

SUGGESTED ACTIONS – CONCLUSIONS AND PROPOSALS FROM DOG HEALTH WORKSHOP 2012

The 1st International Workshop on Enhancement of Genetic Health in Pedigree Dogs

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BREEDING HEALTHIER DOGS -
FROM ATTENTION AND AWARENESS TO ACTION!

Prerequisites and procedures for recognition of breeds and varieties

Background

To a greater extent than in any other domesticated mammalian species dogs have been sub-classified in breeds and varieties (defined by appearance, function etc.) and bred in closed populations because of rules and regulations more so than due to geographic isolation. The number of internationally recognized breeds and varieties has increased dramatically over the last decades. Recognition of new breeds and restrictions for breeding between varieties has commonly resulted in small population sizes which, in turn, may lead to increased levels of inbreeding and in some breeds increased prevalence of genetic disease. In fact, the entire global population size for some breeds is likely too small to enable long term sustainable breeding with respect to genetic variation. The procedures for recognition of breeds should be reviewed to maintain health and vitality in dogs.

Proposal

The cynological organizations are urged to apply stricter regulations for international recognition of breeds. They are strongly recommended:

- not to recognize new breeds created from already existing breeds,
- not to recognize national varieties of already existing breeds as new breeds,
- to counteract restrictions that prevent interbreeding across varieties based on colour, coat, size and function within breeds.

Procedures for application of genetic tools for evaluation of populations to be considered for international recognition should be outlined in collaboration with geneticists. Furthermore, a common international databank for storage of molecular genetic material and data on individual breeds should be encouraged.

Procedures for evaluation of the health status in populations to be considered for international recognition should be outlined in collaboration with the veterinarian profession.

Proposed leader of initial work

It is proposed that an international group representing various stakeholders appointed by FCI Standard and Scientific Commissions will take the lead in further addressing these issues.

Achievements so far

FCI Standard and Scientific commissions have started to outline proposals for new regulations for acceptance of new breeds including, e.g., molecular genetic testing of any population proposed to be recognized, as well as a questionnaire for surveying health status.

The Swedish Kennel Club (SKK) has taken the initiative to assess the global number of dogs of various breeds.



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Harmonization of screening procedures and certifications

Background

In order to monitor and control the incidence of hereditary diseases in pedigree dogs, further development of screening procedures is important. Screening programmes are commonly initiated because of a perceived or known prevalence of a specific condition within a breed or breeds, often noted and brought to attention by veterinary specialists. Currently, phenotypic records from physical exams or diagnostic procedures, e.g., radiographs, as well as results from molecular genetic tests are registered for a variety of canine diseases.

Traditionally, the results from screening programmes are certified nationally and evaluation or comparison of breeding dogs from different countries is difficult because of variation in screening procedures, language barriers etc. Information about the prevalence, inheritance and genetics of diseases for which screening procedures are developed/implemented and, furthermore, the screening procedures themselves may not be appropriately evaluated in terms of accuracy, validity, or cost benefit. Development and harmonization of screening procedures are important for progress in reducing genetic disease and improving dog health.

Proposal

The cynological and veterinary organizations are asked to create a working committee to:

- list, harmonize and validate current and new screening procedures for genetic diseases,
- identify and prioritize issues to put in a database for use in breeding and research,
- suggest a uniform terminology/language/diagnostic codes for use in such a database,
- inform, educate and motivate stakeholders,
- implement screening procedures and breeding programmes in veterinary education,
- initiate and harmonize web-based health questionnaires for dog owners to utilize their experiences of existing or emerging problems within a breed.

This work should be done in close collaboration with international and national representatives for the veterinary profession, geneticists, epidemiologists and other specialists within the field.

Proposed leader of initial work

It is proposed that an international group representing various stakeholders appointed by FCI Scientific Commissions, in collaboration with the World Small Animal Veterinary Association (WSAVA) Hereditary Diseases Committee takes the lead in further processing of these issues.

Achievements so far

The scientific commission of FCI as a starting point have prepared a list and abbreviations in 4 languages for hereditary diseases for which there are current screening programmes.

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Validation and utilization of genetic tests in dog breeding

Background

Developments within the field of molecular genetics have made genetic tests for a large number of traits available to the public. Besides tests for simple recessive traits, an increasing number of tests are identifying genes that affect conditions with a more complex nature, such as cancer, diabetes and various autoimmune diseases. These tests detect “genetic risk factors” that affect or help to predict an individual’s risk of developing the disease. Procedures for validation of genetic tests, technically, as applied to an individual, as well as concerning their application to various populations, are not standardized and too often tests may be launched even in the absence of crucial information.

Proposal

Scientists in the field of population and molecular genetics, in close collaboration with the cynological organizations and the veterinary profession, are asked to:

- outline procedures for technical validation of tests and testing laboratories for molecular genetic tests to be used in screening of dogs intended for breeding including laboratory quality control and new test validation procedures,
- create a site where the scientific community can comment on newly developed genetic tests,
- establish uniform guidelines for sample and dog verification,
- outline guidelines for the proper usage of genetic tests in various populations.

Proposed leader of initial work

It is proposed that an international expert panel, consisting of scientists in the field of population and molecular genetics, is established to take the lead in further processing of these issues. The group should be appointed by FCI Scientific Commission in collaboration with the World Small Animal

Veterinary Association (WSAVA) Hereditary Diseases Committee.

Achievements so far

As a base for this work the WSAVA Hereditary Diseases Committee has established a web-based information resource on available laboratories and molecular genetic tests for dogs and cats <http://www.wsava.org/guidelines/hereditary-diseases>.



Interventions for anatomical soundness and avoidance of extreme phenotypes

Background

The great variety in morphological features in dogs has supported development of extremes in phenotypes. Unfortunate interpretations of or lack of adherence to breed standards, fads and fashion have, in some breeds, resulted in selection of breeding stock with an exaggerated and extreme phenotype. These extreme anatomical features in progenitors and their resulting offspring have repeatedly been shown to be related to a variety of health problems, sometimes so severe as to render individuals physically incapable of work or causing them great suffering in their everyday life. Thus, it is necessary to stress the anatomical soundness of potential breeding dogs. Achieving a balance between preservation of breed-specific appearance and, at the same time improved health is a challenge that requires collaboration between all stakeholders.

Proposal

The Cynological organizations, in close collaboration with representatives for the veterinary profession and geneticists, are urged to review their:

- rules and regulations,
- breed standards,
- education and training of show judges.

Proposed leader of initial work

It is proposed that an international group representing various stakeholders appointed by FCI Standard and Scientific Commissions takes the lead in further processing of these issues.

Achievements so far

The Scandinavian kennel clubs have established a working group to coordinate Breed Specific Instructions (BSI) for show judges as a basis for further work within FCI.



Development of breed-specific breeding programmes on national and international levels

Background

Canine breeding programmes have mainly focused on controlling specific diseases that occur in the dog populations. There is, however, a great variation in the prevalence and relative importance of various diseases across breeds that must be considered in the identification of priorities. This calls for development of breed-specific breeding programmes. As health is not the only trait of importance in dogs the development of broad breeding goals that simultaneously consider all essential traits in the specific breed (e.g., health, behaviour and appearance) is essential. Furthermore, the population structure and genetic variation within the breed need to be considered. Because of the international exchange of breeding stock, international as well as national breed-specific breeding programmes should be encouraged.

Proposal

National breed clubs are encouraged to create breed-specific breeding programmes taking into account the physical and mental health of individuals as well as size and structure of existing populations.

The international and national cynological organizations are asked to assist in the creation of breed-specific breeding programmes on an international level, and to investigate the possibilities for exchange of information enabling genetic evaluations on an international basis.

Proposed leader of initial work

It is proposed that an international group representing various stakeholders appointed by FCI Scientific Commission takes the lead in further processing of these issues.

Achievements so far

A pilot study on opportunities for international collaboration in dog breeding by sharing of pedigree and health data, has been performed by the Swedish University of Agricultural Sciences (SLU), the Swedish Kennel club (SKK) and the Animal Health Trust, UK.

Discussions about possibilities for a joint French, British and Swedish project on international genetic evaluations for the improvement of genetic health in dogs have been initiated.



Selection for behavioural characteristics

Background

Selection for performance and behaviour was the driving force for domestication and is still of utmost importance. Traditionally, dogs have been selected for desired behavioural characteristics, such as hunting or guarding ability. Today, the desired behaviour is more complex due to the dogs' additional role as a companion animal, and dogs are to a great extent euthanized due to behavioural characteristics that are not accepted in the human society of today.

Improvement of dog behaviour requires strategies for definition, measuring and registration of the traits of interest. Currently, testing for desired as well as undesired behaviour is performed in many countries but the assessment schemes as well as the interpretation differ.

Proposal

The cynological organizations are suggested to take an initiative and support the creation of a working group to establish guidelines for terminology and evaluation of behaviour characteristics in dogs.

Proposed leader of initial work

It is proposed that an international group representing various stakeholders appointed by the Swedish Kennel Club (SKK) takes the lead in further processing of these issues.

Achievements so far

The SKK has appointed researchers at Swedish University of Agricultural Sciences (SLU) to create a working group that should pursue these issues further.



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Formation of national and international platforms for collaborative efforts

Background

Various actions are taken worldwide to decrease the prevalence of inherited disorders in pedigree dogs. Because of the increasing exchange of dogs between countries, there is a considerable need for coordination, compilation and critical evaluation of the information available. Currently, several organisations/networks for international collaboration exist, such as FCI. However, a broader platform with the ambition to bring all countries and stakeholders involved in dog health together is lacking. One challenge is the diverse interests and level of advancements by stakeholders at national and international levels. Development of platforms for collaboration on a national level is fundamental for success of a more extensive international collaboration on information resources and breeding guidelines. Furthermore, the outcome needs to be properly communicated to the public to achieve sustainable dog breeding in the future.

Proposal

An international platform for collaboration is highly desirable and great efforts should be made to achieve this. A group that represents key stakeholders (e.g., cynological organisations, the veterinary profession, geneticists, and welfare organizations) should be assembled. This group should:

- represent the common ground and shared goals of the stakeholders,
- support and link the working groups from the Dog Health Workshop together,
- define the next steps necessary to establish an international platform for collaboration.

Proposed leader of initial work

It is proposed that a group appointed by FCI, the Kennel Club (UK) and the Swedish Kennel Club, together with representatives from the US, takes the lead in further processing of this issue.

Achievements so far

The proposal about development of an online information network, presented at the Dog Health Workshop, has been further processed by a working group within FCI. FCI has given the Swedish Kennel Club the mandate to pursue the project further.

