

Non official Chicken DNA genotyping comparison test

The first meeting of a (non official) chicken microsatellite genotyping comparison test was held at the Carnegie room, Heriot Watt University, on Wednesday 28th July, from 2 to 3 pm, during 32nd ISAG Conference.

The Chairman was Dr. Emiliano Lasagna from University of Perugia (Italy), the co-Chairman was Dr. Steffen Weigend from Friederich-Loeffler-Institut (Germany).

About 35 people attended the workshop. Please find attached the list of the participants.

After welcoming the Chairman firstly highlighted the general aims of a comparison test, and secondly specified the purposes of this workshop; the goal to be achieved is to establish a network between laboratories for which the meeting was considered as starting point. Thereby the following objectives have been addressed:

- ✓ to supply reference chicken DNA samples to those laboratories interested in working with microsatellite markers for genetic characterization in chicken;
- ✓ to support genetic characterization of autochthonous chicken breeds using the same molecular techniques and methods;
- ✓ to deposit all the available data on chicken genetic characterization by microsatellite markers in a common database after publication.

The Chairman then showed all the labs involved in the first non official ring test. Seven labs were involved in the practical and technical analyses, three labs were only interested in the statistical analyses. At this point, the co-Chairman explained the procedure and introduced the results of the first non official chicken comparison test. He firstly showed the list of markers used for this first ring test, and some graphs displaying the number of microsatellites used in each lab and the percentage of correct allele calling of each marker when standard samples were used as reference. The results of this comparison among the labs turned out to be very encouraging, with a high percentage of correct allele scoring among laboratories for most of the markers. The co-chairman also showed a list of papers published on genetic characterization and biodiversity studies, which took advantage of several markers included in the panel used for the first ring test. He reported results of another comparison that has been done between collaborating laboratories

using 28 of the 30 microsatellites. Eight laboratories took part in this analyses, carrying out a comparative study in order to highlight the differences and similarities in genotyping of the same DNA samples. A summary of the results will be circulated by Steffen Weigend as soon as possible.

After this first part the meeting went on with the final discussion, during which all the participants could come out with suggestions, proposals, issues linked to the topic, potential solutions to them, etc. The main aspects which came out from the discussion were:

- microsatellites are still useful for studying chicken genetic diversity. However, there is a growing role of SNP and whole-genome sequence analysis. Based on new technologies, SNP markers are likely to replace microsatellites in the future. Up to now, however, no standardized protocol for the use of SNPs in biodiversity studies has been worked out;
- although scoring of SNP alleles is nearly always unambiguous, the use of standard samples seems to be also advisable;
- possibility to take up a working group composed by all the labs which work on chicken biodiversity studies in order to share samples, data and the information regarding the chicken genetic diversity analysis.

At the end of the session the co-chairman, taking also all the suggestions in to account, proposed to establish catalog listing all the chicken breeds studied by the laboratories up to now, all the STR markers used for the analyses and the availability of DNA samples in these labs (specifying if they are DNA samples or biological samples). Steffen Weigend will suggest a format to collect appropriate information.

Workshop attendants

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