

Further Possibilities

Less Common Breeds, Their Colors and Patterns

by Lesli Kathman

When the first charts on breed color possibilities were published, only the most common breeds were included. At the time it was difficult to get complete information on some of the less common breeds, particularly those bred almost exclusively in foreign countries. The internet and the widespread practice of placing registry databases online has changed that.

It should be noted that while many of these breeds might seem exotic to American showers, in many cases they are quite common in their native country. There were, for instance, over 1,500 Zimmokrwista - or Polish Heavy Draft - foals registered in 2004. Contrast that with the far better known Suffolk Punch, where the entire population in its home country is less than 100. Others, while not necessarily numerous, were included for the unusual colors and body types they offer for those wishing to find a good match for a model.

As with the previous charts, the information presented here focuses on what is possible within each breed. Color restrictions have been noted, but it should be remembered that the changing climate regarding horse color has caused many registries to question such rules. Some have relaxed or even eliminated restrictions, particularly when the breed already has a limited gene pool. In some instances, outside or previously lost colors have been intentionally reintroduced. Permissible colors, therefore, can and do change.

Finally, for the sake of consistency and clarity, the charts classify colors based on currently accepted genetic nomenclature rather than terms used by each registry.

Categories

Definitive: When all registered horses are a color or that color is considered a defining point of the breed, it is listed as Definitive.

Uniform: The color is uniformly present throughout the population.

Common: These are the colors most closely associated with the breed, and could be considered most typical.

Present: These are colors that are found within the breed, but may not be as frequently seen, or may only be found in specific bloodlines or breeding groups.

Rare: Rare colors are those considered unusual for the breed, but that have been confirmed as present.

Suspected: When evidence suggests that the color may be found within the breed, but no solid proof has been found, it is noted as Suspected.

Not Present: Colors not thought to exist in the breeding population are listed as Not Present. (Given the nature of proving a negative, this designation can change, especially for breeds with open stud books.)

Prohibited: This indicates that the color is specifically barred from either registration or consideration in the show ring. Unless noted, this refers to the breed as it exists in its country of origin. Registries in other countries may have different rules.

Restricted: This generally refers to those patterns of white that are found in the breed, but are restricted in some way by the registry. In some cases, this might mean that there are gender restrictions, or that only minimally marked individuals can be registered while more obviously patterned horses are denied papers.

Historical: Historical colors are those known to have once occurred in the breeding population, but have been lost over time.

Not Determined: When information is not available to prove or disprove the existence of a color in the breed, it is listed as Not Determined. This notation does not mean the color is not present, only that the author does not have definitive information to make the determination.

Test Confirmed: When test results have been made public to confirm the presence of a color, this is noted. The absence of the notation is not meant to imply that no horse has tested positive, since results are not always publicized. (It should be noted as well that many colors and patterns cannot yet be tested.)

Base Colors

The building blocks of horse color are the base colors: chestnut, black, brown and bay. Whatever other colors and patterns are present on any given horse, he will also be one of these four colors. If one of those colors is missing in the breed, then all the colors that are built from that

Breed	Chestnut	Black	Bay	Modified
Abaco Barb	Not Present	Not Present	Uniform	Sometimes
Australian Pony	Common	Common	Common	Sometimes
Australian Stock Horse	Present	Present	Common	Sometimes
Boulonnais	Common	Rare	Historical	Usually
Breton	Common	Rare	Rare	Sometimes
Camargue	Present	Present	Present	Always
Campolina	Present	Present	Common	Usually
Cold-blooded Trotter	Present	Common	Common	Sometimes
Comtois	Rare	Rare	Common	Usually
Dole	Present	Common	Common	Sometimes
Dutch Harness Horse	Common	Present	Present	Sometimes
Dutch Warmblood	Present	Present	Common	Sometimes
Estonian Native	Common	Present	Present	Sometimes
Felin Pony	Common	Common	Common	Usually
Finnish Horse	Common	Rare	Rare	Sometimes
Frederiksborg	Common	Rare	Present	Sometimes
Freiberger	Common	Rare	Common	Sometimes
Gelderlander	Common	Present	Present	Usually
Gotland (Russ)	Present	Rare	Common	Sometimes
Groninger	Rare	Common	Common	Sometimes
Gypsy Cob/Tinker	Rare	Common	Present	Usually
Hanoverian	Common	Present	Common	Sometimes
Hucul	Rare	Common	Present	Sometimes
Irish Draft	Present	Present	Present	Usually
Jutland	Common	Rare	Rare	Sometimes
Kathiawari/Marwari	Present	Present	Present	Sometimes
Kladruber	Not Present	Uniform	Historical	Sometimes
Knabstrup	Common	Common	Common	Definitive
Lewitzer	Present	Common	Common	Usually
Malopolski/Wielkopolski	Common	Present	Common	Sometimes
Nordlands	Common	Present	Present	Sometimes
North Swedish	Present	Common	Common	Sometimes
Orlov	Present	Common	Common	Usually
Poitevin Mulassier	Present	Common	Present	Sometimes
Polish Draft	Common	Present	Common	Sometimes
Pottock	Common	Common	Common	Sometimes
Selle Francais	Present	Rare	Common	Sometimes
Silesian	Rare	Present	Common	Sometimes
Trakehner	Common	Common	Common	Sometimes

Chart 1 - Base colors found in popular breeds.

base will be absent. If, for example, there are no chestnuts, there will also be no palominos even if the cream gene is present. (For simplicity bay and brown are grouped together in the charts for this article.)

Likewise, in breeds where all individuals have a specific modifier base color will influence what is possible. All modern Fjords are dun, for example. But because Fjords are also genetically chestnut, black, brown and bay, we see the full range of red duns, grullas and yellow duns. If one or more of the base colors was missing in the breed, then only the modified form of the available colors would be present. Tarpan, for example, are also uniformly dun. They are also uniformly grulla, because the base colors of chestnut, brown and bay are not available. A red dun Tarpan would therefore be an unrealistic model.

For this reason, it is important to know which base colors are present (and common or uncommon) in each breed. Chart 1 gives information on the possible base colors for some of the less common breeds in the model show ring. When the base colors are found only in conjunction with a specific modifier, they are noted as "always" modified. For those breeds that are only bay, brown, black or chestnut, they are noted as "never" modified.

Modifiers

The remaining horse colors are the result of genes that modify the four base colors. The following charts indicate which modifiers are found in each breed. The modifiers are broken down into:

1) White hairs, 2) Dilutions, 3) Pinto patterns and 4) Appaloosa patterns.

Modifiers That Add White Hairs

The first group of modifiers are those that distribute white hairs through the coat. The most common of these is grey. Many horsemen mistakenly think of grey as a separate color, but in fact it is a modifying gene that progressively lightens the horse's original color. All greys, therefore, are also either chestnut, black, brown or bay. True roans have white hairs intermixed with their base color, but unlike greys the do not get lighter with age. They also have dark points, including the head, which has lead many to refer to them as "dark-headed roans". Finally

Breed	Grey	True Roan	Ticked
Abaco Barb	Not Present	Not Present	Present
Australian Pony	Common	Present	Not Determined
Australian Stock Horse	Present	Rare	Rare
Boulonnais	Common	Not Present	Not Determined
Breton	Historical	Present	Not Determined
Camargue	Uniform	Not Present	Not Determined
Campolina	Rare	Not Present	Not Present
Cold-blooded Trotter	Not Present	Not Present	Not Determined
Comtois	Not Present	Not Present	Not Present
Dole	Rare	Not Present	Not Present
Dutch Harness Horse	Rare	Rare	Present
Dutch Warmblood	Present	Rare	Not Determined
Estonian Native	Present	Rare	Rare
Felin Pony	Present	Rare	Not Determined
Finnish Horse	Rare	Rare	Not Determined
Frederiksborg	Historical	Not Present	Not Determined
Freiberger	Not Present	Not Present	Rare
Gelderlander	Rare	Historical	Not Determined
Gotland (Russ)	Not Present	Not Present	Not Present
Groninger	Rare	Historical	Not Determined
Gypsy Cob/Tinker	Rare	Rare	Not Determined
Hanoverian	Present	Not Present	Not Determined
Hucul	Historical	Not Present	Not Determined
Irish Draft	Common	Not Present	Not Determined

Chart 2 - Modifiers that add white hairs

Chart 2 - Modifiers That Add White Hairs (continued)

Breed	Grey	True Roan	Ticked
Jutland	Historical	Not Determined	Not Determined
Kathiawari/Marwari	Present	Not Present	Not Determined
Kladruher	Common	Not Present	Not Determined
Knabstrup	Present/Restricted	Not Present	Not Determined
Lewitzer	Rare (Prohibited)	Not Present	Rare
Malopolski/Wielkopolski	Present	Rare	Not Determined
Nordlands	Present	Not Present	Not Determined
North Swedish	Rare/Restricted	Not Present	Not Present
Orlov	Common	Not Present	Not Determined
Poitevin Mulassier	Present	Rare	Not Determined
Polish Draft	Rare	Rare	Not Determined
Pottock	Rare	Not Present	Not Determined
Selle Francais	Present	Not Present	Rare
Silesian	Present	Not Present	Not Determined
Trakehner	Present	Rare	Not Determined

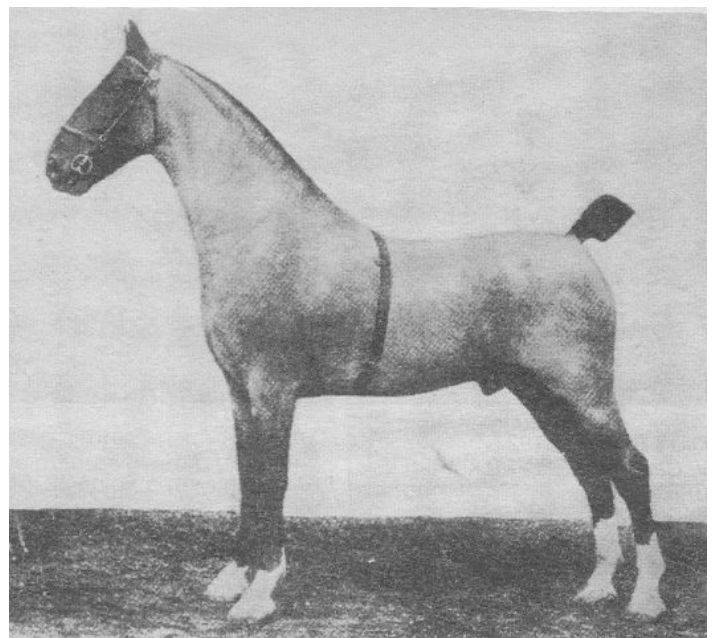
there is ticking, which most often results in roaning on the flank and a skunk tail (often called rabicano), but also includes any sprinkling of white hairs in the coat not related to grey or roan. Because ticking is often quite subtle and can be hard to see in photographs, many breeds will have this column noted simply as "Not Determined". (Chart 2)

Genes That Dilute Color

There are five known dilution genes found in horses: cream, dun, silver, champagne and pearl. Cremellos and perlinos are the result of two cream genes, and are therefore possible whenever a breed has the cream gene. When they are restricted, this is noted. (Chart 3) There are two other less understood dilutions - mushroom and globrunn - that have separate charts in the original article "What is Possible?".

Pinto Patterns

These are the genes that create the pinto patterns - tobiano, sabino, splash overo, frame overo and dominant white. Note that horses with patterns designated as Prohibited are usually only denied registration (or penalized in the show ring) when more obviously marked; in many breeds minimally marked individuals will not be identified as having the "prohibited" pattern. It is also possible for an undesirable pattern to be



Hockwold Cadet - blue roan Hackney used in the early 20th century in the development of the Gelderlander.

masked by an accepted color or pattern. A good example of this is grey, which can obscure minimally marked horses enough that they go unnoticed until a horse inherits the pattern without the grey. (Chart 4)

Appaloosa Patterns

Appaloosa patterns all depend on a “master switch” gene that activates the possibility of appaloosa patterning. That gene by itself gives the pattern known to most American horsemen as varnish roan. When paired with modifying pattern genes, the result is a pattern like leopard or blanket, which have more contrast. Varnish roan (called “leopard complex”) has been identified and will soon be testable, but the situation with the patterning genes is not yet clear. For simplicity, the basic patterns of leopard and blanket are included here, but it is likely that more will be identified in the future. (Some forms of sabino are thought to operate as patterning genes for leopard complex, for example.) Currently it is believed that the leopard and blanket patterning genes do not have an effect unless leopard complex is present to activate them, so breeds without the master switch are largely marked as “Not Determined”. It seems highly unlikely that the patterns are present in many of these breeds, but until a test is developed it is impossible to know for sure. (Chart 5)

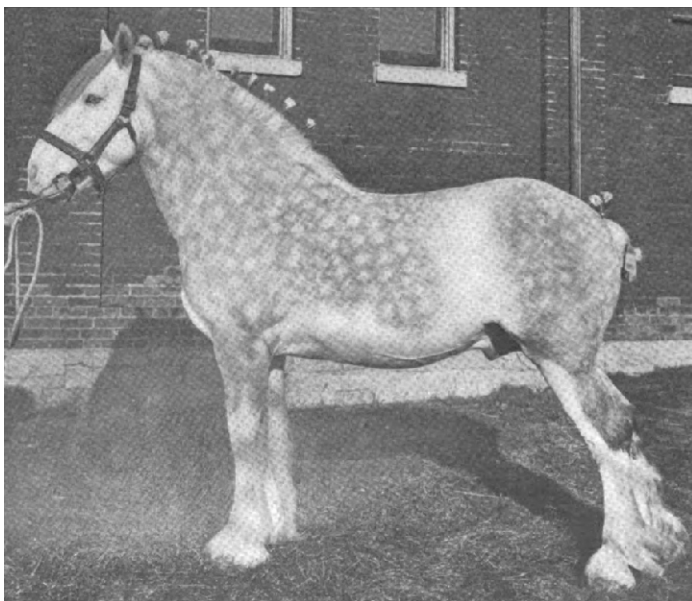
Finally, it must be stated that the information contained in these charts comes from a variety of sources, including breed registries and stud



Old Thor - born in 1847, Thor was an influential sire during the golden years of the Knabstrup Stud, before most of the original breeding program was lost to a fire in 1891. His blanket pattern is less common than leopard among modern Knabstruppers.

Breed	Cream	Dun	Silver	Champagne	Pearl
Abaco Barb	Not Present	Not Present	Not Present	Not Present	Not Present
Australian Pony	Present	Not Present	Rare	Not Present	Not Present
Australian Stock Horse	Rare	Not Present	Rare	Not Present	Not Present
Boulonnais	Not Present	Not Present	Not Present	Not Present	Not Present
Breton	Not Present	Not Present	Present	Not Present	Not Present
Camargue	Not Present	Not Present	Not Present	Not Present	Not Present
Campolina	Rare	Common	Not Present	Not Present	Not Present
Cold-blooded Trotter	Present	Rare	Not Present	Not Present	Not Present
Comtois	Not Present	Not Present	Common	Not Present	Not Present
Dole	Present	Rare	Not Present	Not Present	Not Present
Dutch Harness Horse	Rare	Not Present	Rare	Not Present	Not Present
Dutch Warmblood	Rare	Not Present	Rare	Not Present	Not Present
Estonian Native	Common	Rare	Rare	Not Present	Not Present
Felin Pony	Present	Common	Not Present	Not Present	Not Present
Finnish Horse	Rare	Rare	Rare	Not Present	Not Present
Frederiksborg	Present	Not Present	Not Present	Not Present	Not Present
Freiberger	Not Present	Not Present	Not Present	Not Present	Not Present
Gelderlander	Rare	Not Present	Rare	Not Present	Not Present
Gotland (Russ)	Present	Not Present	Not Present	Not Present	Not Present
Groninger	Historical	Not Present	Historical	Not Present	Not Present
Gypsy Cob/Tinker	Present	Test Confirmed (Rare)	Test Confirmed (Rare)	Not Present	Test Confirmed (Rare)
Hanoverian	Prohibited	Not Present	Not Present	Not Present	Suspected (pre-studbook)
Hucul	Not Present	Common	Not Present	Not Present	Not Present
Irish Draft	Not Present	Rare	Not Present	Not Present	Not Present
Jutland	Historical	Historical	Not Present	Not Present	Not Present
Kathiawari/Marwari	Not Present	Rare	Not Present	Not Present	Not Present
Kladruber	Historical	Not Present	Not Present	Not Present	Not Present
Knabstrup	Rare	Not Present	Not Present	Not Present	Not Present
Lewitzer	Not Present	Rare	Not Present	Not Present	Not Present
Malopolski/Wielkopolski	Rare	Suspected	Not Present	Not Present	Not Present
Nordlands	Rare	Not Present	Rare	Not Present	Not Present
North Swedish	Present	Rare	Not Present	Not Present	Not Present
Orlov	Not Present	Not Present	Not Present	Not Present	Not Present
Poitevin Mulassier	Not Present	Common	Not Present	Not Present	Not Present
Polish Draft	Not Present	Rare	Suspected	Not Present	Not Present
Pottock	Not Present	Not Present	Not Present	Not Present	Not Present
Selle Francais	Not Present	Not Present	Not Present	Not Present	Not Present
Silesian	Not Present	Not Present	Not Present	Not Present	Not Present
Trakehner	Not Present	Not Present	Not Present	Not Present	Not Present

Chart 3 - Modifiers that dilute the base color



Scots Grey - grey Clydesdale used in an early twentieth century experiment funded by the American Department of Agriculture to create an American breed of draft horse. He was one of the last known grey Clydesdales.

books. Every effort has been made to insure that they are accurate, but until there are comprehensive genetic tests for all the known colors, misidentification of individuals is always possible. There is also always the possibility that new information can come to light. In cases like this proper documentation included with an entry can often mean the difference in placing or not! For that matter, it is never a bad idea to include reference material when showing a color not typical for the breed.

I would also caution readers that registry color rules can and do change. The recent repeal of the American Quarter Horse Association's "white rule" is a good example. It is always a good idea to do a little research to see if rules have changed. And in that spirit, these charts are regularly updated to reflect new information. I am

Breed	Tobiano	Sabino 1	Other Sabino	Frame Overo	Classic Splash*	Dominant White
Abaco Barb	Not Present	Not Present	Not Present	Not Present	Common	Not Present
Australian Pony	Rare	Not Determined	Present	Not Present	Not Determined	Not Present
Australian Stock Horse	Rare	Not Determined	Present	Rare	Not Present	Not Present
Boulonnais	Not Present	Not Determined	Common	Not Present	Not Present	Not Present
Breton	Not Present	Not Present	Common	Not Present	Not Present	Not Present
Camargue	Not Present	Not Present	Rare	Not Present	Not Present	Not Present
Campolina	Common	Not Present	Rare	Not Present	Not Present	Not Present
Cold-blooded Trotter	Not Present	Not Present	Not Determined	Not Present	Present	Not Present
Comtois	Not Present	Not Present	Not Present	Not Present	Not Present	Not Present
Dole	Not Present	Not Present	Suspected	Not Present	Rare	Not Present
Dutch Harness Horse	Not Present	Suspected	Common	Not Present	Not Present	Not Present
Dutch Warmblood	Present	Not Determined	Present	Not Present	Not Present	Not Present
Estonian Native	Not Present	Not Present	Present	Not Present	Not Present	Not Present
Felin Pony	Present	Not Determined	Present	Not Present	Not Present	Not Present
Finnish Horse	Not Present	Not Present	Present	Not Present	Historical	Suspected
Frederiksborg	Not Present	Not Present	Present	Not Present	Not Present	Historical
Freiberger	Not Present	Not Present	Present	Not Present	Not Present	Test Confirmed (Rare)
Gelderlander	Rare	Historical	Common	Not Present	Not Present	Not Present
Gotland (Russ)	Not Present	Not Present	Not Present	Not Present	Present	Not Present
Groninger	Rare	Rare	Rare	Not Present	Not Present	Historical
Gypsy Cob/Tinker	Common	Not Determined	Common	Not Present	Suspected	Not Present
Hanoverian	Not Present/Restricted	Not Present/Restricted	Present/Restricted	Not Present/Restricted	Not Present/Restricted	Not Present
Hucul	Common	Not Present	Historical	Not Present	Suspected Historical	Not Present
Irish Draft	Not Present	Not Present	Present	Not Present	Not Present	Not Present
Jutland	Historical	Not Present	Suspected	Not Present	Not Present	Not Present
Kathiawari/Marwari	Present	Suspected**	Present	Not Present	Rare	Suspected**
Kladruber	Not Present	Not Present	Present	Not Present	Not Present	Not Present
Knabstrup	Not Present	Not Present	Present	Not Present	Not Present	Not Present
Lewitzer	Definitive	Not Present	Present/Restricted	Not Present/Restricted	Suspected/Restricted	Not Present
Malopolski/Wielkopolski	Present	Not Present	Present	Not Present	Not Present	Not Present
Nordlands	Not Present	Not Present	Not Present	Not Present	Suspected Historical	Not Present
North Swedish	Not Present	Not Present	Not Present	Not Present	Rare	Not Present
Orlov	Not Present	Not Present	Present	Not Present	Not Present	Not Present
Poitevin Mullasser	Not Present	Not Present	Rare	Not Present	Not Present	Not Present
Polish Draft	Not Present	Not Present	Rare	Not Present	Not Present	Not Present
Pottock	Common	Not Present	Suspected	Not Present	Not Present	Not Present
Selle Francais	Rare	Not Present	Present	Not Present	Not Present	Not Present
Silesian	Rare	Not Present	Rare	Not Present	Not Present	Not Present
Trakehner	Rare	Not Present	Present	Not Present	Not Present	Not Present

* Classic Splash is defined as the version of the pattern that many believe to be homozygous; that is, the unmistakable dipped-in-white expression where the face is white and the eyes are both blue. Because the line is not clear between splash and sabino, which while rare, does appear to produce occasional blue eyes, only those breeds where the classic form of the pattern has occurred are listed as having the gene. Some breeds with bald faces and blue eyes are not included because they have not (yet at least) produced a classic pattern.

** Dark-eyed white horses, called Nukra, are born in India. It is not clear whether or not they are homozygous Sabino1 horses or Dominant White. Most sabinos in these breeds do resemble Sabino1, but without testing it is not known which is involved, or if both are.

Chart 4 - Modifiers that create pinto patterns

always interested in unusual “finds” in these breeds or in others not listed. If you have information to share, please send it to Lesli Kathman, 4700 Lone Tree Ct., Charlotte, NC 28269 or via email <leslikathman@earthlink.net>.

For those interested in the stories behind the designations on these charts, and those of the previous article “What Is Possible?”, a series of books is planned to tell the stories of these and other breeds. The first volume of The Equine Tapestry is due to be published in the summer of 2011, and will have an overview of the currently known colors and patterns, and will cover the carriage and draft breeds. That will be followed with a volume on ponies and small horses, and then with one for the light riding breeds. (This third book may be split into two different volumes, as the number of breeds included in the category is pretty large.) News about the upcoming book can be found at the website www.horsecolor.info. Discussion of the topics covered by this article on the upcoming book can be found on the Equine Tapestry blog (equinetapestry.blogspot.com), due to go live in late May of 2011.

Previous posts on horse color made on the Blackberry Lane Pottery blog will be archived at the Equine Tapestry blog. A selection of past articles on horse color are archived on the pottery website (horsecolor.info) in PDF form. These include the most recent series on pattern interactions previously published in The Boat, the newsletter for the Realistic Equine Sculpture Society.

© 2011 by Lesli Kathman. These charts may be reproduced for personal use. Any other use (including inclusion in newsletters or show packets) requires written permission from the author.

Breed	Varnish	Leopard	Blanket
Abaco Barb	Not Present	Not Determined	Not Determined
Australian Pony	Not Present	Not Determined	Not Determined
Australian Stock Horse	Not Present	Not Determined	Not Determined
Boulonnais	Not Present	Not Determined	Not Determined
Breton	Not Present	Not Determined	Not Determined
Camargue	Not Present	Not Determined	Not Determined
Campolina	Not Present	Not Determined	Not Determined
Cold-blooded Trotter	Not Present	Not Determined	Not Determined
Comtois	Not Present	Not Determined	Not Determined
Dole	Not Present	Not Determined	Not Determined
Dutch Harness Horse	Not Present	Not Determined	Not Determined
Dutch Warmblood	Not Present	Not Determined	Not Determined
Estonian Native	Not Present	Not Determined	Not Determined
Felin Pony	Present	Present	Present
Finnish Horse	Not Present	Not Determined	Not Determined
Frederiksborg	Historical	Historical	Historical
Freiberger	Not Present	Not Determined	Not Determined
Gelderlander	Not Present	Not Determined	Not Determined
Gotland (Russ)	Rare	Historical	Not Determined
Groninger	Not Present	Not Determined	Not Determined
Gypsy Cob/Tinker	Rare	Rare	Rare
Hanoverian	Not Present	Not Determined	Not Determined
Hucul	Not Present	Not Determined	Not Determined
Irish Draft	Not Present	Not Determined	Not Determined
Jutland	Not Present	Not Determined	Not Determined
Kathiawari/Marwari	Not Present	Not Determined	Not Determined
Kladruber	Not Present	Not Determined	Not Determined
Knabstrup	Definitive	Common	Present
Lewitzer	Prohibited	Prohibited	Prohibited
Malopolski/Wielkopolski	Present	Present	Present
Nordlands	Not Present	Not Determined	Not Determined
North Swedish	Not Present	Not Determined	Not Determined
Orlov	Not Present	Not Determined	Not Determined
Poitevin Mulassier	Not Present	Not Determined	Not Determined
Polish Draft	Not Present	Not Determined	Not Determined
Pottock	Not Present	Not Determined	Not Determined
Selle Francais	Not Present	Not Determined	Not Determined
Silesian	Not Present	Not Determined	Not Determined
Trakehner	Historical	Not Determined	Not Determined

Chart 5 - Modifiers that create appaloosa patterns