



## Dales Pony Tales

*A newsletter of the Dales Pony Breeders Assn.  
celebrating the Dales Pony*

<http://www.dalesponybreedersassociation.org>

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### Editorial

Here's hoping that this month's newsletter finds you all well, and no matter where you may be located...ready for spring. With spring almost here...breeding and foaling season is upon us. Whether you stand your own stallion, are bringing on a young stallion prospect, or own one or several mares, there is a multitude of multitasking taking place. You may be an OG having been doing all of the above for some time now, or very new to this and the Dales Pony breed and plotting your course. There are many topics to consider when breeding and preserving the Dales pony and this can be quite overwhelming for some. Our goal is to source and provide information for all! Whether it may be topics on breeding coefficients, inbreeding and linebreeding, DNA or data, hopefully there is something for everyone. Networking amongst each other is so very important for success. Reaching out to the experts who can provide the how to is also key for all future endeavors. We have found, in the last couple of months, an enormous following of the beloved Dales pony breed. And those that asked "what is a Dales pony" have now become completely intoxicated with them. How can one resist?

Please reach out if you have any questions or specific topics that you would like shared. We do have several points and pieces of interest to share in the upcoming months that may cover those topics...or go beyond what one could possibly imagine! Stay tuned!

Pictured above is Dales pony stallion Treskewis Tom aka Havoc, who was a foundation stallion at the Canadale Pony Stud owned by Colin and Denise Dunkley and sired over 25 Dales pony foals including Canadale Little Oak, Canadale Oakley Lad, Canadale Mountain Man, Canadale Patience and Candale Lightning - some of

who are still actively breeding today. His grandson is the black stallion Blackshadow Supernova located in MA (photo credit and copyright Candale Pony Stud).

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## Spotlight

### Flying W Farms Jimmy

Jimmy, not James (he's definitely a Jimmy) was purchased about ten years ago to be her daughter's pony, explained owner Katherine von Stackelberg. And as mother/daughter pony dreams sometimes go, Jimmy soon came to be Katherine's fabulous riding pony! Garnering all of the "oohs and ahs" wherever he goes, Jimmy has proven himself to be a lovely partner. Always giving it his all, and then some, Jimmy is currently schooling 2nd level dressage and showing 1st level. Keep a look out for him in the near future though as he is fast approaching the ability to show 2nd level! Take a look at his ability to jump too! And those knees, so neatly tucked...how can you not swoon over him. This proud pony is a fantastic representative of the Dales pony breed and a true "great all rounder".

Jimmy is a 2003 gelding owned by Katherine von Stackelberg in Vermont.  
(Dykedale Duke x Swayfield Kim)





## Don't Forget...

Breeding season is quickly approaching! Don't forget to go to our website to shop for and look at stallions being offered this year. Some stallions offer limited bookings, so if you are considering a special mister for your mare, book early to reserve your breeding!



Please refer to the DPBA website for a list of breeders and stallions.

(Top: Roandale Blue Heath blue roan stallion owned by Fiddlehead Farm)

(Bottom: Blackshadow Supernova black stallion owned by Karinne Nivala)



Envoy de Kingmaker (Ziggy) owned by Downeast Dales with rider Anja Stadelman ME

Poedarosa Black Magic owned by Blackshadow Dales with rider Macy Covert NY



## Foals 2022

The Dales Pony stork has begun to make it's rounds here in North America! How many Dales foals will arrive this year...we can't wait to see!



A stunning colt Floridadales Nigel (Floridadales Blue Envoy x Earnwell Unique) foaled in February, proudly owned by Catherine York & Rob Costello of Elysium Fields Farm in Florida.



A gorgeous colt (Gullivers Smuggler x Bickerdike Precious Light) foaled in March, proudly owned by Darlene and Paul Miller of Windy Creek Farm in western New York



### NEWS!!!

The Dales Pony Breeders Association has recently gained recognition with numerous organizations



Flying W Farms Jimmy with owner Katherine von Stackelberg in VT



Greenmountain Clancy with owner Anja Stadelmann in VT.

to benefit Dales Pony owners and breeders. Please see details below for further details on future membership with the Dales Pony Breeders Association and specific benefits provided!

- The Dales Pony Breeders Association (DPBA) is now a recognized breed member of the **United States Dressage Federation (USDF)**. Membership in the DPBA is required as they will check registration of the pony with our database for participation. Dales Ponies are now eligible to qualify and compete for points, regionals, and year end awards! Please refer to the USDF link for further details and participation.
- The Dales Pony Breeders Association is now a supporting member of the **National Dressage Pony Cup**. Our members and ponies will now be invited to participate in the Devon Horse Show in



Greenmountain Forrest with rider Shannon Wallman-Hatch in VT, owned by Sarah Isham

#### Join ECTRA!

LOVE TO TRAIL RIDE?

LOOKING FOR A SPORT THE  
WHOLE FAMILY CAN ENJOY?

THEN COME RIDE WITH  
US!!!

Competitive Trail Rides offer the opportunity to ride marked trails ranging from 10 to 40 miles in a day. Events are timed, but do not use any man-made obstacles. Horses are evaluated by vets prior to, during, and after each ride. Ribbons and prizes are awarded at the end of most rides.

Pennsylvania May 26th - June 5th this year under the Dales Pony Breeders Association Banner! The Pony Cup has also advised us that they plan to organize Mountain and Moorland Shows on both the East and West Coast (tba). Membership with the DPBA will be required for this.

- Dales Pony Breeders Association has also become a recognized breed organization with [NRTA.com](http://NRTA.com). The recognition of the Dales Pony Breeders Association gives our members deep discounts on various horse related items (check out the discount on a John Deere tractor - almost 25%!) Membership with the DPBA is will also be required as NRTA will verify your affiliation to obtain benefits and discounts.
- If you like to competitive trail ride with your pony we have made an alliance with [ECTRA \(Eastern Competitive Trail Riding Assn\)](#). They will link our site



Kingmaker Talisman with owner Shuna Cerrato in WA.

and have invited us to ride with them. So if you love the trail here's a chance to join up with some fun people.

- Let's not forget our hunters and jumpers out there! The **United States Hunter Jumper Association** has just reached out and invited us to affiliate with their organization! We will provide further information in next months newsletter.

## Classifieds and ISO

Please do not forget that this space right here was created for those to share any ponies who may be thinking about a new zip code. This newsletter is currently shared in more than five countries...

(Dales pony filly Pippa owned by Valkyrie Dales in New Jersey)



## The Dales Scribe

Equine Inbreeding and Genomics

The Scribe had a delightful conversation with Dr. Bailey about our Dales Ponies, our need for diversity and the outlook for the preservation of the breed. Dr. Bailey has generously offered to host a

**Zoom seminar for those who would like to learn more and ask questions about what we can do to preserve the breed.**

Inbreeding has played a key role in the improvement of livestock breeds, resulting in more uniform populations with highly specialized performance traits. Selection for desirable traits entails identifying individuals with superior performance and often mating them to relatives (inbreeding) who possess the same superior traits. The goal of this practice is to increase the frequency of the desired characteristics and thus of the beneficial genes in the offspring. At the same time, negative consequences of inbreeding are well known. In small populations such as captive bred species, the loss of diversity associated with inbreeding is a major concern, and significant losses of diversity may lead to extinction. The increased expression of recessive deleterious genotypes can also lead to embryonic loss or other defects, some of which can be fatal. Furthermore, inbreeding can lead to a phenomenon called inbreeding depression.

Inbreeding depression is commonly manifest in poor performance of traits that are complex (due to contributions of many different genes), such as fertility and athleticism. Mindful of the dangers inherent with inbreeding, breeders traditionally balance the benefits and dangers of inbreeding by monitoring their breeding stock, culling poor performers and avoiding matings of closely related individuals.

Recently, genetic tools have become available that provide an alternative approach to unambiguously quantify and manage inbreeding relative to the traditional use of pedigrees. Today, a genomic survey of a horse's DNA may cost \$70 to \$180. A comprehensive whole genome sequence, including analyses, may cost \$1,000 to \$2,500. So far, over 1,000 horses have had their entire DNA sequenced in connection with research projects. Those genome sequences have been used to identify the genetic bases of diseases, coat colors and even some performance traits. Nevertheless, the overall performance of horses is complex, involving over 20,000 genes and probably millions of other functional elements. Studying genes one at a time is unlikely to be effective to significantly improve performance. Genomic tools, however, make it possible to identify associations between the genome and traits that contribute to success or which may cause problems.

One of the areas in which genomics excels is in determining levels of inbreeding. An animal's inbreeding coefficient is the likelihood that both parents transmitted the same piece of DNA to their offspring that they each inherited from a common ancestor. Traditionally, we measured inbreeding by identifying all common ancestors – those that appear in the paternal and maternal sides of an individual's pedigree. After common ancestors are identified, the relationship between the parents of the individual in

question can be calculated. Using this method, on average, pedigree-based inbreeding coefficients for Thoroughbred horses are reported to be between 12.5%-13.5%, however individual horses may have values that range from less than 5% to over 20%. When genomic measures have been made in other species, geneticists discovered that inbreeding levels calculated from pedigrees are poorly correlated (50%-80%) with genomic measures of inbreeding. This is not surprising since pedigrees inaccurately assume a random and equal transmission of genes each generation.

Which variant of each gene is inherited, however, is not predictable. For example, full-siblings share, on average, 50% of their genes; however, at any particular part of the genome they may share 0, 50 or 100%. Further, genes are not randomly distributed in a breed since selection practices are applied in mating horses. If we are good breeders, the genetic constitution of our current generation is not a random representation of the ancestors, but rather, a selection of the genes contributing to their success.

There are other ways to apply genomics to horse breeding. As noted above, both the genome and the traits we value are complex. Our genomic tools are powerful, and we can begin to seek genetic patterns correlated with measures valued by horse owners. The limitation for such studies is the quality and availability of data for traits related to fertility, conformation, durability and athleticism. Collecting these data and using genomics to identify genes associated with these complex traits would be a more sensible way to improve performance rather than simply seeking to limit inbreeding.

*Ernest Bailey, PhD, professor, and Ted Kalbfleisch, PhD, associate professor, both in the Department of Veterinary Science at the Gluck Equine Research Center, and Jessica Peterson, PHD, University of Nebraska-Lincoln, provided this information. Source: January 2020 Equine Disease Quarterly.*

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**The Scribe also had a conversation with Dr. David Silversides at Montreal University about an Inbreeding Calculator developed by Langenvet. The following article written by Dr. Silversides explains**

how to calculate the inbreeding coefficient. Be sure to visit the link at the end of the article to go to the calculator.

## Horse Genetics 4.1: Inbreeding Calculator, Detailed Instructions and Interpretation

The Inbreeding Calculator is provided to breeders as a simple and rapid tool for calculating the inbreeding coefficient of an animal based on its pedigree. It is designed to be helpful in performing virtual breeding trials as an aid in making management decisions. The calculator is based on four generations of ancestors (parents, grandparents, great-grand parents and great-great-grandparents), including 30 ancestors in total, using a simplified version of the formula proposed by Sewell Wright for calculating inbreeding coefficients:

In order to further simplify the process, a number is used to designate a specific animal within the pedigree, rather than the complete name of the animal which can be cumbersome. For the first parental pedigree (Pedigree A with ancestors numbered 1 to 15), the numbers are fixed and the parent (animal #1) can be the father or the mother of the offspring in question. For the second parental pedigree (Pedigree B, with ancestors numbered 16 to 30), the numbers can be changed to match common ancestors found in the first parental pedigree. The relative position of common ancestors between the two parental pedigrees is important for the function of the calculator. It is important to note that ancestors in common within a parental pedigree are not utilized in the calculation, only ancestors in common between the parental pedigrees. This further simplification may result in an underestimation of the absolute value of the inbreeding coefficient calculated for a given animal, however this should not interfere with conclusions made when comparing pedigrees and potential mating partners when performing virtual crosses.

The Inbreeding Calculator is provided as a tool for breeders and is the result of the vision and implementation of Benoit Bouchard, MsEng, a long-time breeder of Pug dogs, in collaboration with Labgenvet and with the help and consultation of Dr. Guy Labbé, DVM. It must be stated that an inbreeding coefficient is just one tool amongst many others available to breeders to help them in making breeding decisions. Breeders are responsible for having an adequate understanding of inbreeding coefficients and for a judicious use of the calculator.

### Calculate the inbreeding coefficient for a given animal

To calculate the inbreeding coefficient for a given animal, the paternal pedigree (Pedigree A, representing ancestors 1 to 15) is compared to the maternal

pedigree (Pedigree B, representing ancestors 16 to 30). The relative position of an ancestor in common between the paternal and maternal pedigrees is important for the proper functioning of the calculator. Note that in Pedigree A, positions 2, 4, 6, 8, 10, 12 and 14 are marked by blue rectangles and represent male animals while positions 3, 5, 7, 9, 11, 13 and 15 are marked by pink rectangles and represent female animals. In a similar fashion, in Pedigree B, positions 17, 19, 21, 23, 25, 27 and 29 represent male animals while positions 18, 20, 22, 24, 26, 28 and 30 represent female animals.

Evidently, for ancestors in common between the two pedigrees, male animal numbers from Pedigree A (2, 4, 6, 8, 10, 12 and 14) should only replace male positions in Pedigree B (17, 19, 21, 23, 25, 27 and 29). In a similar fashion, female animal numbers from Pedigree A (3, 5, 7, 9, 11, 13 and 15) should only replace female positions in Pedigree B (18, 20, 22, 24, 26, 28 and 30). The positions of the parents are marked by yellow rectangles. If the father is represented by position 1 in Pedigree A then the mother will be represented by position 16 in Pedigree B. Alternatively, if the mother is represented by position 1 in Pedigree A then the father will be represented by position 16 in Pedigree B.

In this version of the calculator, the inbreeding coefficient is calculated based on common ancestors found between the two parental pedigrees but does not consider common ancestors within parental pedigrees. Remember to reinitialize the calculator between calculations by pressing the Reset button.

Calculate the inbreeding coefficient of a possible offspring resulting from a virtual cross

Your animal is represented as animal 1 in the upper parental pedigree (Pedigree A, with animals 1 to 15) and can be either the potential father or mother. The animal that you are considering as a potential breeding partner is represented by animal 16 in the lower parental pedigree (Pedigree B, with animals 16 to 30). The numbers in the lower parental pedigree are changed to reflect common ancestors with the pedigree of your animal. The relative position of an ancestor in common between the paternal and maternal pedigrees is important for the proper functioning of the calculator. In this version of the calculator, the inbreeding coefficient of the potential offspring resulting from the virtual breeding of the proposed parents is calculated based on common ancestors between the two parental pedigrees; common ancestors within parental pedigrees are not considered. Do not forget to reinitialize the calculator between calculations by pressing the Reset button.

## **Interpretation of inbreeding coefficients**

An elevated inbreeding coefficient for an animal indicates that the undesirable effects of inbreeding (i.e. inbreeding depression) will start to be evident. On the other hand, an elevated inbreeding coefficient will increase the chances that desirable traits associated with the breed in question will be fixed. Thus, the inbreeding coefficient can be viewed as a compromise. The deleterious effects associated with inbreeding start to be seen when the coefficient of inbreeding is higher than 5%, which is just below the value obtained for the offspring of a

mating between two cousins (=6.25%). It is advised to maintain a coefficient of inbreeding that is below 10% which should allow a number of desired traits to be fixed without allowing the undesirable effects of inbreeding to become too pronounced. Incestuous crosses resulting in offspring with coefficients of inbreeding above 12.5% should not be performed; these include parent-offspring, brother-sister, grandparent-grandchild and half-brother-half-sister matings. In practice it is recommended to choose crosses that will result in offspring that have reduced coefficients of inbreeding compared to the average of the breed in question. If a number of breeding possibilities are available that will reduce the average inbreeding coefficient within the offspring compared to the breed average, then ideally the breeding that will result in the lowest inbreeding coefficient while still maintaining the desired traits for the breed is recommended.

General recommendations for breeding:

1. Choose crosses that will reduce the inbreeding coefficient of the resulting offspring relative to the average for the breed (if this is available).
2. If possible, avoid using an animal with common ancestors within its pedigree, at least not within the 3 to 4 most recent generations.
3. Avoid incestuous breedings, with inbreeding coefficients of 12.5% and above.
4. Keep inbreeding coefficients below 10%.
5. Try to keep inbreeding coefficients below 5%.
6. Think about sacrificing a bit of "type" for the sake of preserving the genomic health of your breed.

Link to: [Inbreeding Calculator](#)

Link to: [Horse Genetics 4.0: Evolution, Domestication, Breeds and Breeding Strategies and Inbreeding](#)

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Send suggestions and submissions to [DalesPonyBreeders@gmail.com](mailto:DalesPonyBreeders@gmail.com)

Looking forward to getting to know you,  
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