

What Color Will My Indian Artbeat Foal Be?

Indian Artbeat is tested as a homozygous black horse.

This means his contribution to the foal will ONLY be black. The Mare contributes the other set of genes that determine if the foal will be black, bay or brown, or a dilution color such as buckskin or grulla or gray.

Note: The source for the following gene information is from the UC Davis site: <http://www.vgl.ucdavis.edu>

There are two sets of genes for his black color Indian Artbeat was tested for:

Indian Artbeat is tested Homozygous EE defined as follows:

- **E:** No red factor detected. The horse can be assumed to be homozygous for black pigment (EE). It cannot have red foals, regardless of the color of the mate. The basic color of the horse will be black, bay or brown, but depending on genes at other color loci, the horse may be buckskin, zebra dun, grullo, perlino, gray, white or any of these colors with the white hair patterns tobiano, overo, roan or appaloosa.¹

Indian Artbeat also tests as Homozygous aa defined as follows:

- The allele “a” does not restrict the distribution of black hair and thus in the presence of the allele *E* of the E gene a uniformly black horse is produced. In most breeds of horses, the a allele is rare, so black horses are infrequently seen. Many black horses will sun-fade, especially around the muzzle and flanks and such animals may be called brown. The term brown can be used for several genetic combinations (various reds, bays and dark bays, as well as some blacks).¹

Neither A nor a affects either the pigment or its distribution in red (ee) horses. Thus it is not possible to determine by examination of coat color which alleles of the A gene a red horse has.

Indian Artbeat is EEaa. Below is the definition of the genes your mare may contribute to make the foal have a bay or brown color.

Chestnut or Sorrel Mares

All chestnut/sorrel mares are genetically “ee”

The allele that determines if the foal is black is “a”. The allele that determines if the foal will be brown or bay is the allele “A”. (Remember there is NO way to tell which “a” allele your chestnut mare has without a genetic test.)

eeaa - the foals will be **100% black**

eeAa - the foals will be **50% bay or brown and 50% black**

¹The information about genetics came from the UC Davis site: <http://www.vgl.ucdavis.edu>.

eeAA - the foals will be **100% bay or brown**

Black Mares

IF your black mare is Homozygous EE

EEaa - the foals will be **100% black** and be homozygous to black carrying the EEaa genes as the E comes from both dam and sire.

IF your black mare is Heterozygous Ee.

(Bred to other stallions, this mare can throw a sorrel. But because Indian Artbeat is homozygous to the black gene, his genes will cover her sorrel gene and NO foals will be born red.)

Eeaa - the foals will be **75% black** and **25% bay or brown**

Brown or Bay Mares

IF your brown or bay mare is Homozygous EE

EEAe - the foals will be **50% black** and **50% bay or brown**

EEAA - the foals will be **100% brown or bay**

IF your brown or bay mare is Heterozygous Ee

(Bred to other stallions, this mare can throw a sorrel. But because Indian Artbeat is homozygous to the black gene, his genes will cover her sorrel gene and NO foals will be born red.)

EeAA - the foals will be **100% bay or brown**

EeAa - the foals will be born **50% black** and **50% bay or brown**

There are many other modifying genes that determine coat color such as buckskin, grulla and gray. Indian Artbeat can't sire a Palomino as the palomino is dilution of the sorrel gene. The foal resulting from a palomino mare would be black, smokey black, buckskin, bay or brown.

Go to <http://www.vgl.ucdavis.edu/services/coatcolortable.php> for a chart to see what percentages of color the resulting foal sired by Indian Artbeat and your mare would produce. To tell what your mare will contribute for sure, she will need to be genetically tested but you can get a general idea.

You can also go to <http://www.animalgenetics.us/C/Calculator1.asp>, insert your mares color and Indian Artbeat as Homozygous black, and they will calculate the color percentages for you.

You can have your mare tested to see what she will contribute to determine the color of the foal at UC Davis: <http://www.vgl.ucdavis.edu/services/coatcolorhorse.php>. The cost is \$40 and you can order a hair sample test.

¹The information about genetics came from the UC Davis site: <http://www.vgl.ucdavis.edu>.