

# The Basics of Color Genetics in Rabbits

By **Glenna M. Huffman**

There are only four basic colors in rabbits – black, chocolate, blue and lilac. All of the other colors are simply a variation of these four basic colors. Black is the dominant color, with chocolate being the recessive of the black. Blue is the dilute of the black, and lilac is the dilute of the chocolate.

Example	<u>Black Colors</u>	<u>Chocolate</u>	<u>Blue (dilute)</u>	<u>Lilac(dilute)</u>
<b>Self-Agouti</b>	Black Chestnut/castor Chinchilla Sandy (FG only) Lt. Gray (FG only) Black Steel Sable Agouti	Chocolate Cinnamon Choc. Chinchilla  Chocolate Steel	Blue Opal Squirrel  Blue Steel Smk Prl Agouti	Lilac Lynx Lilac Chinchilla  Lilac Steel
<b>Shaded</b>	Siamese Sable		Smoke Pearl	
<b>Tan Pattern</b>	Black Tan Black Otter Black Silver Marten Sable Marten	Chocolate Tan Chocolate Otter Choc. Silver Marten	Blue Tan Blue Otter Blue Silver Marten Smoke Pearl Marten	Lilac Tan Lilac Otter Lilac Silver Marten
<b>AOV</b>	Black Himi	Chocolate Himi	Blue Himi	Lilac Himi

**Non-extension colors** - the black is removed, leaving only the yellow to show on the coat.

Agouti	Orange Red Gold	Orange Red Gold	Fawn	Fawn
Shaded	Sable Point Tortoise	Chocolate Point Chocolate Tort	Blue Point Blue Tort	Lilac Point Lilac Tort

The **Ruby-eyed White (albino)** is pure white with the ruby eye, but carries a full set of the color genes hidden. Breeding a Ruby-eyed White to another Ruby-eyed White will ALWAYS result in 100% Ruby-eyed White babies. Breeding a REW to a colored rabbit will let the breeder know what genes the REW carries hidden.

The **Blue-eyed White (Vienna White)** is also pure white, but with bright blue eyes. They also carry a full set of the color genes hidden. These two white colors are, however, genetically very different and can make some strangely mis-marked babies when bred together. The BEW can also make mis-marked babies when bred to a colored rabbit. Ideally, the BEW should only breed with BEW.

The other “white” rabbits are the **Dwarf Hotot** (white with color only around the eyes) and the **Ermine or Frosted Pearl** colors. The Dwarf Hotot’s color is from combining the broken genes and the Dutch genes. The frosted can come with either a tint of black, chocolate, blue or lilac to the coat. They are not actually white in color, but ideally should be almost white or off-white in basic color.

Rabbits have three coat patterns. First is the dominant pattern for the agouti colors. These will show the banded hair shaft, white belly, white on the underside of the tail and all of the normal agouti markings. The agouti colors include the chestnut/castor, opal, lynx, chinchilla, and squirrel.

The second coat pattern is called Tan pattern. It is recessive to the agouti but is dominant to the self. The Tan pattern group includes the tans, otters, silver martens, sable martens and the smoke pearl martens. Here the body is solid colors, but there are the agouti/tan pattern markings. The belly and underside of the tail is white (except in the tans), and the markings can be orange/gold, fawn or silver white.

The third coat pattern is self. These are one color over the entire body with no markings. These are the black, blue, chocolate, and lilacs.

There are also the colors where all or almost all of the black color has been removed from the coat. These colors are called non-extension (for non-extension of black) and include the torts, sable points, fawns, oranges, and reds. These colors are recessive to the colors that are normal extension of black. Breeding any of these colors together will always result in babies of these colors.

*Color questions, contact Glenna Huffman – [buncolor@ismi.met](mailto:buncolor@ismi.met)*

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