

Liège, 30th of June 2010,

Dear Madam Palmer,

Subject: DNA results for the mutation responsible of PCD (respiratory disorders) in Old English Sheep dog

Please find hereby the DNA results for the blood samples received from BREEDONHILL JUHANNUS FOR HAZYLAND.

The genomic DNA was extracted from the blood samples and tested for the presence of the mutation responsible of the respiratory disease (called Primary Ciliary Dyskinesia or PCD) also characterized in a few dogs by a displacement of the heart and liver (situs inversus)

The results obtained on the DNA can be the following:

- 1- sample healthy : « +/+ »
- 2- sample carrier : « MUT1/+ »
- 3- sample affected : « MUT1/MUT1 »

- Dogs with the genotype « +/+ » are healthy and will not transmit the disease to any puppy.
- Dogs with the genotype « MUT1/+ » are healthy but they carry the mutation and will transmit the mutation to half of their offspring. However if they are crossed with a healthy dog, none of the puppies will develop the disease. If they are crossed with another carrier, a quarter of the puppies will be affected!
- Dogs with the genotype « MUT1/MUT1 » are affected and will develop the disease. They will transmit the mutation to all their offspring. If they are crossed with a healthy dog, all puppies will carry the mutation but will not be affected. If they are crossed with a carrier « MUT1/+ », half of the puppies will be affected!

If the samples were directly sent to the University of Liège (and not taken at the dog exhibit) the results obtained concern the DNA extracted from the samples received and we cannot certify the exact origin of the samples.

Please do not hesitate to contact us for any additional information.

Best regards

Dr Anne-Christine Merveille

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Owner	Dog Name	Dog ID	RESULTS
Palmer	BREEDONHILL JUHANNUS FOR HAZYLAND	985120032284552	+/-