Analysis Certificate

H656 CombiBreed Nova Scotia Duck Tolling Retriever + DEN

Customer Info

Name	:	Rick Palte
Adress	:	Braamhoek 1
Zip Code / City	:	7681 JK VROOMSHOOP
Customer no.	:	114039

Animal Info

Name	:	Monte Carlo AQUA SILVA
Animal ID	:	528140000891061
Breed	:	N.S.D.T. Retriever
Gender	:	Male
Date of Birth	:	1.11.2023
VHL ID	:	H644042

Sample Info

Order number	:	479236
Sample type	:	Swab
Certificate number	:	H113834
Test date	:	6.1.2025

Witness Sampling Statement available.

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DNA is our core

Health Conditions

An explanation of these results is accessible in our Online Results Portal, which can be found in your account on the Combibreed Webshop. Within this portal, you will also discover comprehensive details for each test, including the breed relevance associated with each DNA test.

Breed Relevant Test Results

Code	Test Name	Gene	Mode of Inheritance	Result
H346	**Chondrodystrophy (CDDY with IVDD Risk)**	**FGF4L2**	**Autosomal Dominant**	**Carrier**
H296	Cardiac Laminopathy (CLAM) – Nova Scotia Duck Tolling Retriever	LMNA	Autosomal Recessive	Normal
H284	Cerebellar Degeneration-Myositis Complex (CDMC) – NSDTR	SLC25A12	Autosomal Recessive	Normal
H344	Cleft Lip / Palate and Syndactyly (CLPS)	ADAMTS20	Autosomal Recessive	Normal
H655	Cleft Palate (CP1)	DLX6	Autosomal Recessive	Normal
H705	Collie Eye Anomaly CEA, CH	NHEJ1	Autosomal Recessive	Normal
H270	Degenerative Encephalopathy (DEN) (External Lab)	unknown	Autosomal Recessive	Normal
H673	Degenerative Myelopathy Exon 2 (DM Exon 2)	SOD1	Autosomal Recessive	Normal
H811	Hyperuricemia (HUU)	SLC2A9	Autosomal Recessive	Normal
H654	Juvenile Addison's Disease (JADD)	C12ORF35	Autosomal Recessive	Normal
H704	Progressive Retinal Atrophy (prcd-PRA)	PRCD	Autosomal Recessive	Normal

Trait Characteristics

Coat colour and patterns are caused by the interaction of several genetic traits. For in-depth insights into these genetic traits, you can visit the online portal with test results or access the knowledgebase via the CombiBreed webshop.

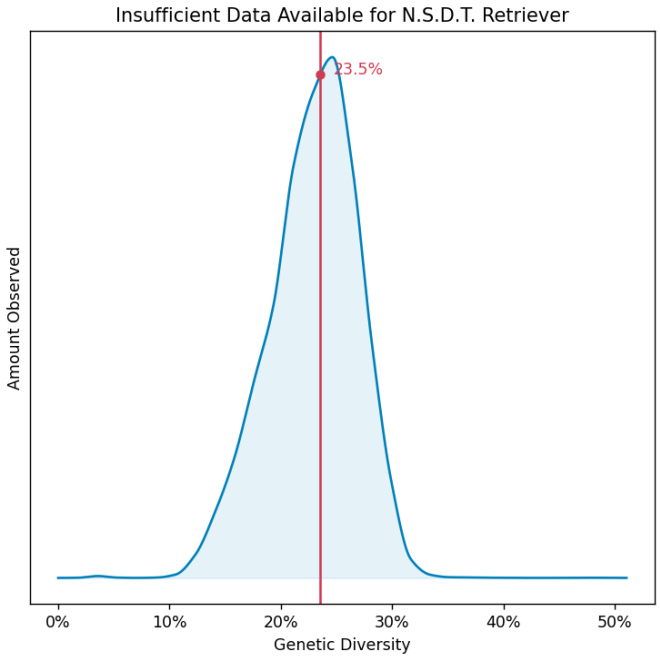
Coat Colours

Code	Test Name	Gene	Mode of Inheritance	Result	Phenotype
H847	Coat Colour D-Locus 1 - Dog	MLPH	Autosomal Recessive	Sample Quality	--

The provided sample was collected by an independent individual who verified the identity of the animal. For more information, please refer to the attached Witness Sampling Statement form.

On behalf of VHLGenetics B.V.,
A. de Lange MBA

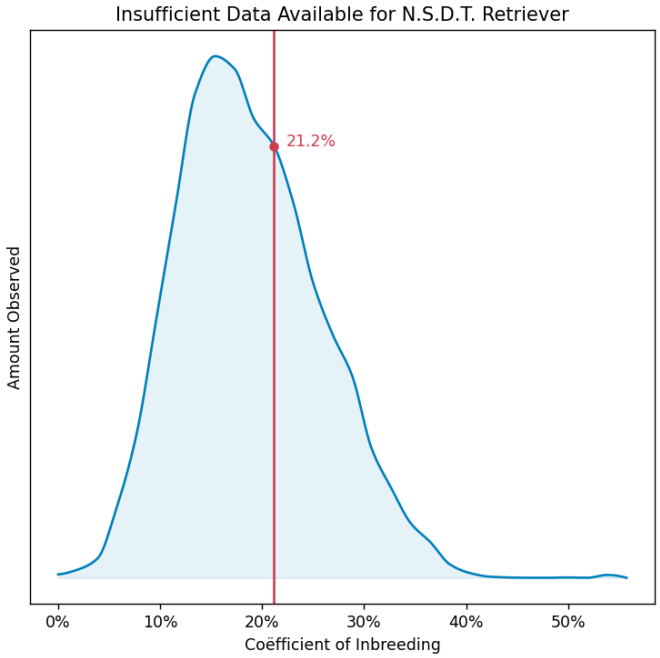
Genetic Information



Diversity/Heterozygosity

Heterozygosity in dogs refers to the genetic situation where a dog inherits two different alleles (gene variants) for a specific trait or gene locus from its parents. This genetic diversity contributes to the variation seen in physical traits, behaviors, and health among individual dogs and different breeds. Maintaining a certain level of heterozygosity is important in breeding programs to avoid an excessive accumulation of harmful recessive traits and promote overall genetic health within dog populations.

*In case there is an insufficient amount of animals for your specific breed, only a comparison with all breeds will be shown.



Coefficient of Inbreeding

The Coefficient of Inbreeding (COI) in dogs is a numerical measure that quantifies the probability of two copies of the same gene being inherited from a common ancestor. In simpler terms, it reflects how closely related the parents of a dog are within their family tree. A higher COI indicates a higher likelihood of the dog inheriting identical genes from both parents, which can lead to an increased risk of passing on genetic disorders or health issues.

*In case there is an insufficient amount of animals for your specific breed, only a comparison with all breeds will be shown.

Modes of Inheritance

Autosomal Co-Dominant: A mode of inheritance where the affected and normal alleles are expressed equally, leading to an intermediate phenotype when both alleles are present in carriers.

Autosomal Dominant: A single copy of a dominant allele from one parent is sufficient to express the disease/trait. Individuals with at least one dominant allele will exhibit the trait.

Autosomal Incompletely Dominant: A genetic inheritance pattern that functions as normal Autosomal Dominant. However, carriers are not guaranteed to express the trait.

Autosomal Incompletely Recessive: A genetic inheritance pattern that functions as normal Autosomal Recessive. However, affected individuals are not guaranteed to express the disease/trait.

Autosomal Recessive: Two copies of a recessive allele must be present for the trait to be expressed. If an individual has two recessive alleles, the disease/trait will be expressed. If they have one recessive allele, they are a carrier but do not exhibit the trait.

Autosomal Recessive Lethal: A genetic inheritance pattern where an individual must inherit two copies of the recessive allele to express a lethal trait, typically resulting in spontaneous abortion, stillbirth or early death.

Autosomal Semi-Dominant: A mode of inheritance where the phenotype is dependent on the number of copies present. Individuals with a single copy of the affected allele express a version of the trait specific to carriers. Individuals with two copies express the version specific to affected.

Mitochondrial: Genes located in the mitochondria, outside the cell nucleus, are inherited from the mother. Both sons and daughters can inherit these genes, but only daughters pass them on to their offspring.

Multifactorial: Disease/trait is influenced by multiple genetic and/or environmental factors, and may be difficult to predict.

Resistance/Susceptibility: The genetic predisposition of an individual or organism to either resist or be susceptible to a particular condition, disease, or treatment.

Risk factor: A risk factor in genetics refers to a specific genetic variation, trait, or condition that increases the likelihood of an individual developing a particular disease or health issue.

Unknown: Refers to cases where the mode of inheritance associated with the mutation is not yet fully identified or understood.

X-Linked Dominant: Dominant alleles located on the X chromosome result in the expression of the disease or trait. In females, a single copy of the allele is sufficient. In males, who have only one X chromosome, the presence of the dominant allele leads to the trait's expression.

X-Linked Recessive: Recessive alleles on the X chromosome cause the disease/trait to be expressed in males, who have only one X chromosome with the allele. Females need two copies of the recessive allele to exhibit the disease/trait.

X-Linked Semi-domiant: A mode of inheritance where the phenotype is dependent on the number of copies present. Females with a single copy of the affected allele express a version of the trait specific to carriers. Females with two copies, and males carrying the allele, express the version specific to affected animals.

Y-Linked: Genes on the Y chromosome are passed exclusively from father to son. Traits determined by Y-linked genes are inherited in a straightforward manner down the paternal lineage.

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Bestelformulier CombiBreed – individuele hond(en) (pagina 1/2)

Instructies:

- Noteer het chipnummer van het betreffende dier op elk monster.
- Gebruik één formulier per nest, mits voor hetzelfde CombiBreed pakket gekozen wordt.
- Doe de afgenomen monsters en formulieren in de CombiBreed verzamelenvelop.
- Factuur en resultaten worden per e-mail naar de opdrachtgever verstuurd.

Contactgegevens opdrachtgever (fokker)

Naam	Rick Palte
Adres	Braamhoek 1
Postcode	7681 JK
Woonplaats	Vroomshoop
E-mail	rickpalte@outlook.com
Telefoonnummer	06 13639044
BTW-nummer	–

Gewenst CombiBreed pakket

☐ CombiBreed Health Pakket voor Honden Testcode H860
☐ Rasspecifiek CombiBreed Pakket Testcode H656 (verplicht) * Zie testlijst

Ras Nova Scotia Duck Tolling Retriever (verplicht)

Diergegevens

H644042

Chipnummer 528140000891061 (verpl sticker)

H644042

Chipnummer – (verplicht, indien mogelijk sticker)

Chipnummer – (verplicht, indien mogelijk sticker)

Chipnummer – (verplicht, indien mogelijk sticker)

Chipnummer – (verplicht, indien mogelijk sticker)

Paraaf opdrachtgever (fokker)

Paraaf vrijwilliger

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