



The ANKC proposed DNA Profiling Scheme - MORE!

In an article by Anna Salleh at ABC Science Online entitled 'Stud Dogs Need DNA Test Before Sex' the confusion about the ANKC's proposed DNA profiling Scheme continues. There is NO clear distinction made between DNA Profiling, Parentage Testing and/or Pedigree Analysis, and the totally separate issue of testing for Hereditary Diseases, which of course has to be at additional cost, plus the fact that DNA is not the "cure all" which readers could be

forgiven for thinking, as for many such diseases no DNA test as yet exists.

With all due respect to the author, who had undoubtedly compiled the article from information provided to her, we feel it necessary to continue our analysis of the ANKC's plans:

Australian purebred dogs will soon need genetic identity papers to prove their pedigree and show if they carry hereditary diseases.

Comment: this should state "ANKC REGISTERED purebred dogs" etc, as there are many dogs out there bred from registered parents/grandparents which are not themselves subsequently registered as we all know. These will not be subject to any such control/expense, yet can genuinely be sold as purebred dogs, ie THE 'BREEDER' CAN PRODUCE A CERTIFICATE OF REGISTRATION FOR BOTH PATENTS. The numbers of these sold will undoubtedly increase, as they can then be sold for a lower price than that which the registered breeder will be forced to add to their costs.

Only dogs used for breeding stock will need this genetic 'stud book' and not purebred show dogs or the average pet poodle, according to the Australian National Kennel Council.

Comment: "Not purebred showdogs?" SURELY THE ANKC WILL NOT ALLOW DIFFERENTIATION BETWEEN "DOGS USED FOR BREEDING STOCK: AND "PUREBRED SHOW DOGS"? Surely a "purebred shod dog" has - by definition - to come from the highest register in the land, which appears to be this new super category of a "Stud Book". Also see below.

The move towards genetic testing, which was made at the ANKC's recent annual conference in Sydney, is aimed at confirming dogs' parentage and reducing the incidence of hereditary disease in purebreds Under the new Australian Canine Pedigree Assurance Program, to be introduced over the next four years, the ANKC will require breeding dogs to have their DNA status on their stud book Each dog will have to have a DNA test from a cheek swab to confirm its identity and any defective genes it may carry (the underlining is ND/RLs).

Comment: The information that has been supplied to the author must have been over simplified and again misleading, as we pointed out in our October analysis. As we understand it, the cheek swab being proposed by the ANKC right now is specifically for the purpose of DNA profiling that individual animal. To ensure that the pedigree is as near as can possibly be proven, progeny will then need to be individually PARENTAGE TESTED (ie to my simple mind that means confirming its identity as in its most likely parentage, whereas a DNA profile is a genetic fingerprint of the animal itself), and then each dog DNA PROFILED so that their progeny can in turn be PARENTAGE TESTED. Simply profiling a breeding animal, worthy as that might be for all the right reasons, still does not guarantee it is in fact the parent of the litter, does it? So one cheek swab for around \$65 certainly doesn't do it all by any stretch of the imagination, and of course there is an additional cost when a dog is presented for pedigree analysis.

One most interesting fact emerged during our discussion with a professional involved in canine DNA testing. PARENTAGE TESTING is in fact a test of exclusion, in that it can only EXCLUDE a potential sire, it CANNOT guarantee that a particular dog IS INDEED the sire, especially where sires under consideration are close genetic males from inbred or intensively linebred families. It can only confirm the PROBABILITY that the planned sire is in fact the sire. Interesting, huh? Of course it is easier if a colour turns up where it cannot do so, etc, and the alarm bells sound for experienced breeders, and the test then confirms that the "culprit" can be excluded, but if we understand correctly what we have been told, absolute integrity of the pedigree in fact CANNOT be guaranteed by a DNA Parentage Test or any other test.

This was born out by a reader who contacted me along these very lines. I did ask her to send me the details in writing because so much crosses my tiny mind in a single day, but unfortunately this has not yet arrived. However in essence, the facts were that she had a bitch fall pregnant who had been living with a male long declared infertile despite many tests and dollars to attempt to restore his fertility. They were absolutely certain this bitch had not been mated by any other male, and to their delight tests indicated him to be the sire bearing in mind that there was no other male likely to have got to her who could therefore be EXCLUDED. However, there was another bitch who had also been living with him but who had a planned mating to a close relative who did not live on the property. I think the dog used was a grandson of the "infertile" one, and both bitches were also closely related, both to each other and to the two males. The finding from the laboratory was that while every indication was that the bitch was in whelp to the planned mating the other male could not be ruled out because only one "marker" could be found in the DNA tests, whatever that means, and they needed two to totally exclude him from consideration.

In parenting testing and the instance of only one marker being wrong (not compatible) with the dam and the progeny, this in principal is indicating that the dog is excluded from being the sire. However, it is possible although rare, for a spontaneous mutation to occur. For this reason the AKC has ruled many years ago, that in the instance of only one marker being incompatible, they would rule in favour of the breeder. Of course this in real terms, does not with total accuracy, determine whether



the sire is or is not the sire, but it can not be disputed and at least the breeder can register his/her puppies. Hence, the comment made regarding the second marker, for if there is a second marker also wrong (or not compatible) the sire is definitely excluded to be the sire. Testing laboratories at large have adopted this same strategy.

In addition, the cheek swab as currently proposed will NOT be analysed for any specific disease. That is a whole different ballgame, the swab would need to be taken specifically to test for an hereditary disease and as stated, at this stage very few such tests exist. Down the track it will be a great boon.

According to experts, VERY FEW genetic diseases can be detected by a cheek swab (for for that matter, other means such s blood or hair) AT THIS STAGE. Several of the best known Universities and those companies WITH ANIMAL ORIENTED RESEARCH and DEVELOPMENT BACKGROUNDS are working towards testing for hereditary diseases. What a great thing that will be when more and more tests are developed! In the literature from GSS and ANKC it was implied that since a large number of samples will be in storage new tests would be more easily developed.

To develop new tests for varying diseases the mutant gene (or diseased gene) has to be found first and you would need a Geneticist to take up this research for that breed and in the majority of cases it is absolutely breed specific and just because you found a gene for one breed, does not mean it will work in another breed, for the same disease. Further you would need available funding which over possibly years of research run in to figures with many zero's attached. Then comes the part of developing the test, which may take some additional time.

One of the problems is that most things on the dog from conformation (head, top-line etc) as well as many diseases are not recessive, but polygenic. Often more than one gene is involved. For most problems the mode of inheritance is not yet known. No mutant gene for any disease of polygenic mode of inheritance has yet been discovered or hence such test developed. (Part of Dr Karen Hedberg's article in the NationalDOG speaks of the same thing).

We are assured that the amount of DNA material collected on a cheek swab for DNA profiling is highly unlikely to be enough to also place some of that material in storage against a future test for some hereditary disease. Material for such a purpose would need to be specifically collected with that disease in mind and stored for however many years it takes a) to get enough material and b) to get enough money to carry out the necessary Research and Development.

Labs or Universities (Geneticists) who perform the research for diseases would need to collect about 20 families (say 5 dogs each) where at least two in the family have been clinically shown to have a particular disease, and the rest clinically shown to not have the disease. This amounts to about 100 samples. However, getting this many samples and families if rather difficult, especially when strict clinical tests are not available. Look at hip dysplasia, or any late onset disease like cardio myopathy You generally can't say which dogs are affected until they die, and you can't say they weren't carrying the gene for the disease, even when they die from something else.

Patenting a test in different countries costs so much money (tens of thousands of dollars) that it is not viable in a population our size. Research money is generally more readily available in other countries.

Barcodes on samples and dogs, using a microchip or tattoo, will be used to ensure there are no mix-ups....

Comment: This sentence is difficult to comprehend as most certainly a barcode can NOT be generateed/rinted on the spot at a collection point to correspond with a microchip or tattoo. Therefore we presume it means pre barcoded envelopes (two per dog) will need to be at the collection point, and great care taken to ensure that the microchip and/or tattoo are accurately read and immediately entered unto a data base with the dog and owner's name on the right envelope prior to the swab being taken, then the envelope sealed and immediately placed into safe storage. When vets and Councils frequently fail to read/record or even find a microchip, this could become a nightmare at the collection point. Scrupulous attention will need to be paid to all these details with the collector not allowing one moment's distraction - mistakes occur in pharmacies and hospitals for these very reasons and without doubt they will also occur at collection points. Perhaps, as with athletes and drug tests, a third swab is indeed needed, and should be handed to the owner as an insurance policy should another test be needed when a returned result proves totally unexpected.

Once DNA testing shows a dog is clear of disease, its offspring will no longer need to have disease tests, only tests to prove parentage.

Comment: As we have repeatedly said, very few of these tests exist at this stage. The issue here is the wording "A" dog is clear, because both parents would have to be clear of the disease. Here we again enter the confusing world of the carriers, as no single parent being clear can guarantee that progeny are clear. Yes, if both parents are clear the progeny will be clear, but then the

Open Letter to all Members RNSWCC

You will note that the Dec Gazette has already started arriving in members' homes. In this edition there is an article on DNA profiling.

Please do not ring the RNSWCC Office for help with technical information about the ANKC article - this article has been placed in or journal by ANKC as is normal procedure.

The background on this issue is as follows:-

1. The issue of DNA profiling was raised by the VCA at the 2004 May ANKC Conference.

At this meeting it was agreed that before DNA profiling was adopted as ANKC policy, that draft regulations etc would be provided to member bodies. Who would then have time to consult their members, before voting for or against the formal adoption of the regulations, that then would be introduced Australia wide.

2. As all ANKC member bodies are required to print ANKC reports etc, it was placed in the first available edition.

The RNSWCC Board (at its November 2004 meeting) has reviewed current developments both at a ANKC level and in Victoria who appear to have "gone it alone" on the introduction of DNA profiling in that state.

3. The Board believes that the ANKC has not followed the process that had been agreed at the May 2004 ANKC Conference, and has not allowed for the issue to be considered, with full details of the proposed processes and draft national regulations being provided to each member body, for consideration by the general membership of same.

4. The Board resolved that it did not support the current approach taken by ANKC and that the ANKC be formally advised.

"That we will not support the concept of DNA profiling until such time as the draft regulations etc are provided and we have had an opportunity to consult fully with our members on this issue"

5. In these circumstances, members are advised that they should await further advice from the RNSWCC Board on this matter, which will be published in the Gazette as soon as it is available.

Keith G Irwin President 1/12/04

From the Agenda Papers for RNSWCC Board meeting, Wednesday 8 December, to be discussed in the open forum section of the meeting

7. Australian National Kennel Council.
7.2 DNA testing receive email from CCQ dated 9/11/04 attaching motion to ANKC re DNA testing.

Background: The CCQ recently sent a letter to ANKC moving a formal motion to defer any decision to implement DNA testing until the full protocols, on how it is to operate, who does the test etc have been developed and provided to member bodies, including a breeder's cost-benefit analysis of compulsory DNA testing before any decision is made with respect to DNA testing." This is to be placed on the next ANKC conference agenda.



progeny MUST obviously be not only DNA profiled but PARENTAGE TESTED in order to be declared clear themselves. It's not as simply as these statements make it appear, is it?

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Missing Borzoi Pups




Missing since 11 November from the Christmas Hills area, Victoria.

Please can you help us find them?

1 dog white with red brindle
1 bitch white with fawn sable,
1 bitch white and black

These pups are out of my gold and white bitch by Ron Frolley's imported brindle dog.



I do have photos of both sides and front on head shots, so contact me if you want more details

Ring Sally Stasytis
wk 03 9818 2600
ah 03 9730 1603
sallystasytis@aol.com.