DNA Health Testing of your Koolie.

The Koolie Club of Australia has a testing program for genetically inherited diseases. Tests are not available for all diseases, but more are being researched all the time so may become available as time goes by. Some problems such as Hip Displaysia are affected by several genes and are also largely affected by envioronmental factors so a test might never be available.. Breeders who care about their breeds future test their dogs before breeding.

This testing is designed so that breeders can test the dogs they plan to breed from and subsequently their offspring, to plan future generations of healthy dogs. A result is either Clear (the gene isn't present), Carrier (only one copy of the gene) or Affected (two copies of the gene). Even though receiving a result of Carrier or Affected is disappointing, it isn't and shouldn't be an end of the line scenario.

Most diseases tested for need your Koolie to inherit a copy of the problem gene from each parent to be a problem. If only one copy is inherited, the dog won't suffer from the disease. However if you plan to breed, you need to breed to another dog tested clear of that problem to guarantee no affected puppies. If you don't plan to breed, or plan to desex your dog inheritance of one copy of the gene is NOT a problem and your dog will not suffer the disease..

Koolies are generally a very healthy breed and don't suffer from the range of problems some other breeds do. If your breeder DNA health tests they have the good of the Koolie breed at heart.

Occassionaly a Koolie will inherit a copy of a disease gene from each parent and will be reported as “affected”. This doesn't mean your dog will definitely suffer from the disease, many of them need other factors such as nutrition and stress to trigger the disease. Some diseases if caught early, if they are triggered, can be managed very well medically and knowing a disease could be a problem gives owners a head start in knowing the sypmtoms to look for and early treatment could make a huge difference in the affect of the disease.

Testing of multiple generations can wipe these problems out. Testing is a new tool available to breeders so they are all in a settling in stage, finding out the status of their breeding stock and making plans of how to manage moving forward. In a small population breed it is extremely important to maintain the breeds diversity, decisions such as discounting a line from future breeding because one disease is detected may ultimately be more detrimental to the breed reducing it's diversity and choice and forcing line breeding which can lock any number of other diseases into the breed. Testing allows a breeder to manage their breeding program away from each disease and thereby having the line survive to be contributors to the breed and add diversity.

This can be done by testing all dogs bred from, if a carrier matching them when choosing a mate for not only, temperament, working ability, and other considerations they see as important, but also those that don't carry the same disease. Then testing the offspring and choosing only those that are clear to breed on from. Any pups from that litter can only be carrying one copy of the gene so unaffected and perfectly suited for working or sport etc.

In short: a NORMAL/CLEAR result means the dog is not affected by the disease and suitable for breeding, work and sport.

A CARRIER – ONE COPY OF THE DISEASE DETECTED result means the dog carries only one copy of the gene so is suitable for work and sport, but should only be bred to a mate tested clear of that disease.

An AFFECTED/POSITIVE result means the dog has two copies of the gene. Veterinary advice is a good idea before deciding against the puppy, but does not mean the dog will definitely suffer the complaint. They may well be fine for work or sport. Breeding is not recommended.

The goal of genetic testing is to provide breeders with relevant information to improve breeding practices in the interest of animal health. However, genetic inheritance is not a simple process and may be complicated by several factors

Some information provided by our genetecists:

1. Some diseases may demonstrate signs of what Geneticists call “genetic heterogeneity”. This is a term to describe an apparently single condition that may be caused by more than one mutuation and/or gene.
2. It is possible that there exists more than one disease that presents in a similar fashion and segregates in a single breed. These conditions – although phenotypically similar – may be caused by seperate mutations and/or genes.
3. It is possible that the disease affecting your breed may be what Geneticists call an “oligogenic disease”. This is a term to describe the existence of additional genes that may modify the action of a dominant gene associated with a disease. These modifier genes may for example give rise to a variable age of onset for a particular condition, or affect the penetrance of a particular mutation such that some animals may never develop the condition.

The range of hereditary diseases continues to increase and we see some that are relatively benign and others that can cause severe and/or fatal disease. Diagnosis of any disease should be based on pedigree history, clinical signs, history (incidence) of the disease and the specifice genetic test for the disease.

Penetrance of a disease will always vary not only from breed to breed but within a breed and will vary with different diseases. Factors that influence penetrance are genetics, nitrition and environment. Although genetic testing should be a priority for breeders we strongly recommend that temperament and phenotype also be considered when breeding.

More information:
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