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## Dexter chondrodysplasia DNA-test INFORMATION for Australian samples

The University of Sydney has identified the gene that causes chondrodysplasia (“bulldog calves”) in Dexter cattle. We are currently offering two DNA-tests to differentiate between non-carriers and carriers of chondrodysplasia in Dexter cattle.

**TEST 1** is available for all Dexter cattle. It identifies **MUTATION BD1** which causes chondrodysplasia in Dexters world wide and is the most frequent mutation in Australia.

**TEST 2** is available for Australian and New Zealand animals that are related to (or thought to be related to) Meadowpark Charles, his female ancestors or his relatives (i.e. **not** Bookhams Robert or Shootlands Ben Macdhui). **TEST 2 is offered only in conjunction with TEST 1.** It is the owners responsibility to determine if the animal to be tested is related to Meadowpark Charles or his relatives. **TEST 2** identifies **MUTATION BD2** which is an indicator for chondrodysplasia in Dexters related to Meadowpark Charles and his relatives. **MUTATION BD2** is the least frequent mutation in Australia.

### INDICATIVE COSTS OF TESTING SERVICES (GST inclusive):

	Hair	Blood	Semen	Tissue
<u>TEST 1 only</u>	\$49	\$88	\$99	\$99
<b>TEST 1 and TEST 2</b>	\$79	\$118	\$129	\$129

Requirements for testing include:

- The animal must be owned by the person requesting the test.
- Payment must accompany the sample(s), a cheque or money order payable to The University of Sydney.
- Hair sample(s) must be clean and dry or they will not be processed.
- Please include a stamped self-addressed envelope for prompt return of results.
- The samples/results may be used for population studies by the University of Sydney.

Testing of samples will be carried out in as short a time as possible, although the time taken may vary depending on demand.

The samples will be stored for a minimum of 5 years to confirm identity of the sample if required.

Please see page 3 for instructions on sampling.

## Testing schedule

Testing is available in 4 batches per year. Samples can still be sent to the lab at any time during the year for testing with the knowledge that samples will be tested in February, May, August and November each year. Samples must be received by:

**1<sup>st</sup> February**

**1<sup>st</sup> May**

**1<sup>st</sup> August**

**1<sup>st</sup> November**

to be included for testing that month – if samples are received after these dates they will be included in the following testing batch 3 months later.

## What do the test results mean?

Test results will be provided as a 1 page report for each animal indicating the results of the test including an explanation.

If the breeder chooses to list the result on the registration certificate, and/or AI bull listing - four abbreviations: BD1-N, BD1-C, BD1-N/BD2-N, and BD2-C have been devised for simplicity with a description below.

**BD1-N:** DNA testing indicates that this animal **is not a carrier** of the “Exon 11- 4bp insertion” mutation which causes chondrodysplasia.

**BD1-C:** DNA testing indicates that this animal **is a carrier** of the “Exon 11- 4bp insertion” mutation which causes chondrodysplasia.

**BD1-N/BD2-N:** DNA testing indicates that this animal **is not a carrier** of the “Exon 11- 4bp insertion” (which causes chondrodysplasia) or the “Exon 1 C>T SNP” (which is associated with chondrodysplasia).

**BD2-C:** DNA testing indicates that this animal **is a carrier** of the “Exon 1 C>T SNP” mutation which is associated with chondrodysplasia. A BD1-N test result is in this case irrelevant.

Regardless of which mutation (BD1 or BD2) an animal has, the most important information for the breeder is if the animal is a carrier (**C**) or normal (**N**).

Shown below are the expected outcomes from possible matings (regardless of which is the bull and which is the cow):

**N x N = 100% N**

**N x C = 50% N and 50% C**

**C x C = 25% N, 50% C and 25% bulldog calves**

**Method for taking a hair sample:**

1. Ensure that the animal's tail is clean and dry before taking a sample.
2. Prepare plastic snap lock bags (available in the supermarket) for each sample to be taken with the following listed:  
**DATE COLLECTED, OWNER'S NAME, ANIMAL'S NAME and REGISTRATION NUMBER (if registered).**
3. For each animal, pull approximately 20 hairs from the end of the tail and tie them in a knot (do not cut hairs as it is actually the hair roots that contain the DNA), put these in the pre-labelled bag and seal the bag. For additional animals, ensure that hands are free from hair to avoid mixing of samples.
4. Store hairs in a cool dry place until ready to send with request form.

**Semen sample (please contact ReproGen before sending):**

Please send straw of semen at room temperature in a plastic snap lock bag (available in the supermarket) for each sample with the following listed:

**DATE COLLECTED, OWNER'S NAME, ANIMAL'S NAME and REGISTRATION NUMBER (if registered).**

Please ensure adequate protection such as cardboard or padding is included to prevent breakage of the straw.

**Blood sample (please contact Julie before sending):**

Please send blood in EDTA plastic tubes at room temperature within 24 hours after sampling.

Please ensure tubes are clearly labelled with:

**DATE COLLECTED, OWNER'S NAME, ANIMAL'S NAME and REGISTRATION NUMBER (if registered).**

Please ensure adequate protection such as cardboard or padding is included to prevent breakage of the tubes.

**Please send above samples by normal mail to:**

**ReproGen  
Dexter Cattle DNA test  
The University of Sydney  
425 Werombi Rd  
Camden NSW 2570**

**Tissue sample:**

Please contact The University of Sydney for arrangements for sending tissue samples. Tissue samples include meat, liver, etc that are stored in the freezer.

**Terms and conditions:**

The Client agrees to release and keep released the University for and in respect of all causes of action, suits, proceedings, claims, demands, costs, expenses and liability whatsoever which the Client may have at any time in the future have against the University, arising from or relating in any way to the provision of the Testing Services.

The University shall ensure that the Testing Services are provided with the due care, diligence and skill reasonably expected of professional persons providing services of the kind described. The University makes no other warranty or assurances with respect to the Testing Services or any other work carried out in relation to this Agreement, or to its quality, accuracy or suitability for any purpose.

Subject to any contrary provision in any law of the Commonwealth of Australia or any State or Territory the University's total liability to the Client for any loss or damage arising directly or indirectly from or in connection with the provision of the Testing Services or any other matter arising therefrom shall be limited, at the sole discretion of The University to either the provision of the Testing Services again or the payment to others to perform the Testing Services again or the refund of the fee paid or payable for the provision of the Consultancy Services.

**Notwithstanding any other provision herein the University shall not be liable and the Client releases the University for and in respect of all claims for consequential, indirect or special damages including but not limited to loss of business profits, anticipatory profits, business interruption or loss of business information.**