG	CTTGAATCCTTCCTAACTTTCGG
McM527	GTCCATTGCCTCAAATCAATTC	AAACCACTTGACTACTCCCAA
OarFCB20	GGAAAACCCCATATATACCTATAC	AAATGTGTTTAAGATTCCATACATGTG

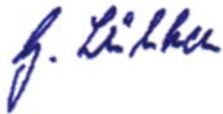
Duty laboratory for the next comparison test with contact details

Contact person: Agata Piestrzynska-Kajtoch

Affiliation: National Research Institute of Animal Production, Laboratory of Molecular Genetics, Balice, Poland

E-mail address: agata.kajtoch@izoo.krakow.pl

SIGNATURES



Gesine Lühken

Chair



Yvez Agez

Duty laboratory

COMPARISON TEST FOR GOAT (2018-2019) YES

Duty laboratory

Contact person: Amparo Martinez

Affiliation: Laboratorio de Genética Molecular Aplicada, Animal Breeding Consulting, S.L., Spain

E-mail address: amparomartinezuco@gmail.com

Comments (issues rising)

McM527: It was not possible to determine the correct size of an allele (155, 157 or 159). For the same marker, it was not possible to decide if allele 139 or 145 was correct.

Due to the multiplicity of problems with this marker and as these problems occurred for the first time, it was decided not to count wrong results of this marker as error for the CT 2018/19.

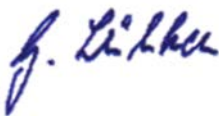
List of recommended markers with primer information

Marker	Forward primer sequence (5'-3')	Reverse primer sequence (5'-3')
CSRD247	GGACTTGCCAGAACTCTGCAAT	CACTGTGGTTTGTATTAGTCAGG
ILSTS008	GAATCATGGATTTTCTGGGG	TAGCAGTGAGTGAGGTTGGC
ILSTS19	AGGGACCTCATGTAGAAGC	ACTTTTGGACCCTGTAGTGC
ILSTS87	AGCAGACATGATGACTCAGC	CTGCCTCTTTTCTTGAGAGC
INRA005	TTCAGGCATACCCTACACCACATG	AAATATTAGCCAACCTGAAAACCTGGG
INRA006	AGGAATATCTGTATCAACCGCAGTC	CTGAGCTGGGGTGGGAGCTATAAATA
INRA023	GAGTAGAGCTACAAGATAAACTTC	TAACTACAGGGTGTAGATGAACTC
INRA063	GACCACAAAGGGATTTGCACAAGC	AAACCACAGAAATGCTTGGAAAG
MAF65	AAAGGCCAGAGTATGCAATTAGGAG	CCACTCCTCCTGAGAATATAACATG
McM527	GTCCATTGCCTCAAATCAATTC	AAACCACTTGACTACTCCCCAA
OarFCB20	GGAAAACCCCATATATACCTATAC	AAATGTGTTTAAGATTCCATACATGTG
SRCRSP23	TGAACGGGTAAAGATGTG	TGTTTTTAATGGCTGAGTAG
SRCRSP5	GGACTCTACCAACTGAGCTACAAG	TGAAATGAAGCTAAAGCAATGC
SRCRSP8	TGCGGTCTGGTTCTGATTTAC	CCTGCATGAGAAAGTCGATGCTTAG

Duty laboratory for the next comparison test with contact details

Contact person: Clementine Rodellar
Affiliation: Laboratorio de Genética Bioquímica (LAGENBIO). University of Zaragoza, Spain
E-mail address: (rodellar@unizar.es)

SIGNATURES




Gesine Lühken

Amparo Martínez

Chair

Duty laboratory