

# Breed Specific Breeding Strategy for the Bloodhound in the United Kingdom

## Background

At the current time The Kennel Club does not require UK breed clubs to produce a breeding strategy for their respective breeds, although the FCI does for breed clubs in their jurisdiction in parts of Europe. However, the Association of Bloodhound Breeders felt it would be beneficial to the Bloodhound breed to set out breeding goals that should be considered when planning a litter, with the intention of maintaining breed characteristics and improving breed health. In addition the Bloodhound has recently been placed by the Kennel Club on the list of 'High Profile Breeds' – we hope this document will be instrumental in removing our breed from this list.

The intention of the Breed Specific Breeding Strategy is not to tell breeders what to do, but is to provide useful data and information to help breeders make informed choices in their breeding plans. The document is aimed primarily at new breeders, as much of this information may be common knowledge to experienced breeders. Before beginning to compile this document, it was important to have data on which to base it, and over the last three years the Association of Bloodhound Breeders has embarked on a series of investigations to better understand the current status of the Bloodhound in the UK.

Step one was to identify the degree of inbreeding and genetic variation within the population. The Animal Health Trust was approached and after discussions over the best direction to proceed, an analysis of five generation pedigrees was carried out to determine the degree of inbreeding in recent times. This was felt more practical than a DNA analysis which could potentially have told us more. Results of this study were published, along with The Animal Health Trust's recommendations, in 2009.

Secondly, a health survey was distributed at the end of 2010 to all ABB members residing in the UK, to determine the chief causes of death amongst hounds, the chief causes of non-routine veterinary treatments, and the extent of any health screening carried out within the current Bloodhound population. This survey is intended to be an ongoing study, but the results of this first sampling, along with the pedigree analysis, have been used as the basis for the Breed Specific Breeding Strategy. The goals of the strategy may change in future as further health questionnaires and health screening results present a more complete picture of the status of the breed.

## What are the aims of the Breed Specific Breeding Strategy?

A breeding strategy, put simply, is the thorough planning of a breeding programme. The principle reference behind the breeding programme for any breed of pedigree dog should be the Kennel Club breed standard, describing the ideal conformation and characteristics that should be targeted, but of course there are further considerations. The following goals should be included in any breeding strategy:

1. The maintenance of genetic variation
2. The ongoing improvement of breed health and longevity
3. The maintenance of the functionality of the breed to perform the job for which it was developed.
4. The selection for mental (temperament) qualities required by modern society
5. The maintenance of the natural reproductive abilities of the breed

## Recommendations of the ABB

It is recognised that in most populations of organisms (those where sexual reproduction takes place), individuals have different gene combinations, essentially making those individual animals different to each other genetically to a greater or lesser extent. Inbreeding will reduce genetic variation considerably. Populations of organisms can exist for long periods of time with little genetic variation, but it will affect that population's ability to adapt to changing circumstances in their environment e.g. disease. In addition high levels of inbreeding can lead to an increase in genetically based disorders and inbreeding depression, which can affect sexual drive, fertility, longevity, intelligence and so on. Genetic variation is required within a population of a domestic breed not only for similar reasons, but also to allow for improvement – without variation there is nowhere for the breed to go, no room for improvement, and all breeders should be aiming to improve their breed.

Edwin Brough, writing at the end of the nineteenth century, recorded that 'the Bloodhound is probably an older and more in-bred breed of dog than any other'. Brough, given that his options were fairly limited, carried out experimental crosses with other breeds and noted that his out-crossings 'recovered stamina'. The war years depleted the population of Bloodhounds and their genetic diversity massively, but since then there have been several key periods of the introduction and re-introduction of genetic material through imported hounds.

Breeders during this time have adopted different breeding strategies – some employing line breeding techniques and maintaining fairly closed gene pools\*, others seeking to maintain some of the rarer bloodlines and out-crossing to unrelated individuals frequently.

To understand where this has left the current UK population it was important to employ the help of The Animal Health Trust. Their report, following the analysis of 'the complete pedigree records for the current UK Bloodhound population' was published in 2009 and concluded the following:

1. Bloodhound breeders have within the last decade largely avoided high levels of in-breeding by making use of a number of imported hounds in breeding programmes (The Kennel Club's Mate Select programme states that the average in-breeding co-efficient for the breed is 5.7%, which is respectably low).
2. There is some evidence of the over-use of popular sires i.e. certain stud dogs used on several bitches and having rather a large effect on the overall genetic variation of the population.

Goals:

- To increase the number of sires and dams used, rather than relying on popular sires. This could involve seeking out dogs that reside in pet homes that meet the breeders requirements in all other respects, rather than relying solely on hounds kept by breeders
- To continue to make use of imported bloodlines, ensuring best use is made of imported hounds providing they meet all other requirements, and seeking alternative bloodlines not yet represented in this country.

\*The Kennel Club will no longer register litters between parents and offspring, and between siblings.

Unlike many breeds, at present there are no breeding restrictions on Bloodhounds (ie The Kennel Club does not require individual hounds to pass any particular health

screens before offspring of that hound can be registered). We hope to keep it that way. The breed has, however, been subject to some criticism for perceived eye problems, skin issues, and poor movement.

A breed health survey was issued to ABB members residing in the UK with the intention of determining the extent of these problems, and in addition the chief causes of death and non-routine vet visits. In addition the survey set out to determine the level of health screening being carried out. The following recommendations are based on the results of that survey.

#### Bloat and Cancer

Bloat and cancer continue to be the principle causes of death within the UK Bloodhound population. Our understanding of the causes of these conditions, and their mode of inheritance, remains limited. However, common sense suggests that hounds who have had bloat or have recovered from cancer treatment should not be bred from.

#### Hip Dysplasia

Hip dysplasia is not the major concern in Bloodhounds that it is in many other breeds. Nevertheless it does exist, and poor hind movement is seen which may or may not be due to HD. Hip dysplasia is recognised as having a genetic basis, but also is known to have an environmental influence as well. Breeders may not be able to have a huge influence on how a puppy is reared once it leaves them, but can do their best to ensure breeding stock are free of the condition.

The recent ABB health survey, if a representative sample, identified that approximately 4% of the sample population are currently hip scored. The average hip score of hounds alive at the time of the 2010 survey was 16.8, with only one hound over the Kennel Club's recorded average for the breed of 21 (both hips). However, none of the sampled hounds could be regarded as having 'excellent' or 'good' hips, with 60% showing 'fair' hips and 40% showing a 'borderline' degree of dysplasia. To gain a better understanding of the incidence in hip dysplasia in the UK population it is hoped to increase the degree of hip scoring conducted, and reduce the average score.

Goal:

- To increase the level of hip scoring from 4% of the population to 15% of the population in 5 years
- To continue to reduce the average hip score for the breed over the next 5 years by not breeding from high scoring hounds

#### Elbow Dysplasia

The ABB health survey 2010 identified 12% of the sample of UK based bloodhounds had been elbow scored, with an average score of 0.86 (1). 33% of the sample were scored as normal, 47% were scored as showing mild dysplasia, and 20% were scored as showing moderate dysplasia, with no hounds scoring as severely affected by dysplasia.

Incidences of elbow dysplasia, (especially UAP, Un-united Anconeal Process) are probably more prevalent in the breed than is the case with hip dysplasia (though our survey did not show this due to a very small number of hounds hip scored relative to numbers elbow scored). Due to this it is desirable to increase the number of hounds elbow scored.

Goal:

- To increase the level of elbow scoring from an estimated 12% of the population of UK based Bloodhounds to 20% of the population in the next 5 years.

- To reduce the average elbow score over the next 5 years by not breeding from high scoring hounds

#### Skin Disorders

Whilst skin issues, including atopic dermatitis, eczema etc. do still occur in bloodhounds, careful breeding and the reduction in the degree of wrinkle exhibited in the modern bloodhound, together with modern parasite treatments, have reduced the incidence of skin issues significantly. The 2010 ABB health survey identified only 1.6% of the sample as having had veterinary treatment for skin disorders in the previous 12 months. It should be the aim of all breeders to ensure this statistic remains this low or lower.

Goal:

- No hound receiving treatment for any chronic skin disease should be used in a breeding programme.

#### Eye disorders

The 2010 ABB health survey identified only 2 hounds (1.6%) of the Bloodhounds in the sample were receiving veterinary treatment for eye disorders, one of these cherry eye and the other conjunctivitis. The results of eye surveys, where 8% of the sample population had been screened, suggest there are still some more serious eye disorders around, but these do not necessarily cause irritation to the hound or require further veterinary treatment. Clearly hounds that have been diagnosed with entropion and other eye disorders and have required veterinary treatment for that disorder should not be bred from.

Goal:

- To reduce the incidence of eye disorders by continuing to screen for serious eye defects and by not breeding from affected hounds.

#### Longevity

The bloodhound is not recognised as being particularly long lived, though individuals attaining 12, 13 or 14 years are certainly not unheard of. To improve longevity, breeders may consider using older stud dogs that have had a relatively healthy life (whilst acknowledging that fertility does reduce with age), or using animals who have long lived relatives.

The Bloodhound has for many centuries been selectively bred for its ability to hunt 'the clean boot' - to follow the natural scent of man. Traditionally any hound that showed no propensity to do so would be culled. Since the mid to late 19<sup>th</sup> century it is fair to say that there have been other selective pressures put upon the breed, and in some breedings less emphasis on working ability.

Working trials entries today show a field representing almost all bloodlines acquitting themselves admirably at the work for which they were intended. However, careful consideration should be given to the use of a potential stud dog or brood bitch which shows no inclination to hunt or shows little interest in scents of others when out walking.

Breeders are advised to observe bloodhounds working and understand their job fully.

Although the working, functional bloodhound is often the primary goal behind a breeding programme, the majority of puppies will end up in pet homes and should have the characteristics to adapt to this lifestyle (within reason). At present there is limited mental assessment carried out on dogs in general in the UK other than guide dogs, military dogs in training etc. (it is not a Kennel Club requirement to assess the sire or dam for temperament prior to litter registration) and there is no data available on the Bloodhound with regards to mental assessment. However, breeders should avoid aggressive or nervous animals in their breeding programmes.

Consider how quickly the hound recovers from scary episodes, how they cope with new situations and environments. Bloodhounds are often not the most confident breed under these circumstances, but ideally a hound should quickly learn to adapt to new experiences and regain their composure rapidly once they accept there is no threat. Reactions to new people are equally important.

Goal:

- To reduce nervousness and aggression in the breed by not breeding from nervous or aggressive parents

Bitches that do not have normal reproductive cycles should not be bred from. A bitch should be between the ages of 2 and 8 years of age, though first time breedings should not be undertaken with a bitch of six years or over without veterinary advice. Stud dogs should have naturally high libido or sexual desire, poor libido is commonly a result of inbreeding depression.

Breeders should aim to breed hounds that need the minimum interference from humans when matings are attempted.

#### Summary

It is the aim of the Association of Bloodhound Breeders to encourage breeders to improve breed health with the following goals, whilst fully considering all aspects of the Kennel Club Breed Standard and the working functionality of the breed:

- To maintain genetic variation by increasing the number of sires and dams used
- To continue to make use of imported bloodlines, ensuring best use is made of imported hounds providing they meet all other requirements
- To increase the level of hip scoring from 4% of the population to 15% of the population in the next 5 years
- To continue to reduce the average hip score for the breed over the next 5 years by not breeding from high scoring hounds
- To increase the level of elbow scoring from an estimated 12% of the population of UK based Bloodhounds to 20% of the population in the next 5 years
- To reduce the average elbow score over the next 5 years by not breeding from high scoring hounds
- To reduce incidences of skin disorders by not breeding from any hound receiving treatment for any chronic skin disease
- To reduce the incidence of eye disorders by continuing to encourage breeders to screen for serious eye defects and by not breeding from affected hounds
- To reduce nervousness and aggression in the breed by not breeding from nervous or aggressive parents

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