



Equine Color 101

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Every spring the pastures are full of new Tennessee Walking Horse foals. And, around this time every year, the registration department begins receiving the applications for registering those foals before they reach seven months old. In order to ensure that your foal has been identified accurately on its registration papers it is important for you to have a thorough understanding of horse colors. Years ago, before we truly understood the genetics of horse color, people simply described what they saw. Today, with our enhanced understanding of horse color we are able to identify our horses more accurately and ensure the credibility of their registration.

We all recognize that there is a wide variety of colors in the Tennessee Walking Horse breed. The two main groups of horse colors are those with black points (mane, tail, lower legs and ear rims) and those with non-black points. The specific combination of point color and body color are what determines most horse colors. Another thing to consider is the horse's white markings. Those white markings and patterns are not the absence of color but rather white superimposed on what would have been the specific body or point color. A horse's final color results from the interaction of several independent genetic processes which can dilute, modify, restrict color or add a white color pattern.

The *Colors and Markings Guide*, available from the TWHBEA web site or by contacting the office, was designed to help you to accurately describe your foal at registration, to assist you in correcting a wrong color choice made on a registration, or to add a modifier or dilution that affected the foal coat color after the foal was registered. It is the responsibility of each and every breeder and owner to accurately identify their horses on their registration papers by selecting the correct color and accurately describ-

ing all markings and points (legs, mane, tail, and head).

In the *Color and Markings Guide* we included all of the colors that have been documented to date in the Tennessee Walking Horse breed. Genetically there are only two color genes, red and black, and every horse's color uses one or both of these two genes as the color foundation. However, we designed the chart using three colors, black, bay, and chestnut (sometimes called sorrel). We have chosen to include bay in the lineup because it simplifies the explanation of how each of the colors are derived. The wide variety of colors that we have in the horse world is created when those three foundation colors are diluted, modified, or have a color pattern added.

When registering your horse, make sure you are using the most current Application for Registration and color brochure. You can either obtain them from the TWHBEA Website at www.twhbea.com or by calling TWHBEA at 931-359-1574.

ACCURATELY IDENTIFYING YOUR HORSE

Selection of the correct color for registering your foal can be done in a four step process. On the color chart in the *Color and Markings Guide* you will see four columns with a picture of a horse at the top. The pictures of the first three horses across the top represent the base color for each of the colors described in the column below each horse. The fourth column describes the four white patterns found in TWHs. We have provided a simple description for each color and included the criteria for each possible choice. An important thing to remember is that, **in most cases, for a choice to be accurate for your foal one or both parents must display that color, dilution, pattern or modifying gene.**

Using the guide as a reference, the

following step by step process will help you as you are filling out the application for your foal. Note that step one will apply to all foals but steps two through four only apply to horses that meet the criteria described in that step.

Step one: From the 16 color choices available choose the color that most accurately identifies your foal. Please read the descriptions carefully to ensure your foal meets the criteria for that selection. Coat color testing for most of the color selections is available and will help to ensure the correct choice is made if there is any question.

Step two: If applicable, select a color dilution for dun **OR** silver. These are rarely found in TWHs and the choice must be validated. In order to select from this dilution category, the foal and at least **one of the parents must meet the criteria by expressing the selected gene.** It is possible that a parent carrying the selected gene was incorrectly identified if registered before these dilutions were recognized by TWHBEA. In that case, genetic testing may be required as proof. When registering your foal as a dun or silver **pictures are required.** A complete description of the unique dilution characteristics as described below along with any white markings is mandatory. Don't forget to put mane/tail color in Box 5 and if possible use Box 8 to describe Dun and Silver characteristics or attach a sheet of paper with descriptions.

A dun foal must have a prominent dorsal stripe, zebra stripes around legs, shoulder barring and cob-webbing on face. The body coat color will be several shades lighter than the normal coat color or would have been without the dun dilution. Color testing is now available.

The silver gene is dominant but only expresses itself when black is present. Variations include a silver black, silver bay, and silver buckskin, which is often

5 COLOR: *Indicates basic body color of a mare, overo, sabino, and tobiano. Photos showing both sides, front and back are required for an overo, sabino, or tobiano.

Step 1
Select your horse's color

<input type="checkbox"/> Black	<input type="checkbox"/> Bay	<input type="checkbox"/> Chestnut
<input type="checkbox"/> Smoky Black	<input type="checkbox"/> Brown	<input type="checkbox"/> Sorrel
<input type="checkbox"/> Smoky Cream	<input type="checkbox"/> Buckskin	<input type="checkbox"/> Palomino
<input type="checkbox"/> Classic	<input type="checkbox"/> Perlino	<input type="checkbox"/> Cremello
<input type="checkbox"/> Champagne	<input type="checkbox"/> Amber Champagne	<input type="checkbox"/> Gold Champagne
<input type="checkbox"/> Classic Cream	<input type="checkbox"/> Amber Cream	<input type="checkbox"/> Gold Cream
<input type="checkbox"/> Champagne	<input type="checkbox"/> Champagne	<input type="checkbox"/> White

Mane/Tail Color

DILUTIONS

<input type="checkbox"/> Dun	<input type="checkbox"/> Silver
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MODIFIERS

<input type="checkbox"/> Grey	<input type="checkbox"/> Roan
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PATTERN*

<input type="checkbox"/> Overo	<input type="checkbox"/> Sabino	<input type="checkbox"/> Tobiano	<input type="checkbox"/> Tobiano/Sabino
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Step 2
Select the dilution

Step 3
Select the modifier

Step 4
Select the pattern

Select only what applies to your horse.
If you have questions contact TWHBEA's Color Consultant for assistance.

mistaken for a palomino. It lightens the black coat to chocolate and the mane and tail to a silver, off-white or flax color. Red based horses may carry the gene but must be tested to be sure. Silver gene testing is available and may be requested to confirm the color choice if suspected either because it had a registered silver parent or if neither parent displays the gene. Remember; if this step doesn't apply to your horse then do not check dun or silver.

Step three: If applicable, select a color modifier for roan **OR** grey. Selection of both modifiers will not be accepted unless proof is provided that both are present. If this doesn't apply then do not check either box. Again it is important to understand that color modifiers are not a color and that they can be applied to any of the colors in step one.

A foal born with the roan modifier has a coat that will remain constant throughout its entire life except it darkens each winter and sheds back to roan each spring. **At least one parent must be roan** in order to make this selection. The classic roan characteristics leaves the head, legs, mane and tail the base color and only the body color is modified by white hairs evenly mixed with the dark hairs giving the horse a silvery effect.

Grey foals can be harder to identify. A foal is never totally grey at birth but usually has some indicators like grey eyelashes or begins to turn grey when they shed their foal coat or sometimes several years later. When they do begin to turn grey it usually shows on head first and is progressive throughout their life continuing to lighten until the horse is almost white or white with specs of color commonly referred to as a "flea bitten"

grey. The only exception is double dilute cream horses that have no color for grey to modify so the grey is hidden. The horses color at birth will remain on the registration certificate and if the foal begins to turn grey it will be added to the base color, i.e., black/grey, palomino/grey, etc. In order for a foal to be registered grey, at least **one of the parents must be also have turned grey**. If this step doesn't apply then skip this step. Color testing for grey is now available.

Step four: If applicable, choose a white pattern; tobiano, overo, sabino or tobiano/sabino. For this to be a valid choice, **one of the parents must be also display the pattern**. Again, it is important to familiarize yourself with the different patterns and their combinations to make sure you are making the right selection. Correctly identifying your horses color and faithfully reproducing his facial, leg, and body markings helps you, the owner, to identify this animal if he or she is stolen or lost. If this step doesn't apply then do not check any of the pattern boxes.

Many TWH horses possess several spotting genes all working together. These horses are in fact the most successful producers of color. They can produce a high percentage of spotted foals on both spotted and solid-colored mares with some being just tobiano or sabino and some expressing the tobiano/sabino combination so care must be taken to ensure that you make the right selection on the registration application.

For a foal to be a tobiano/sabino one of the parents must be also be registered as a tobiano/sabino or one a tobiano and one a sabino.

A maximum white sabino, something we are seeing more often, is a horse

that appears to be all white. They are the offspring of sabino parents. Genetically this is a horse with white superimposed over one of the foundation colors described earlier in this article. The horse will usually have some spotting on the skin under the white hair. To accurately register this horse you must select a color in step one which may require color testing. TWHBEA now accepts the Maximum White Sabino as a Pattern choice. In Box 5 under Tobiano/Sabino, write in Maximum White Sabino and in Box 6 put a line through NONE and write in Maximum White Sabino. Until iPeds is updated it will appear in the markings box.

Don't forget that if you choose a white pattern, we will need a photograph of the front, back and both sides sent in with the registration application.

EQUINE COLOR GENETICS

It is important to note that any color gene that is a dominant whether it dilutes, modifies or adds a white pattern requires a parent to have that gene in order to pass it to their offspring.

If you have any question about your foal's color or would like to be sure what genetic traits your foal carries color testing can be done by the University of Kentucky at a special TWHBEA rate using hair samples pulled at the same time as for parentage verification.

The section of the Colors and Markings Guide entitled "COAT COLORS OF TWHs" provides an explanation of equine color genetics terms used and will help you understand the results of any color testing you have done. 🐾

Helpful Hints

- Colors, dilutions, modifiers and patterns do not skip generations
 - Black x chestnut can produce black, bay or chestnut.
 - Chestnut x chestnut can only produce chestnut.
 - Black x black can produce both black and chestnut but can never produce a bay.
- Palominos, Buckskins and Smoky Blacks are never homozygous and will produce color only 50% of the time.
- Dun and Silver dilutions and Roan and Grey modifiers require that at least one parent must display the gene.
- Grey is masked on Cremello, Perlino and Smoky Cream horses because there is no contrasting color for the grey gene to visibly modify.
 - Tobiano, Overo, and Sabino patterns require that at least one parent display the gene.