



ISAG

CONFERENCE 2014, Xi'an, China

Applied Genetics in Sheep and Goats
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Organised by a standing committee **yes**

Date and meeting time: 1st August 2014, 10:15-12:30 am

Chair: Gesine Lühken (Gesine.Luehken@agrar.uni-giessen.de)

Agenda / programme

Time	Presenter	Presentation topic
10:15	Gesine Lühken	Welcome, presentation of workshop agenda, inquiry for additional topics
10:20	Brian Dalrymple	The sequence of sheep genome, insights on the distant past, the recent past and the near future
10:50	Xiaolong Wang	Whole-genome pooling re-sequencing uncovers selective loci among goat populations
11:05	Alena Svitakova	Polymorphism of LPL gene and its effect on milk production traits in Czech dairy goat
11:20	Guangxian Zhou	Integrating miRNA and mRNA expression profiling uncovers miRNAs underlying fat deposition in sheep
11:35	Niel Karrow	Identification of chromosomal regions influencing cortisol responses in sheep
11:50	Clementine Rodellar	Presentation and discussion of sheep comparison test results
12:05	Gesine Lühken	Discussion about next CTs, including SNP-based parentage testing
12:15	Gesine Lühken	Election of committee members

Number of participants at meeting: approx. 170

Summary of the meeting including votes, decisions taken and plans for future conferences

1. Welcome

Gesine Lühken welcomed all participants for the 2014 workshop and asked for additions or changes to the agenda. No additions or changes were suggested.

2. Oral presentations

Oral presentations were given following the agenda. The interesting studies and results were discussed by the auditorium.

3. Sheep comparison test 2013-14

Sheep comparison test 2013-14 conduction and results were presented by Clementine Rodellar (Zaragoza, Spain, duty lab). Cecilia Penedo (VGL-UCDavis, USA, computing lab) provided compiled test results.

For the sheep comparison test 2013-14, 20 DNA samples (each sample 40 µl, concentration 50 ng/µl, Wizard genomic DNA purification kit, Promega) were sent to the participating labs at the end of October 2013. A reference sample was included (OCT6).

The ovine marker panel comprised 12 STRs and 1 sex marker (AME). The test included a parentage question.

39 labs applied for participation, 9 of these labs participated for the first time. Results were received from 29 labs.

16 out of 29 labs (55 %) tested the full marker panel. 28 out of 29 labs (97 %) correctly answered the parentage question.

Marker accuracy:

Marker ID	Count of Genotypes	Genotype Errors	Error Rate	Marker Accuracy
AME	440	3	0.007	99%
McM42	460	8	0.017	98%
MAF065	560	13	0.023	98%
INRA023	539	19	0.035	96%
OarFCB20	558	23	0.041	96%
INRA172	420	18	0.043	96%
INRA063	540	27	0.050	95%
INRA005	500	28	0.056	94%
INRA006	480	30	0.063	94%
CSRD247	579	40	0.069	93%
ETH152 (D5S2)	577	40	0.069	93%
MAF214	500	44	0.088	91%
McM527	560	50	0.089	91%

Mean marker accuracy was 95 %, therefore lower than in comparison test 2011-12. The higher error rate was not fully related to “new” labs. Results would have been slightly better if 2 labs had not switched 2 samples each.

Marker INRA172 showed some lingering problems with the 126 allele and rounding. Previously, the allele 122 was renamed 126 based on sequencing results. This was approved during the last workshop in Cairns, Australia (2012).

Most problems with marker MAF214 related to rounding at upper end.

For marker McM527, results did not conform to the reference genotype. Few labs had many errors for this marker.

There was no suggestion for changing the ovine marker panel.

The auditorium thanked Clementine Rodellar and Cecilia Penedo for their great jobs as duty and computing labs.

4. Plans for next ovine and caprine comparison tests

Gesine Lühken passed some information from the standing committee and workshop chair meeting, which was held on 28th of July 2014 in Xi' An, to the auditorium:

- A liability statement for future comparison tests will be drafted. Institutional members which want to take part in future comparison tests are suggested to check the conditions of these liabilities with their institutional lawyers.

- It is planned that comparison test results can be reported online and that results certificates can be downloaded in the future. FASS may serve as computing lab for all comparison tests.
- There will be a switch of the ISAG conference years (2016, 2017, 2019). This has to be kept in mind when planning future comparison tests.

Gesine Lühken led a discussion about next ovine and caprine comparison tests. The results of this discussion were:

I. Comparison tests will be conducted for sheep and goats in 2015-16. In 2016, it will be decided if there will be also comparison tests in 2017 and/or in 2019.

II. For goats, only STR markers will be tested (goat STR panel used in 2011-12). For sheep, STR markers will be tested. Additionally, it will be an attempt to offer SNP marker testing in sheep for interested labs.

III. The following people volunteered for

- duty lab sheep comparison test 2015-16: Clementine Rodellar (Zaragoza University, Spain)
- assistance with introduction of SNPs in sheep comparison test 2015-16: Deanne Waine (AGL, Australia)
- duty lab goat comparison test 2015-16: Félicie Lahalle (LABOGENA, France)
- computing lab for sheep and goat comparison test results 2015-16 (only in the case that this will not be adopted by FASS until 2016): Cecilia Penedo (University of California, USA)

5. Election of committee members

The actual committee members Rosina Fossati, Gesine Lühken, Clementine Rodellar and Stephen White were re-elected to serve for a further period in the committee (2014-19).

After their nomination and short introduction, the following 5 new committee members were elected by the auditorium for the period of 2014-19:

Xiaolong Wang, Félicie Faucon-Lahalle, Bengi Cinar Kul, Mohammad Hossein Moradi, Menghua Li.

6. Closing of workshop and short business meeting of committee members

The workshop ends at 12:30.

Gesine Lühken was elected as chair by the other committee members.

Committee members (the new committee)

Chair	term of service	E mail address:
Gesine Lühken	2014-19	Gesine.Luehken@agrar.uni-giessen.de
Other members	term of service	E mail address:
Rosina Fossati	2014-19	fossati@genia.com.uy
Mohammad Hossein Moradi	2014-19	hoseinmoradi@ut.ac.ir
Bengi Cinar Kul	2014-19	bkul@veterinary.ankara.edu.tr
Félicie Lahalle-Faucon	2014-19	felicie.lahalle-faucon@jouy.inra.fr
Meng-Hua Li	2014-19	menghua.li@ioz.ac.cn
Clemetine Rodellar	2014-19	rodellar@unizar.es
Xiaolong Wang	2014-19	xiaolongwang@nwsuaf.edu.cn
Stephen White	2014-19	swhite@vetmed.wsu.edu

COMPARISON TEST (2013-2014)	yes	
Number of enquiries – requests for consignment forms		39
Number of participants receiving samples		39
Number of samples		20
Number of participants reporting results		29

Duty laboratory: Clementine Rodellar, rodellar@unizar.es

Comments (issues rising) see point 3 of “summary of the meeting”

Computing Laboratory: Cecilia Penedo, mctorrespenedo@ucdavis.edu

Comments: see point 3 of “summary of the meeting”

List of recommended markers with primer information

Sheep STR markers

Marker	Forward primer sequence (5'-3')	Reverse primer sequence (5'-3')
AMEL	CAGCCAAACCTCCCTCTGC	CCCCTTGGTCTTGTCTGTTGC
CSRD247	GGACTTGCCAGAACTCTGCAAT	CACTGTGGTTTGTATTAGTCAGG
ETH152	TACTCGTAGGGCAGGCTGCCTG	GAGACCTCAGGGTTGGTGATCAG
INRA005	TTCAGGCATACCCTACACCACATG	AAATATTAGCCAACTGAAAAGTGGG
INRA006	AGGAATATCTGTATCAACCGCAGTC	CTGAGCTGGGGTGGGAGCTATAAATA
INRA023	GAGTAGAGCTACAAGATAAACTTC	TAACTACAGGGTGTAGATGAACTC
INRA063	GACCACAAAGGGATTTGCACAAGC	AAACCACAGAAATGCTTGAAG
INRA172	CCAGGGCAGTAAAATGCATAACTG	GGCCTTGCTAGCCTCTGCAAAC
MAF065	AAAGGCCAGAGTATGCAATTAGGAG	CCACTCCTCCTGAGAATATAACATG
MAF214	AATGCAGGAGATCTGAGGCAGGGACG	GGGTGATCTTAGGGAGGTTTTGGAGG
McM042	CATCTTTCAAAGAAGTCCGAAAGTG	CTTGAATCCTTCTAACTTTTCGG
McM527	GTCCATTGCCTCAAATCAATTC	AAACCACTTGACTACTCCCCAA
OarFCB20	GGAAAACCCCATATATACCTATAC	AAATGTGTTTAAGATTCCATACATGTG

Goat STR markers

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	AAATATTAGCCAACTGAAAAGTGGG
INRA006	AGGAATATCTGTATCAACCGCAGTC	CTGAGCTGGGGTGGGAGCTATAAATA
INRA023	GAGTAGAGCTACAAGATAAACTTC	TAACTACAGGGTGTAGATGAACTC
INRA063	GACCACAAAGGGATTTGCACAAGC	AAACCACAGAAATGCTTGAAG
MAF65	AAAGGCCAGAGTATGCAATTAGGAG	CCACTCCTCCTGAGAATATAACATG
McM527	GTCCATTGCCTCAAATCAATTC	AAACCACTTGACTACTCCCCAA
OarFCB20	GGAAAACCCCATATATACCTATAC	AAATGTGTTTAAGATTCCATACATGTG
SRCRSP23	TGAACGGGTAAAGATGTG	TGTTTTTAATGGCTGAGTAG
SRCRSP5	GGACTCTACCAACTGAGCTACAAG	TGAAATGAAGCTAAAGCAATGC
SRCRSP8	TGCGGTCTGGTTCTGATTTAC	CCTGCATGAGAAAGTCGATGCTTAG

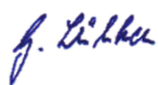
Duty laboratory for the next comparison test with contact details

- sheep: Clementine Rodellar, University of Zaragoza, Spain (rodellar@unizar.es)
- goat: Félicie Lahalle- Faucon, LABOGENA, France (felicie.lahalle-faucon@jouy.inra.fr)

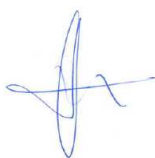
Computing laboratory for the next comparison test with contact details

- Cecilia Penedo (mctorrespenedo@ucdavis.edu) OR will be done by FASS in the future

SIGNATURES



Gesine Lühken
Chair



Clementine Rodellar
Duty laboratory



Cecilia Penedo
Computing laboratory