



DNA Testing for Frozen Semen Litters

Planning a Frozen Semen Litter ?

With the introduction of a compulsory DNA Parentage Verification requirement for all Dogs Victoria litters whelped from 1 January 2026, we understand many of our breeders who have frozen semen stored, or who are planning to use frozen semen have concerns about how they are going to meet their testing requirements.

It is understandable, that breeders who have spent often thousands of dollars importing semen to increase genetic diversity in their breeds, or who have had animals collected over the years to preserve their bloodlines, are concerned that they may encounter issues if they choose to use their frozen semen when the new rules come into play.

Dogs Victoria understands these concerns and is working with our preferred suppliers to ensure that breeders who plan to use frozen semen understand what needs to happen and are prepared well before their breeding female is ready to mate.

What do I need to get my litter registered?

For parentage verification to occur, both the Sire and the Dam of the litter must have a DNA profile (DNA Fingerprint) recorded.

These DNA Profiles are then compared to the DNA profiles of the puppies within the litter.

When you go to register your litter, you will need to provide parentage verification for each puppy - this will be in the form of a certificate that you upload, or via digital sharing direct from the laboratory.

Because a dog's DNA does not change, a DNA Profile or Fingerprint test only needs to be done once – the same profile can be used every time the Sire or Dam is used for breeding and parentage verification is required.

I am planning on having a frozen semen litter, what do I need to do?

Does the semen donor ALREADY have a DNA Profile on file?

In many cases, you may find that the donor dog has had a DNA profile recorded at some time in their life, especially if your breed requires DNA testing for breed health issues.

Many DNA laboratories offer 'breed screening panels' and many of these panels include a DNA profile as part of the bundle.

Ask the owner(s) of the dog or check back through any DNA results you may have on file to see if a DNA profile already exists for the dog.

Will an old DNA Profile test be able to be used?

The short answer is – possibly. There are two potential issues with older DNA test profiles:

The first relates to the **testing technology** that was used to generate the DNA Profile and whether its format allows comparison to current day DNA profiles.

Over time DNA testing technology has advanced, and DNA Profiles taken a long time ago, may be in a format that is unable to be used.

There have also been 'proprietary' DNA fingerprinting tests (such as the American Kennel Club's in-house testing) where the DNA marker locations are 'secret' and therefore, are not able to be used by any other laboratory.

Speak to your preferred DNA testing provider to see if the results that you have can be imported into their system.



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If not, you can also contact the laboratory that did the testing to see if they can still use the result – and if they can, you might choose to have the dam and the litter tested by them.

Internationally, there is now an overarching group called the *International Society for Animal Genetics* (ISAG) who are working to standardise the requirements so that results sharing between laboratories is easier, and moving forward, all laboratories are using the same markers and technology.

The second issue relates to the whether the collection of the sample met the requirements outlined in the Dogs Australia collection protocol.

When DNA testing was first introduced, there were no real requirements set out for how the sample was collected. Although many samples were collected by veterinarians, just as many were collected by breeders and owners taking DNA swabs from their own animals.

There are now protocols that aim to minimise manipulation of results or fraudulent collection of samples. The Dogs Australia protocol requires that the animal must be positively identified at the time of collection, and that the collector must be an independent, approved person.

Is the dog still alive?

If you are holding semen and the donor dog is still alive, probably the simplest and best option is to have a DNA sample collected under the Dogs Australia testing protocol and have a DNA Profile recorded – preferably at the laboratory you plan to use for the dam of the litter and the pups.

It is possible to order a test swab kit from an Australian laboratory and have it sent overseas, or the owner of the male may be able to organise a kit and collection through a laboratory in their own country.

Just remember, that the profile needs to be in a format that can be shared with your laboratory here.

Alternatively, you can choose to send all of the DNA samples from your dam and puppies to the lab overseas and have them do the parentage verification.

The dog is no longer alive, and there is no DNA profile recorded....

It is possible to extract DNA from semen, and both of Dogs Victoria's preferred suppliers have a documented protocol to do this.

The best chance of having DNA successfully extracted is to thaw an entire straw or pellet for testing, which may or may not be an option depending on the amount of semen that you have.

Some breeders may only have the bare minimum number of straws to make a 'dose' or a single breeding unit, so sacrificing semen solely for DNA sampling may not be an option.

The next best option is to have DNA extracted from the remnants of the breeding unit that remain after insemination occurs.

Of course, the amount of DNA will be significantly less, however both of our preferred suppliers report reasonably good success rates if done correctly.



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Semen sampling is different to extracting DNA from the standard mouth swab, so you need to contact your preferred laboratory **well ahead of time** to make sure that you discuss what needs to happen and have time for the testing kit to be delivered.

Note: *DNA sampling from semen may incur an additional charge due to the different sample handling requirements.*

You will also need to make sure that your reproduction veterinarian is aware of the need to prepare a sample for DNA testing at time of insemination.

Most reproductive veterinarians will be familiar with DNA testing protocols, but each lab is a little different in how they want the sample prepared and packaged, and the time frame for submission.

Make sure that you take all of the required paperwork and sampling kit with you on the day, and ensure that the sample is sent to the laboratory as quickly as possible.

What if insufficient DNA can be extracted from the semen to generate a DNA Profile for the Sire?

We understand that this is the scenario that breeders are most concerned about.

Their frozen semen litter is on the way, and the DNA results for the Sire have come back as unable to be extracted.

In this case, please contact Dogs Victoria directly to dnadogsvic@dogsvictoria.org.au. We will work with you and your DNA laboratory to find a solution and get your puppies registered.

Finally....

If you are having one of your dogs collected and frozen, or have recently done so....

Make sure that you have a DNA Profile recorded for that dog so that in future, when the semen is used, you can provide the breeder of the litter with the Sire's DNA Profile.

