

DBRG One Pager on the Genetic Health and Welfare of Dogs (CFSG Meeting 13 Sept 2019)

Poor genetic health is a critical welfare issue facing purebred dogs. The suffering it causes to a significant proportion of dogs throughout the UK is, in our view, unacceptable in the 21st century. It is a cause of distress for owners both emotional and financial, many of whom feel there is nowhere to turn for help.

Humans have come to admire and expect dog breeds which are distinctive from each other. Differences in size, coat colour, coat texture, differences in head shape, eye shape, eye position, proportion of leg length to back length, etc. Many humans also like dog breeds to be uniform in appearance – to be recognised as this breed or that breed. The appearance is even written down in a ‘breed standard’ and serious breeders strive to breed to that visual ‘perfection.’ Dog breeders and dog owners need to be persuaded to change their minds about this preoccupation.

Each of the 216 breeds registered with the UK Kennel Club (and many more worldwide) is bred within a closed gene pool which causes the proliferation of genetic diseases. All this is known and efforts are being made to provide health screening to reduce the health and welfare impact of these diseases. But however hard we try to reduce or eliminate these diseases, new ones appear. This is the result of breeding within closed gene pools. Given the proliferation of breed-related genetic health problems, it could be argued that there are simply too many breeds. Furthermore new breeds are being added to national registers. We might ask the question, why is there an Irish Setter, Irish Red and White Setter, Gordon Setter, English Setter, when the only difference to a non-specialist is coat colour? Why must an unpopular breed or breed that no longer fulfils its original function be ‘saved’ (for example the Otterhound) A recent paper written by the Kennel Club’s own population geneticist found that out of 152 breeds, 85 (55%) have an EPS of less than 100 dogs and 36 (24%) have an EPS of less than 50. Why isn’t urgent action being taken to remedy these very worrying figures?

Dog breeds are often talked about as if they are separate species. Alarm is expressed when a breed's popularity falls and it may become 'extinct.' Dogs are all one species – *canis familiaris* - and this is a species that is not in danger of extinction. However, it is experiencing an unacceptable burden of genetic diseases, pain, discomfort and reduced lifespan.

The Dog Breeding Reform Group (DBRG) welcomes the measures taken by the Kennel Club and Breed Clubs to improve the health of pedigree dogs. Such measures include: the identification of those breeds which need urgent attention; the requirement that every breed must have a Breed Health Coordinator (BHC); its support of health research; on-line health resources for breeders such as Mate Select and the Coefficient of Inbreeding Calculator; the availability of Effective Population Sizes for some breeds; its support of DNA testing and the Canine Health Schemes. However, these measures alone will not solve the problems.

DBRG recommends that a fundamentally new approach is adopted by breeders and their governing organisations:

RECOMMENDATIONS:

- Strong leadership and an uncompromising approach to dog health and welfare.
- Move away from traditions that are failing dogs and their owners and adopt fresh ideas to drive positive changes for purebred dogs.
- Where health schemes or DNA tests are applicable breeders must use them and not breed from affected dogs. (Carriers of deleterious genes may of course be used if bred to non-carriers)
- Move away from the closed stud book system.
- Breeds which have an effective population size (EPS) of 100 unrelated dogs or lower should undergo a scientifically controlled outcross programme.
- An agreed limit on the number of times any sire may be used for all breeds to reduce the proliferation of deleterious genes.
- No two dogs should be bred whose combined Coefficient of Inbreeding (COI) is greater than 6.5%.

- Combine breeds which differ in more subtle elements such as coat marking or coat texture.
- Merge scarce or unpopular breeds with populations nearest to them in general characteristics.
- Use the principle of assortative mating (mating individuals which are phenotypically similar but unrelated) to become the norm.
- Membership of a breed club should be a requirement for anyone who registers their puppies on a pedigree register. Breed clubs should represent all pedigree breeders.
- Breed club committees should have at least one member to represent dog owners.
- A trusted system in place to deal effectively and sympathetically with owners.

These recommendations are not intended to be an exhaustive list. Canine population geneticists and experienced dog breeders will know of other measures which can be taken.

The points listed have been developed to inspire debate, discussion and action around how best to improve the genetic health of dogs.

References:

Purebred Dog Breeds into the Twenty-First Century: Achieving Genetic Health for Our Dogs. J Jeffrey Bragg 1996

Frequency and distribution of 152 genetic disease variants in over 100,000 mixed breed and purebred dogs, Jonas Donner et al 2019

Inherited defects in pedigree dogs 1: Disorders related to breed standards, Asher et al

Inherited defects in pedigree dogs 2: Disorders that are not related to breed standards, Summers et al