ICAR
International Committee for Animal Recording

Genetic Analysis Task Force

Genetic Analysis Task Force

Marie-Yvonne Boscher
(LABOGENA, Jouy en Josas, France)

Elena Genzini
(Laboratorio Genetica e Servizi, Cremona, Italy)

Wim Van Haeringen
(Dr. Van Haeringen Laboratorium b.v., Wageningen, The Netherlands)

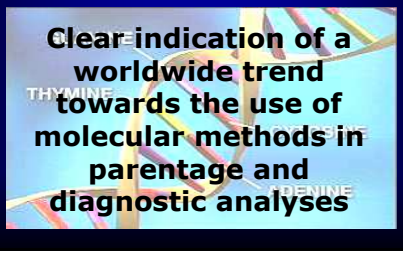
Paolo Ajmone Marsan
(Università Cattolica del S. Cuore, Piacenza, Italy) Coordinator

COMMUNICATION

- Sousse meeting 2004
- ISAG meeting Tokio 2004
- Uppsala meeting 2005
- Electronic discussion
- Conference call

PHASE 0

Questionnaire disseminated thanks to the active participation of ICAR secretariat



PHASE 0

Need for setting standards in the quality of DNA analyses used in international evaluations

Reasonable to continue the task force activity

Aim of setting minimum requirements for ICAR accreditation of DNA labs

PHASE 1

1.1 Identification of a pilot DNA assay and species

1.2 Survey of lab characteristics

1.3 Identification of key features of labs

PHASE I

1.1 **target DNA assay and species**

Bovine parentage with microsatellites

PHASE I

1.2 Survey of lab characteristics

Questionnaire to DNA laboratories

- Education and experience of supervisor and operators
- Procedures for data, storing, retrieving
- Procedure for sample handling
- Equipment and revisions
- National/International certification
- Participation and performance in natl/internatl ring tests
- N. of samples processed per year
- Markers assayed on all samples and PE
- Additional markers assayed in case of need and PE

PHASE I

1.3 Identification of key features

- Lab Identification
- Education and training of supervisor and operators
- Equipment
- Certification
- Participation and performance in ring tests
- Microsatellite markers
- Marker nomenclature

PHASE 2

2.1 Definition of minimum requirements

2.2 Definition of the method of evaluation

PHASE 2

2.1 Definition of minimum requirements

LAB IDENTIFICATION

The applicant should be unambiguously identified and easily contactable:

- Name of the laboratory
- Institution if relevant
- Address and Country
- Reference person

EDUCATION AND TRAINING OF LAB SUPERVISOR AND OPERATORS

Experience is considered a key factor both in data production and in the interpretation of results

- At least a bachelor degree in a scientific discipline for laboratory head/supervisor
- At least 5 years experience in molecular diagnostics for laboratory senior operator

EQUIPMENT

- The type, year of purchase and last revision is to be made available, to check the appropriateness of technologies used and the following of a proper maintenance program ensuring the production of high quality data.
- At least yearly revision
- A personal opinion on the performance of the laboratory set up available is asked to foresee the need for improvements in quality standards.

CERTIFICATION

International certification will become a minimum requirement for ICAR accreditation within 3 years after the approval of these Rules

PARTICIPATION AND PERFORMANCE IN RING TESTS

- The participation in at least two international ring tests is considered a minimum requirement
- Performance thresholds will be decided by the Committee of Experts (considering structure of the ring test and average performance of laboratories in ring test and year)

MICROSATELLITE MARKERS

- microsatellites typed on all animals (marker set I) and additional ones assayed in the case of unresolved parentage (marker set II)
- Minimum requirement is the use on all animals typed of the complete set of 9 microsatellites recommended by ISAG
- An upgrade to a minimum of 11 is envisaged in the short period, with the perspective of further increase

MICROSATELLITE MARKERS

- 500 animals analyzed per year
- Exclusion probability (2 parents and 1 parent) of each marker and marker set is to be declared
- Breed and number of animals used for computations are to be described. ICAR recommends using Holstein as reference when possible
- The ICAR Committee of Experts will evaluate that an appropriate PE is reached for accreditation, on the basis of the population analyzed

MICROSATELLITE NOMENCLATURE

- ISAG nomenclature at least for ISAG markers

PHASE 2

2.2 Definition of the method of evaluation

- Questionnaire
- Committe of experts appointed by ICAR
  - Approves
  - Requires further information
  - Rejects (resubmission possible one year later)

PHASE 3

Extention to a larger set of species/DNA analyses

THANKS!!