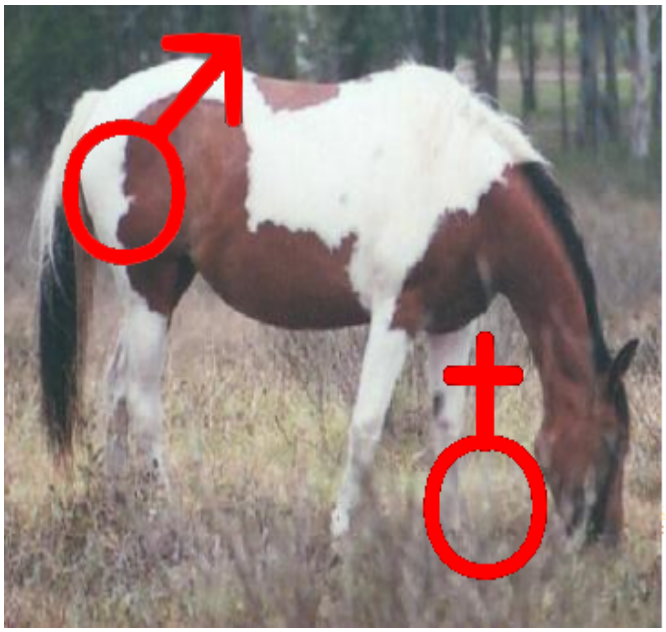

EQUINE
GENETIC
CALCULATOR

Version 1
2006

Created by K Yorke

GENETIC CALCULATOR (HORSE COLOUR)
Help File

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GENETIC CALCULATOR (HORSE COLOUR)
Help File

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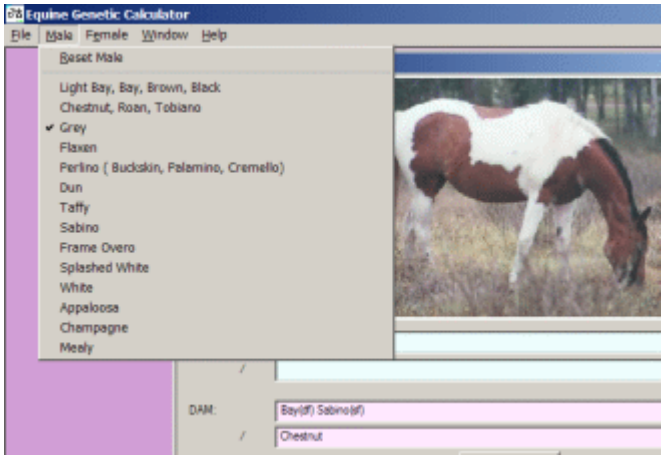

The following menu selections are used to progressively build up the descriptions of the Sire and Dam one colour/feature at a time in the Mating Window.

MALE/FEMALE Menu

- Reset
- Light Bay, Bay, Brown, Black
- Chestnut, Roan, Tobiano
- Flaxen
- Perlino, Buckskin, Palamino, Cremello
- Dun
- Taffy
- Grey
- Sabino
- Frame Overo
- Splashed White
- White
- Appaloosa
- Champagne
- Mealy

It is important to understand that Equine Genetic Calculator uses **genetic horse names** to describe horse colours. Only the genetic names give the horse's true breeding potential. Many **colloquial horse names** pre-date genetic knowledge and do not accurately reflect a horses true colour breeding ability. In fact, many colloquial names have been used to describe entirely different colours, and may vary from breed to breed.

Unsupported varieties still undergoing genetic research:-
Extension Brown, Extension Black, Sabino2, Sooty, Brindle, BendOr Spots

N.B. The FULL REPORT and SUMMARY (EXCLUDING SEX) REPORT options of the FILE

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CALCULATE menu will produce identical reports as there are no horse colours which are linked to horse gender (unlike many other species).

2 Reset

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The Reset menu is a fast method of deselecting all previously selected varieties and resetting the male or female parent description to its original default settings when the Mating Window was first opened.

3 Light Bay, Bay, Brown, Black

LIGHT BAY, BAY, BROWN, BLACK Top Previous Next

This menu opens the Variety Combination Window containing a list of all possible genetic combinations involving the Light Bay, Bay, Brown and Black horses.

To change the parent horse description, click the mouse on the desired item in the list and press SELECT/DONE.

Photographs of some items in the list can be viewed if a camera icon appears in the PICTURE column. Highlight the desired item in the list with the mouse and press the SHOW PICTURE button.

VARIETY INFORMATION
The genes for the Light Bay, Bay, Brown and Black varieties exist at the same chromosome location and are multiple alleles. Light Bay is dominant over Bay, Brown and Black. Bay is dominant over Brown and Black. Brown is dominant over Black. This group of related colours is called the Agouti series. One of these colours forms the “base” colour of all other horse colours. (Chestnut is also sometimes classed as a base colour depending on point of view).

In most breeds, Bay is the most common colour and in some breeds the Light Bay is not recognised. The Light Bay has very minimal dark points.

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Some breeds do not recognise Brown as a separate colour and treat it as a darker (modified) form of Bay. In fact, an alternative genetic theory does not recognise the existence of the Brown allele in the Agouti series (recognising only Bay and Black alleles). Genetic laboratory tests are available for the presence of Bay and Black alleles. Equine Genetic Calculator uses the Brown allele genetic model and for those people who wish to use the genetic model which ignores Brown (and Light Bay) then simply ignore the menu selections referring to Brown (and Light Bay) and this alternative model thus will also work equally well in Equine Genetic Calculator.

Within the categories of Bay, Brown and even Black, there are many physical colour variations which have unfortunately been given many inconsistent colloquial names. Most of these names are still the subject of debate and most do not as yet have solid genetic analysis or theory. Such colour variations are beyond the scope of Equine Genetic Calculator as the relevant genetic theory is unknown at the present time. Some of the colloquial names are mentioned below for reference only.

A further unproved genetic theory postulates the existence of a Brown allele and a dominant Black allele as part of the Extension series (which is most notably responsible for Chestnut colours). Equine Genetic Calculator does not support this implementation of Extension Brown nor Extension Black.

TERMINOLOGY
The “/” symbol in genetic descriptions of parents and/or offspring is pronounced “SPLIT”. Descriptions to the left of the “/” symbol are visible to the eye, whereas descriptions to the right of the “/” symbol are carried in non-visible (hidden) form.

E.G. “Bay / Brown” (read “Bay split Brown”) describes a bay coloured horse which carries the hidden ability to potentially pass on the gene for Brown colour to its foals.

ALTERNATIVE NAMES
Bay = Blood Bay
Bay = Mahogany Bay
Bay = Red Bay
Bay = Standard Bay
Bay = Copper Bay
Bay = Cherry Bay
Bay = Honey Bay
Bay = Copper Bay
Bay = Golden Bay
Bay = Light Bay (N.B. This is not the Light Bay allele, but a light form of conventional Bay)
Brown = “Black And Tan” = Seal Brown
Black = Jet Black = Raven Black = Non-Fading Black

4 Chestnut, Roan, Tobiano

CHESTNUT, ROAN, TOBIANO

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This menu opens the Variety Combination Window containing a list of all possible genetic combinations involving the Chestnut, Roan and Tobiano horses.

To change the parent horse description, click the mouse on the desired item in the list and press

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SELECT/DONE.

Photographs of some items in the list can be viewed if a camera icon appears in the PICTURE column. Highlight the desired item in the list with the mouse and press the SHOW PICTURE button.

Selecting NORMAL from this list means that the selected horse contains no other genes from the list, but may or may not contain genes from other lists in other Variety Combination windows,

VARIETY INFORMATION
The Chestnut, Roan and Tobiano genes exist at different locations on the same chromosome.

The Chestnut gene is recessive to Normal (i.e non-chestnut). The Chestnut gene is also called the Extension locus in genetic literature.

Two alternative theories exist as to the explanation for various subtle shades of Chestnut:-
1) Chestnut shades may be altered by various base colours of Light Bay, Bay, Brown and Black and in addition by unnamed modifier genes. OR
2) Chestnut shades are not influenced by base colours of Light Bay, Bay, Brown and Black, but may be altered by unnamed modifier genes.

Either theory makes no difference to the genetic inheritance of the Chestnut gene, but debate still exists about naming and true genetic nature of the various shades of Chestnut.

Chestnut is often classed as a base colour, (in addition to the Light Bay, Bay, Brown and Black group).

Unproved genetic theories postulate the existence of a Dominant Black allele and/or a Dominant Brown allele as part of the Extension series. Equine Genetic Calculator does not support this implementation of Extension Black nor Extension Brown.

The Roan gene is a dominant gene which adds white hairs to a base colour giving the impression of a new colour. All roans are single factor. It is believed that the double factor Roan does not exist as potential double factor Roan embryos appear to abort. (Extremely rarely, surviving potentially double factor Roans are reported, but they are so rare as to be the exception rather than the rule, and in fact may be caused by other additional factors)

The Tobiano gene is a dominant gene which adds white patches on top of any colour. The white patches generally spread down from the spine and up from the legs. The difference between single factor and double factor Tobiano horses cannot reliably be determined by visual inspection. The size of the white patches varies considerably from completely white body to completely normal body (the latter being the likely source of “Crop out” individuals).

As the Chestnut, Roan and Tobiano genes are all located on the same chromosome they are “ linked” genes and thus need to be looked at in the context of both a group and an individual basis. Linked genes are generally inherited together as a group but can also split apart during a “ crossover” phenomenon and thus be inherited in rearranged combinations. Exact crossover values are not known yet for these three genes, but the order of the genes in the chromosome is known. The total crossover value between Roan and Chestnut is believed to be in the order of 6%. Crossovers between Roan and Tobiano are believed to be much less frequent than crossovers between Tobiano and Chestnut. Equine Genetic Calculator uses assumed indicative crossover values of Roan – 1% -- Tobiano – 5% -- Chestnut.

Due to gene crossovers some individuals containing Roan, Tobiano and/or Chestnut multiple combinations in their makeup can be configured as Type 1 or Type 2. The strict definition of a Type 1 individual is that the most recessive genes lie on the same chromosome. Type 2 individuals have the most recessive genes on opposite chromosomes. For example:-. Roan(sf)

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Tobiano(sf) Type 1/Chestnut Type 1 has the Roan, Tobiano and non-Chestnut genes on one chromosome and non-Roan, non-Tobiano and Chestnut genes on the other chromosome. These Type 1 and Type 2 combinations look visually identical and produce the same colours of offspring, BUT the relative percentages of the various colours of offspring will be different.

Recent research proposes that the White and Sabino genes may also be located on this same chromosome very near the Tobiano locus, however until this research is finalised Equine Genetic Calculator treats the White and Sabino genes as independently inherited genes.

TERMINOLOGY
The "/" symbol in genetic descriptions of parents and/or offspring is pronounced "SPLIT". Descriptions to the left of the "/" symbol are visible to the eye, whereas descriptions to the right of the "/" symbol are carried in non-visible (hidden) form.

E.G. "Normal / Chestnut" (read "Normal split Chestnut") describes a non-chestnut coloured horse (typically Bay or Brown etc) which carries the hidden ability to potentially pass on the gene for Chestnut colour to its foals.

The "(df)" symbol in genetic descriptions of parents and/or offspring is an abbreviation for " double factor" meaning it has two genes for the characteristic. The "(sf)" symbol in genetic descriptions of parents and/or offspring is an abbreviation for "single factor" meaning it has one gene for the characteristic and one gene not for the characteristic.

ALTERNATIVE NAMES
Light Bay Chestnut = Light Chestnut (theory 1)
Bay Chestnut = Red Chestnut (theory 1)
Brown Chestnut = Standard Chestnut (theory 1)
Black Chestnut = Liver Chestnut (theory 1)
Light Bay Chestnut = Chestnut (theory 2)
Bay Chestnut = Chestnut (theory 2)
Brown Chestnut = Chestnut (theory 2)
Black Chestnut = Chestnut (theory 2)
(N.B. All Chestnut (theory 2) above can each be in various colloquially named shades, e.g. Liver, Red, Light, Golden, Copper, Yellow, Sorrel etc)
Dominant Black = Extension Black
Tobiano = Painted = Pinto = Pied = Piebald = Skewbald
Tobiano Frame Overo(sf) = Tobero
Tobiano Sabino = Tobino
Tobiano Sabino Frame Overo(sf) = Tovino

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This menu opens the Variety Combination Window containing a list of all possible genetic combinations involving the Flaxen horses.

To change the parent horse description, click the mouse on the desired item in the list and press

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SELECT/DONE.

Photographs of some items in the list can be viewed if a camera icon appears in the PICTURE column. Highlight the desired item in the list with the mouse and press the SHOW PICTURE button.

Selecting NORMAL from this list means that the selected horse contains no other genes from list, but may or may not contain genes from other lists in other Variety Combination windows,

VARIETY INFORMATION
The Flaxen gene is recessive to Normal (i.e non-flaxen). Flaxen lightens the tail and mane. Flaxen is almost exclusively only visible when combined with Chestnut.

A Flaxen Bay (i.e. non-Chestnut) generally will not display Flaxen characteristics despite being genetically Flaxen. (Rare examples do display the characteristic as light streaks in a normally black mane or tail)

An alternative genetic theory postulates that Flaxen is a polygenic trait, however until proof of such is found, Equine Genetic Calculator uses the simpler recessive gene model.

TERMINOLOGY
The "/" symbol in genetic descriptions of parents and/or offspring is pronounced "SPLIT". Descriptions to the left of the "/" symbol are visible to the eye, whereas descriptions to the right of the "/" symbol are carried in non-visible (hidden) form.

E.G. "Normal / Flaxen" (read "Normal split Flaxen") describes a non-flaxen coloured horse which carries the hidden ability to potentially pass on the gene for Flaxen colour to its foals.

6 Perlino, Buckskin, Palamino, Cremello

PERLINO

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This menu opens the Variety Combination Window containing a list of all possible genetic combinations involving the Perlino horses.

To change the parent horse description, click the mouse on the desired item in the list and press SELECT/DONE.

Photographs of some items in the list can be viewed if a camera icon appears in the PICTURE column. Highlight the desired item in the list with the mouse and press the SHOW PICTURE button.

Selecting NORMAL from this list means that the selected horse contains no other genes from list, but may or may not contain genes from other lists in other Variety Combination windows,

VARIETY INFORMATION
The Perlino gene is a partial dominant gene which dilutes the base colour. Double factor Perlinos are visually Perlino. Single factor Perlinos are visually Buckskin. Buckskins can never be double

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factor for the Perlino gene.

Double factor Perlino combined with Chestnut is called Cremello. Single factor Perlino (i.e. Buckskin) combined with Chestnut is called Palamino.

TERMINOLOGY
The “(df)” symbol in genetic descriptions of parents and/or offspring is an abbreviation for “ double factor” meaning it has two genes for the characteristic. The “(sf)” symbol in genetic descriptions of parents and/or offspring is an abbreviation for “single factor” meaning it has one gene for the characteristic and one gene not for the characteristic.

ALTERNATIVE NAMES
Bay Perlino(df) = Perlino
Brown Perlino(df) = Perlino
Black Perlino(df) = Smoky Perlino = Smoky Cream
Chestnut Perlino(df) = Cremello = Cream = Creme
Buckskin = Perlino(sf)
Light Bay Chestnut Buckskin = Cream Palamino
Bay Chestnut Buckskin = Golden Palamino
Brown Chestnut Buckskin = Palamino
Black Chestnut Buckskin = Chocolate Palamino

7 Dun

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This menu opens the Variety Combination Window containing a list of all possible genetic combinations involving the Dun horses.

To change the parent horse description, click the mouse on the desired item in the list and press SELECT/DONE.

Photographs of some items in the list can be viewed if a camera icon appears in the PICTURE column. Highlight the desired item in the list with the mouse and press the SHOW PICTURE button.

Selecting NORMAL from this list means that the selected horse contains no other genes from list, but may or may not contain genes from other lists in other Variety Combination windows,

VARIETY INFORMATION
The Dun gene is a dominant gene which dilutes the base colour. The Dun gene also produces varying degrees of primitive markings such as dorsal stripe, shoulder stripe, leg barring etc.

Double factor and single factor Duns are visually identical.

TERMINOLOGY

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The “(df)” symbol in genetic descriptions of parents and/or offspring is an abbreviation for “ double factor” meaning it has two genes for the characteristic. The “(sf)” symbol in genetic descriptions of parents and/or offspring is an abbreviation for “single factor” meaning it has one gene for the characteristic and one gene not for the characteristic.

ALTERNATIVE NAMES
Dun = Linebacked Dun
Bay Dun = Yellow Dun
Brown Dun = Mouse Dun
Black Dun = Blue Dun = Grullo
Chestnut Dun = Red Dun

8 Taffy

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This menu opens the Variety Combination Window containing a list of all possible genetic combinations involving the Taffy horses.

To change the parent horse description, click the mouse on the desired item in the list and press SELECT/DONE.

Photographs of some items in the list can be viewed if a camera icon appears in the PICTURE column. Highlight the desired item in the list with the mouse and press the SHOW PICTURE button.

Selecting NORMAL from this list means that the selected horse contains no other genes from list, but may or may not contain genes from other lists in other Variety Combination windows,

VARIETY INFORMATION
The Taffy gene is a dominant gene which dilutes black pigment. Dappling is sometimes present. The single factor and double factor Taffy horses are visually identical.

Chestnut combined with Taffy is barely visible.

TERMINOLOGY
The “(df)” symbol in genetic descriptions of parents and/or offspring is an abbreviation for “ double factor” meaning it has two genes for the characteristic. The “(sf)” symbol in genetic descriptions of parents and/or offspring is an abbreviation for “single factor” meaning it has one gene for the characteristic and one gene not for the characteristic.

ALTERNATIVE NAMES
Bay Taffy = Red Taffy
Brown Taffy = Dark Taffy
Black Taffy = Chocolate Taffy = Silver Dapple

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GREY

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This menu opens the Variety Combination Window containing a list of all possible genetic combinations involving the Grey horses.

To change the parent horse description, click the mouse on the desired item in the list and press SELECT/DONE.

Photographs of some items in the list can be viewed if a camera icon appears in the PICTURE column. Highlight the desired item in the list with the mouse and press the SHOW PICTURE button.

Selecting NORMAL from this list means that the selected horse contains no other genes from list, but may or may not contain genes from other lists in other Variety Combination windows,

VARIETY INFORMATION
The Grey gene is a dominant gene which progressively alters all colours to shades of grey. Grey horses are born a base colour and gradually change to grey with age. Dappling or ticking is sometimes present. The single factor and double factor Grey horses are visually identical.

TERMINOLOGY
The “(df)” symbol in genetic descriptions of parents and/or offspring is an abbreviation for “ double factor” meaning it has two genes for the characteristic. The “(sf)” symbol in genetic descriptions of parents and/or offspring is an abbreviation for “single factor” meaning it has one gene for the characteristic and one gene not for the characteristic.

10 Sabino

SABINO

This menu opens the Variety Combination Window containing a list of all possible genetic combinations involving the Sabino horses.

To change the parent horse description, click the mouse on the desired item in the list and press SELECT/DONE.

Photographs of some items in the list can be viewed if a camera icon appears in the PICTURE column. Highlight the desired item in the list with the mouse and press the SHOW PICTURE button.

Selecting NORMAL from this list means that the selected horse contains no other genes from

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list, but may or may not contain genes from other lists in other Variety Combination windows,

VARIETY INFORMATION
The Sabino gene (called Sabino-1 by geneticists) is a dominant gene which adds white patches on top of any colour. The white patches are generally ragged and spotty and spread up the legs and underbelly. The double factor Sabino horses tend to display more white areas than single factor Sabino horses, however this is not a conclusive indication. A genetic laboratory test exists for presence of the Sabino-1 gene.

The size of the white patches varies considerably from completely white body (called Sabino-White) to completely normal body (the latter being the likely source of “Crop out” individuals).

Minor white markings (particularly lower legs and face) on solid base colour horses may also be related to Sabino. Research is ongoing.

Recent research proposes that the White and Sabino-1 genes may be located on the same chromosome as Roan, Tobiano and Chestnut very near the Tobiano locus, however until this research is finalised, Equine Genetic Calculator treats the White and Sabino-1 genes as independently inherited genes.

There is a high probability that more than one Sabino gene exists, with the other proposed Sabino gene (Sabino-2) located on a different chromosome. It appears that some horse breeds have the Sabino-1 gene and others have an as yet unlocated different Sabino-2 gene. Equine Genetic Calculator supports the Sabino-1 gene only.

The Sabino horse is also likely to have other unnamed modifier genes which may affect the size of white areas on a Sabino horse. Research is ongoing.

Older literature and some regional naming systems refer to Sabino as “Overo”, but the term “ Overo” is better restricted to the Frame Overo.

TERMINOLOGY
The “(df)” symbol in genetic descriptions of parents and/or offspring is an abbreviation for “ double factor” meaning it has two genes for the characteristic. The “(sf)” symbol in genetic descriptions of parents and/or offspring is an abbreviation for “single factor” meaning it has one gene for the characteristic and one gene not for the characteristic.

ALTERNATIVE NAMES
Sabino = Painted = Pinto = Pied = Piebald = Skewbald
Tobiano Sabino = Tobino
Tobiano Sabino Overo(sf) = Tovino
Sabino Overo(sf) = Sabero
Sabino = Sabino-1

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This menu opens the Variety Combination Window containing a list of all possible genetic combinations involving the Frame Overo horses.

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To change the parent horse description, click the mouse on the desired item in the list and press SELECT/DONE.

Photographs of some items in the list can be viewed if a camera icon appears in the PICTURE column. Highlight the desired item in the list with the mouse and press the SHOW PICTURE button.

Selecting NORMAL from this list means that the selected horse contains no other genes from list, but may or may not contain genes from other lists in other Variety Combination windows,

VARIETY INFORMATION
The Frame Overo gene is a dominant gene which adds white patches on top of any colour. The white patches generally spread horizontally along the ribs. White face and dark legs is common. The size of the white patches varies considerably from completely white body to completely normal body (the latter being the likely source of “Crop out” individuals).

All surviving Frame Overos are single factor. All double factor Frame Overos are born all white and die shortly after birth. (Equine Genetic Calculator ignores double factor Frame Overo foals in calculations as they all die)

TERMINOLOGY
The “(df)” symbol in genetic descriptions of parents and/or offspring is an abbreviation for “ double factor” meaning it has two genes for the characteristic. The “(sf)” symbol in genetic descriptions of parents and/or offspring is an abbreviation for “single factor” meaning it has one gene for the characteristic and one gene not for the characteristic.

ALTERNATIVE NAMES
Frame Overo(sf) = Painted = Pinto = Pied = Piebald = Skewbald
Frame Overo(df) = Lethal White
Tobiano Frame Overo(sf) = Tobero
Tobiano Sabino Frame Overo(sf) = Tovino
Sabino Frame Overo(sf) = Sabero

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This menu opens the Variety Combination Window containing a list of all possible genetic combinations involving the Splashed White horses.

To change the parent horse description, click the mouse on the desired item in the list and press SELECT/DONE.

Photographs of some items in the list can be viewed if a camera icon appears in the PICTURE column. Highlight the desired item in the list with the mouse and press the SHOW PICTURE button.

Selecting NORMAL from this list means that the selected horse contains no other genes from list, but may or may not contain genes from other lists in other Variety Combination windows,

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VARIETY INFORMATION
The Splashed White gene is a dominant gene which adds white patches on top of any colour. The white patches generally spread horizontally along the bottom half of the horse and legs. White face with blue eyes is common. Many Splashed Whites are deaf. All Splashed Whites are single factor. It is believed that the double factor Splashed White does not exist as potential double factor Splashed White embryos appear to abort.

Older literature and some regional naming systems refer to Splashed White as “Overo”, but the term “Overo” is better restricted to the Frame Overo.

TERMINOLOGY
The “(df)” symbol in genetic descriptions of parents and/or offspring is an abbreviation for “ double factor” meaning it has two genes for the characteristic. The “(sf)” symbol in genetic descriptions of parents and/or offspring is an abbreviation for “single factor” meaning it has one gene for the characteristic and one gene not for the characteristic.

ALTERNATIVE NAMES
Splashed White(sf) = Painted = Pinto = Pied = Piebald = Skewbald

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This menu opens the Variety Combination Window containing a list of all possible genetic combinations involving the Dominant White horses.

To change the parent horse description, click the mouse on the desired item in the list and press SELECT/DONE.

Photographs of some items in the list can be viewed if a camera icon appears in the PICTURE column. Highlight the desired item in the list with the mouse and press the SHOW PICTURE button.

Selecting NORMAL from this list means that the selected horse contains no other genes from list, but may or may not contain genes from other lists in other Variety Combination windows,

VARIETY INFORMATION
The Dominant White gene is a dominant gene. All Dominant Whites are single factor. It is believed that the double factor Dominant White does not exist, as potential double factor White embryos appear to abort. There is even some conjecture that even the single factor White does not exist or is extinct as most white coloured horses can be explained as Sabino white.

Recent research proposes that the White and Sabino-1 genes may be located on the same chromosome as Roan, Tobiano and Chestnut very near the Tobiano locus, however until this research is finalised, Equine Genetic Calculator treats the White and Sabino-1 genes as independently inherited genes.

TERMINOLOGY
The “(df)” symbol in genetic descriptions of parents and/or offspring is an abbreviation for “

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double factor" meaning it has two genes for the characteristic. The "(sf)" symbol in genetic descriptions of parents and/or offspring is an abbreviation for "single factor" meaning it has one gene for the characteristic and one gene not for the characteristic.

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This menu opens the Variety Combination Window containing a list of all possible genetic combinations involving the Appaloosa horses.

To change the parent horse description, click the mouse on the desired item in the list and press SELECT/DONE.

Photographs of some items in the list can be viewed if a camera icon appears in the PICTURE column. Highlight the desired item in the list with the mouse and press the SHOW PICTURE button.

Selecting NORMAL from this list means that the selected horse contains no other genes from list, but may or may not contain genes from other lists in other Variety Combination windows,

VARIETY INFORMATION
The Appaloosa gene is a dominant gene which causes various spotting patterns, mottled face, striped hooves and white sclera in the eye. Strictly speaking, Appaloosa is a breed of horse, however the term Appaloosa has become commonly used for spotted horses of most breeds. Appaloosa spotting is also called "Leopard Complex".

The most highly desired Appaloosa spotting patterns such as Leopard, Snowcap, Blanket, Spotted Blanket, Snowflake, Speckled, Varnish, Mottle etc may be the result of other modifier genes acting in conjunction with the Appaloosa gene. Research is ongoing.

Double factor Appaloosa tends to be more highly marked than single factor Appaloosa. Most " Few Spot Leopards" and "Snowcap Blankets" are double factor. Males tend to be slightly more highly marked than females.

TERMINOLOGY
The "(df)" symbol in genetic descriptions of parents and/or offspring is an abbreviation for " double factor" meaning it has two genes for the characteristic. The "(sf)" symbol in genetic descriptions of parents and/or offspring is an abbreviation for "single factor" meaning it has one gene for the characteristic and one gene not for the characteristic.

ALTERNATIVE NAMES
Appaloosa = Leopard Complex

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This menu opens the Variety Combination Window containing a list of all possible genetic combinations involving the Champagne horses.

To change the parent horse description, click the mouse on the desired item in the list and press SELECT/DONE.

Photographs of some items in the list can be viewed if a camera icon appears in the PICTURE column. Highlight the desired item in the list with the mouse and press the SHOW PICTURE button.

Selecting NORMAL from this list means that the selected horse contains no other genes from list, but may or may not contain genes from other lists in other Variety Combination windows,

VARIETY INFORMATION
The Champagne gene is dominant to Normal (i.e. Non-Champagne). Champagne dilutes black pigments to pale brown and red pigments (chestnut) are diluted to yellow. There is no discernible difference between double factor and single factor Champagnes.

TERMINOLOGY
The “(df)” symbol in genetic descriptions of parents and/or offspring is an abbreviation for “ double factor” meaning it has two genes for the characteristic. The “(sf)” symbol in genetic descriptions of parents and/or offspring is an abbreviation for “single factor” meaning it has one gene for the characteristic and one gene not for the characteristic.

ALTERNATIVE NAMES
Bay Champagne = Amber Champagne
Black Champagne = Champagne
Chestnut Champagne = Gold Champagne
Chestnut Buckskin Champagne = Palamino Champagne = Ivory Champagne

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This menu opens the Variety Combination Window containing a list of all possible genetic combinations involving the Mealy horses.

To change the parent horse description, click the mouse on the desired item in the list and press SELECT/DONE.

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Photographs of some items in the list can be viewed if a camera icon appears in the PICTURE column. Highlight the desired item in the list with the mouse and press the SHOW PICTURE button.

Selecting NORMAL from this list means that the selected horse contains no other genes from list, but may or may not contain genes from other lists in other Variety Combination windows,

VARIETY INFORMATION
The Mealy gene is dominant to Normal. Its causes pale yellowish colouration most noticeably around the muzzle and eyes and also underbelly, flanks and inside legs. There is no discernible difference between double factor and single factor Mealy. Mealy is also commonly called by its Spanish derived name Pangare.

ALTERNATIVE NAMES
Mealy = Pangare
Mealy Chestnut = Sorrel
Mealy Black = Seal Brown

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Tobiano 6

- V -

Varnish 16

- W -

White 15

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