

DNA TESTING - SNP UPGRADE

URGENT NOTICE TO MEMBERS MIP - SNP DNA TESTING

The last newsletter some forward information pertaining to the new requirements for DNA testing in order to be able to have calves DNA/Parent verified in the future.

Further information was scheduled for the Bulletin and that has been completed.

That information has been duplicated in this documents to ensure Members have the information they need to take advantage of the discount testing offers available.

While the Bulletin is not far away some information regarding the new contract with GAA and other matters has been delayed. The results of these issues need to be included in the coming edition so publication has been delayed slightly.

Council DCAI did not want to run the risk of delays in postal delivery resulting in the possibility of some Members missing the opportunity to upgrade to SNP testing during the transitional SNP testing discount period.

The relevant information from the Bulletin has been duplicated in this document to ensure Members have it in a timely manner.

Please read the information and take the opportunity to upgrade your current breeders at a cost effective price.

Significant discounts are available for SNP testing your current breeding animals that you may want to DNA / Parent verify calves to in the future.

Members are reminded that these prices and subsidies are only available for this transitional period and nomination for animals to be tested need to be sent to the DCAI registrar by the 23rd December using the form provided. The form will also be available on the DCAI website in the DCAI documents and Forms section as a downloadable PDF or Excel spread sheet.

DCAI Council

27 November 2017

DNA TESTING - EXPLANATION

In September, an announcement was made that the University of Queensland Animal Genetics Lab was acquired by Neogen, a US based company.

The new laboratory and company is called Geneseek Australasia (GAA). With this acquisition we have been fortunate that Neogen has brought with it the latest in genetic technology and DNA testing.

For some years now we have been parent verifying our Dexters using a genetic test called Microsatellite testing.

However, Microsatellite DNA testing has now become old and outdated as new ways of genetic technology and testing become available.

This new way of testing is called SNPs. The capabilities of SNPs are almost endless and testing this way is capable of predicting the genetic expectations of an animal in almost all traits.

GAA will now be transitioning over to doing SNP testing and slowly phasing out Microsatellite testing.

They will continue to do Microsatellite testing for a period of a few years as long as they are able to keep their instrumentation running and able to get the necessary reagents.

As yet they don't have an end date for Microsatellite testing but it will happen. If instruments break down and can't be repaired, or reagents can't be purchased, it may happen sooner than expected.

The thing that is important to remember is that SNPs and Microsatellite testing are not compatible. You cannot do an SNP on a calf and have it parent verified to animals that have Microsatellite markers on file. An analogy is VCR recorders and DVDs. You cannot play a DVD in a VCR and vice versa. They both do the same job but are different technology.

Likewise Microsatellite and SNPs markers do the same job but with different technology.

So what does this mean to us as Dexter Breeders? It means that we will be able to get state of the art genetic testing on our Dexters at a very affordable price.

There will be 3 levels of testing available. Two of which are very affordable, and depending on what you want to know genetically about your animals, you may choose different levels for different animals.

The basic test is Seeksire which can do 500 SNPs (so many more than the basic 12 or 16 that Microsatellite does for reporting) and which is used just for parent verification. This is the cheapest and comparable to what we are currently paying for PV and possibly what most people will choose.

The next level of test is the GGPLD which will cost a little more than the Seeksire and is capable of doing up to 50,000 SNPs.

This can be used to predict genetically many different traits: calving ease, size of calves, docility, milkiness, feed efficiency, fertility, just to name a few. This test may suit you if you are wanting to do several other add on tests like colour, polling, PHA, chondrodysplasia etc, as they will be at a much reduced price when doing this level of testing.

Then there is the highest level of testing, the GGPHD. Most Dexter breeders would not want to do this level of testing, it is probably more suited for the likes of Angus top end AI sires.

If you choose to do Seeksire, the extra tests like polling, colour, PHA, and chondrodysplasia are done as standalone tests. Stand-alone tests will be comparable in price to what we are currently paying but some may be available in bundle discount prices if done at the same time as the DNA /PV is done using Seeksire.

Very good news is that the polling test done by GAA will now be the PC test, no longer the complicated % results that they previously did.

How you transition your herd to SNPs will be a personal choice.

You may choose to SNP test all of your current breeding animals and any semen stored on your bulls straight up. Then all calves from now on that you breed and want to register will only need SNP testing to parent verify.

Or, you may decide to only SNP test parents when you wish to parent verify calves, after Microsatellite testing is phased out.

It is important to note that you will only need to have an SNP on file for any animals that you intend to register calves from in the future.

How you decide to transition is totally your own decision and will depend on what suits your herd.

GAA is being very generous and accommodating in helping breeders transition. They are offering a discounted price for those wishing to establish SNPs on file for their animals straight up. This offer does not include any additional stand-alone testing.

It will be just a matter of deciding which animals you wish to have tested and making a list, GAA will retrieve the stored DNA that they already have and run your animals in a batched run.

By: Louise Ball

Carrageen Dexter Stud.

DNA TESTING - SNP Q & A

Is the change to SNP DNA testing only for Dexter Cattle or does it apply to all breeds?

It affects all breeds including Dexter and all breed societies.

Is SNPS available for Dexter cattle through DCAI now?

Members wanting to upgrade animals that have already been DNA tested can do so using the transition discount offer. This is explained on the following pages.

DCAI is currently negotiating the agreement with Geneseek for the new testing to establish ongoing pricing Schedules for DCAI members.

Do I have to have any animals upgraded to SNPS DNA profile?

No, it is not mandatory to upgrade any animals if you do not want to. The transitional price being offered is only in place for this short period and to assist members wanting to upgrade animals.

You can upgrade the DNA of animals at any time in the future if and when you have a calf of that animal DNA/PV tested. Costs will be at the DCAI list Price.

Will the old MIP DNA testing stop altogether.

No immediately. It will depend on the demand and the viability of maintaining the service into the future. It is likely that MIP testing will get more expensive as most breeds change to the SNPS testing and the demand for MIP reduces.

Can I access it privately if I want to?

Yes, Dexter cattle can be DNA & PV profiled by ordering tests directly through Geneseek. Tests done privately will be billed at the public list price.

Can I still use the test kits I have?

Yes. The test kits previously supplied can still be used and will be accepted until stocks run out.

In the future only the authorized sample kits will be accepted. Any samples submitted in other ways will attract an administration fee.

Will I have to pay for test kits in the future?

Yes. Test kits will attract a small fee. The cost of test kits in the future is being negotiated as part of the contract between Geneseek and DCAI

Are there any changes to the DNA test order form for MIP DNA testing.

Yes. There is a new spreadsheet order form. The spreadsheet has been changed slightly. Once the contract with between DCAI & GAA has been finalized an

online order form specifically for Dexter Cattle will be available on-line.

Are the tests I need still shown the same way on the new form?

No. The new order form may look different and the codes used for tests may be different. This will be self explanatory on the form when it is done.

Can I still order DNA tests through DCAI?

Yes. Ordering DNA tests is the same - test kits can be ordered through the DCAI Registrar. When your test results are completed DCAI / LBC will invoice you for the cost of the test.

Do I need to submit my DNA test order by Email.

Yes. All test orders going to Geneseek have to be sent by email and a printed copy included with the tails hair sample when they are posted to Geneseek.

Can I still use MIP testing

Yes. At this time MIP testing is still available. If your DNA testing is not urgent you may want to wait until the negotiations with DCAI are completed so you can make an informed choice of what testing you want to do - MIP or SNP

If I have MIP DNA tests done on calves now will I have to retest later.

Possibly. If an animal is MIP tested (the current DNA testing) any calves from that animal may not be able to be parent verified and the parent animal may need to be retested using SNPs in the future.

It may be more cost effective to nominate your breeding animals for SNP testing at the discounted rate before 23rd December and then DNA your calves after that using SNPs

If I order MIP DNA testing is it the same price as it has been even though I have to order DNA and PV separately on the order form?

Yes it is the same price for the time being. Once the DCAI Council has finished negotiating the new contract with Geneseek members will be advised what test options are available and what the prices will be.

Given these negotiations are almost complete it may be pertinent to hold off testing animals not previously done until the new pricing and forms are available.

In summary:

You do not have to do anything now if you do not want to.

You can upgrade your current breeding animals at a discount rate up to the date specified if tail hairs are on file at Geneseek

and if the original DNA test was done through DCAI. If you have DNA testing done as a public customer your animal will not be eligible for upgrading at the discount price.

You can upgrade your animals to SNPS at anytime in the future.

The process for ordering DNA testing remains much the same but the forms will be slightly different.

If there are changes to how you order tests DCAI will notify Members via the newsletter or Bulletin once the contract negotiations are completed.

Is there anything I need to do now?

DCAI will need to supply Geneseek with the details of how many animals need to be tested during the transition discount test period.

Members are asked to nominate which of their breeding animals they want to have upgraded to the SNPs DNA/PV system.

Members will need to supply the list of animals they want tested to LBC by the 23rd December 2017

How much will the tests cost if I have animals DNA upgraded to SNPs during the discount period.

The upgrading of animals already DNA tested that have tail hair on file with UQ will cost is being offered by GAA at \$19.80 per animal tested using Seeksire. This is a significant saving on normal list price.

In order to assist Members in bring their current breeding animals into line with the new testing requirements and for the furtherance of the Dexter Breed DCAI will subsidise the upgrade testing reducing the member cost per Seeksire test to \$11.00 GST inclusive.

To have animals tested at the higher level using GGPLD the subsidised cost will be \$36.30 including GST. DCAI is not subsidising this higher level of testing.

How much will it cost to upgrade animals after the introductory discount period?

New pricing for DNA testing is currently being finalised and members will be advised as soon as the pricing schedule has been confirmed.

Please read the details provided in this document. If you are nominating animals please only list active breeding animals you may want to DNA calves to in the future using the form provided.

The form can be downloaded from the DCAI website - DCAI Documents and Forms section.

DNA TESTING - UP GRADE OFFER

DNA TESTING SNP UPGRADE

In order for the members to access the SNPs upgrade at the transitional discount price Members must submit a list of animals they want tested under this discount scheme by 23rd of December 2017.

Conditions apply for animals to be included in the scheme:

- Nominated animals must have previously been DNA tested through DCAI. Animals tested privately are not eligible for the discount.
- Testing is dependent on the Geneseek still having tail hair samples for the respective animals on file and that enough DNA can be extracted from those remaining samples. (Note: some animals on the list supplied to DCAI are noted as not having samples in storage)
- The offer is not open to any new animals that have not been tested before.
- Animals previously tested by blood typing and not having been DNA tested using tail hair are not eligible.
- Members must have submitted their list of nominated animals on the prescribed form before the 23rd of December in order for the lists to be collated and submitted to Geneseek in accordance with their deadline.
- Only current full financial and Junior DCAI Members will be eligible to take part in this offer.
- The cost per animal nominated for this upgrade offer is \$11.00 (gst inclusive) per animal tested using Seekshire. GGPLD \$36.30 Per test. These discounted prices apply for this transitional offer period only.
- Additional stand-alone tests such including polling, PHA, BD1 & BD2 and pestivirus are not included in this DNA upgrade offer.

SELECTING ANIMALS TO BE NOMINATED FOR RE-TESTING.

- Only include animals that you intend to breed from and DNA/PV calves to in the future should be included for SNP testing.
- Testing of your active bulls and stored semen would be advisable.
- Owners of multiply owned bulls should discuss who is responsible to SNP test those animals and the nominated only person should include the animal on their list.
- Retrospective testing on antecedent animals or retired stock is not required and will have no value.

NOTE: SNP testing animals is not mandatory at this time. If you choose to wait until a later date when you want to DNA calves you can do that. Please keep in mind the cost of upgrading in the future will be significantly higher.

DCAI is meeting the cost of testing all Accredited and Approved AI sires listed on the DCAI bull catalogue where samples are still available. If you have stored semen from these bulls please do not include these in your list.

NOMINATING ANIMALS TO BE DNA UPGRADED TO SNP

- Members must submit the list of any animals to be re-tested under the introductory scheme on or before December 23rd. The earlier you get them in the more expedient the process will be.
- Nominations must be submitted to the DCAI Registrar (Janelle Johnson)
- Nominations must be submitted on the form provided with this notification. The form is also available on the DCAI website as a downloadable document in PDF and Excel formats. The form is located under DCAI Documents and Forms.
- Forms can be emailed, posted or faxed to the DCAI Registrar at LBC (**Note: DO NOT send forms or test requests for this upgrade to Geneseek - they must be sent to the DCAI Registrar**)

PROCESSING and BILLING

- When your list of nominations is received by the Registrar the information will be collated into a list with all other nominations.
- The completed list will be sent by LBC to Geneseek.
- Geneseek will assess the list and schedule a time frame for testing all the Dexter nominations at one time.
- The normal turnaround time will not apply as Geneseek are going through this process will all breeds in order to transition to the new testing.
- Completed test results will all be sent to LBC.
- The Registrar will forward the results to you as soon as is practicable after she receives them.
- An invoice will be sent for all animals nominated by you for testing.

LEVELS OF TESTING

Sarah Buttsworth of GAA has advised that the SNP test most relevant to most DCAI Dexter Breeders is the Seekshire. This provides the necessary information to enable parent verification of any calves being born in the future.

The next would be the GGPLD. This includes all of the information of the Seekshire and significant amount of genetic information including horn and poll, some colour markers and other performance information. Much of this information is too complex to use in its raw form and is most often relevant to Breed Plan users with results being uploaded by the respective societies into Breed Plan for genetic profiling.

Stand-alone tests for PHA and Chondrodysplasia (BD1 & BD2) are available as are tests for some coat colours, polling and Pestivirus. Some of these may be eligible for inclusion in bundling options in the future. Test bundling is currently being negotiated as part of contract negotiations between DCAI and GAA.

Stand alone test can be used for animals DNA profiled with Seekshire.

Stand alone add-on tests and bundling are not available in conjunction with the transitional discount testing options being offered.

