

Coat colour: Chestnut ("*Extension*" or "*Red factor*")

Applicable breeds: Numerous breeds

The basic horse coat colours are controlled by the interaction of two genes: Extension and Agouti. The Extension gene, also known as the "Red Factor" controls the production of red and black coat colour pigment, while the Agouti gene controls the distribution of black pigment as either uniformly over the body, or restricted to the points of the horse (mane, tail, lower legs). In order to comprehensively assess the basic coat colour of the horse both this test and Bay/Black coat colour should be investigated.

The Extension gene has two variants referred to as E and e. Horses which are ee will have a chestnut basic coat colour, while those which are Ee or EE will have a black basic coat colour.

This test is particularly useful for breeders:

- To identify whether horses with a basic black coat colour carry a chestnut gene (Ee) or not (EE), and therefore whether they can potentially produce chestnut offspring. An EE horse will not produce chestnut offspring regardless of the colour of the other parent.

This test will be reported as:

EE : only the black factor detected. The basic coat colour for this horse is black and it will always pass a black gene to offspring.

Ee : both black and red factors detected. The basic coat colour for this horse is black, but will pass a black gene to offspring 50% of the time and a red gene 50% of the time.

ee : only the red factor detected. The basic coat colour for this horse is chestnut.

Typical breeding outcomes:

EE X EE = 100% EE

EE X Ee = 50% EE, 50% Ee

EE X ee = 100% Ee

Ee X Ee = 25% EE, 50% Ee, 25% ee

Ee X ee = 50% Ee, 50% ee

ee X ee = 100% ee