



HOW TO COLOUR GUESS

WHEN YOU DON'T HAVE X-RAY EYES

Dec 2022, text & photos: Sigrid van Dort

How can you guess a chicken colour? Guess, yes, that's all we can do, because, we don't have X-ray eyes and can't be sure what exactly is in them colourwise. How can we approach this? A possible way is presented here.

What breed?

Creative breeding is practiced by many breeders since knowledge and experiences are widely available, still a breed has traces from its history when new colours are based on the classic or standard colours.

Classic colours are true breeding colours (homozygous), which means that parents will give children that look like them, sex differences taken into account.

Each breed has its own classic

colours, you can find them in the Standards. Breeds that look quite similar in shape and extras can be used to create a new colour not based on the existing colours of a breed. If you want to know whether genes could be borrowed from a particular breed, check out which colours are accepted or existing. Not all breeds are accepted in the same colours, there is choice.

Take single laced from the Wyandotte put into a Brahma. The laced pattern is a simply put: ground colour and lacings in black or one of its variations like blue, dun, choc, lavender.

Not everything that looks the same is the same

You might immediately recognise that a laced Brahma is laced as in Wyandotte. The colour guess is straight forward. Now, what in the unlikely (size) case if a Sebright is

used to make Brahma single laced? Knowing that Sebright laced is genetically different compared to laced of the Wyandotte would help.

Since Sebright and Brahma don't look similar, you can use Occam's razor's way of thinking, and look at other more similar build candidates first: Wyandotte and Orpington (buff laced).

You look for the differences between Brahma and Wyandotte and will see: comb, skull shape, leg length and feathering, tail build, body shape, size.

Similar are the genetic bases, skin colour, feather quality is not that much different as to cause major problem. Brahma and Orpington have differences too, the bases of the birds could vary given the different lacing of buff Orpington, skin colour is different, skull shape, leg length and feathering, tail build

and body shape. This means, you try to identify the origin(s) of a bird. Indeed, in Orpington the Shanghae chickens are used, only... it is almost 1,5 century ago, not likely much is left of it.

Mixed breeds or projects

When you have mixed breeds and colours, you know more. You recognise the impure (heterozygous) looks of a gene or a combination of them, like black feather tips when there is a columbian action regardless how they show up, local, regional or on the whole body.

Split up in gene groups

You know the genes can be split up in four groups apart from gold and silver which I call the „ground colour“. First, the bases (e-alleles) which determine the amount of black and give a certain range of colours based on history.

The second group of genes are the ones that change the colour throughout the whole chicken uniformly like red diluters and enhancers, black changers like blue,

dun, choc, or the both red and black diluting lavender, the whites. The third group are the genes that change how black (and its varieties) is arranged on the bird and/or feather only, known as the columbian action genes.

The fourth group are the pattern genes, the one causing black pigment to stick together around the feather quill. Plus the ones interrupting pigment like cuckoo and mottled and these work on the whole bird too. All chicken colours are made of one or more of these genes, you can read this in my genetics of chicken colours book which is quite straight forward. Basic knowledge brings you very far in breeding.

Example of history and genes

Looking at a mixed coloured chicken, like a Serama, without a fixed standard colours anywhere in their history (till 2010), and armed with the knowledge that they are made of Chabo (Japanese bantam, or the smaller Thai bantam) it is still possible to guess the colour pretty accurate. Verify the gene actions of possible

candidate genes and you come close. The many wheaten looking Serama, the absense of shaft stripes in hackle and saddle of the cock, are a sign of wheaten as e-allele. Many colours point in the direction of black tailed varieties in Chabo. There are pretty much almost standard coloured “tailed” Serama. Black tailed has a simple recipe, only one extra gene involved next to wildtype wheaten, to create a black tail on both sexes (Db) on silver or gold wheaten. Tweak black expression a bit and there you are. You guessed pretty close.

The variables

... are mostly in the possible columbian actions and the amount of black present. The amount of black might indicate the base e-allele together with the leg colour. However it can be tricky. It depends how the chick looked. Whether the ground colour of a chicken is gold, silver or both (cocks), doesn't influence the four gene groups (unless in future is proven it does have influence on the distribution of black and pattern genes, till now it has not) apart from sex-differences.

Deduction of what is seen (phenotype) is a way to guess the genotype, based on the standard colours and the history of a breed or the combi of breeds that went into the mix.

Chick down clues

It is possible to start guessing at birth, the colours of chicks indicate a little what's in them and what will pop out later in adult feathers more recognisable. In mixes this is much harder to identify, unless you know exactly how the previous generations looked or know from what standard colours they are made. And there are so called ‘chick down colours’ which don't exist anymore when the youth and adult feathers come in. Think of the snow white chicks.

Our ancestors used chick colours to predict whether they were of the correct colour by the time the birds were mature. This was a necessity, feed was expensive and every cent put in a chicken that would not be correct, was a waste of money.

For projects, none of the known chick colours will work. As you make new colours, you can document the changes, from chick to adult. That way, over time, you can make some more accurate guesses.

Making photos of the development of a mixed colour gives you an indication of what is in them.



Source: Genetics of Chicken Colours