Color genetics is like a box of chocolates. You never know what you're going to get.

COLORFUL GOATS

Goats come in many different colors and patterns. The Nigerian Dwarf has the most color combinations. Coat color is determined by genetics and can vary by breed and individual. There are some similarities with sheep, but also, significant differences. Coat color is an economic trait, as it can be important for environmental adaptation, production, and breed identity. And sometimes it's just plain fun!

As with other mammals, two pigments control color in goats: eumelanin and pheomelanin. These pigments are present or absent in various combinations. Eumelanin is responsible for black, blue-gray, and chocolate-brown colors. Pheomelanin is responsible for tan, cream, and red colors. The final color of a goat is due to the interaction of eumelanin (black/brown) and pheomelanin (red brown/tan/cream), and white spotting (white).

Similar to sheep, color genetics is very complex in goats. Many genes are involved at multiple loci. Most of the variation in goat color comes from the Agouti (A) locus. It controls the distribution of eumelanin and pheomelanin areas. There are many agouti patterns. The most common are gold, buckskin, and Swiss. Another source of variation is the Brown locus. The brown locus acts to switch eumelanin from black to brown. The browns can vary from light to dark chocolate brown. The Extension gene can override A-gene patterns. White spotting is white areas that are the result of genes that prevent pigment from being deposited in those areas, e.g., roan, belted, spotted, flecks, and frosted. Many different genes are involved in white spotting.

The genetics of color in Angora goats is different from other goats. Most Angora goats are white for obvious reasons (commercial value of white fiber). The dominant white gene (another loci) is epistatic meaning it masks all other colors and produces a white coat unless the goat has a rare recessive gene for color. Without the dominant white gene, the Agouti and Extension locus (wild type) determine the specific color pattern of the Angora goat. A white or tan allele at the Agouti locus is also common in Angora goats. Nowadays there is interest in breeding color back into Angora goats.

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For more information, go to https://midwestbucksale.com/goat-color-explained/