

(on the inhibitor of dermal melanine, barring and fibromelanosis)

BY
SIGRID VAN DORT



What happens if you have a buff Silkie based on eWh wheaten (not eb) and you add B cuckoo. Then you have two genes that counteract id+, while Fm is still there. Fm cannot express black skin without the help of id+.

But Fm isn't gone, you will see 'Fm freckles' on the skin of such a bird.

To be complete: B, eWh, dominant white and Di(lute) mess with the expression of id+.

B (barred or cuckoo) inhibits id+.

If id+ is written with a small letter and a + is added, it does not inhibit dermal melanin. Think of the slate-coloured legs of RJF as agreed as the standard in chicken colour talk. It does inhibit dermal melanin if Id. All genes have counterparts as in the absent trait or allele, for example b+ is no barred and B is barred. A chicken gets one copy of a gene from its father and one from its mother. Sometimes one of the parents doesn't have a copy of the gene, that's the counterpart. The result is that the chick is heterozygous for that gene. If the gene is dominant, you'll see the trait, if it's recessive, you won't. This is called 'split for [name-gene]'.

For black skin, Fm (fibromelanosis) needs functional id+

Silkie, for example, are also made in cuckoo/barred, therefore we know they do not have a black skin if they have B/- or B/B.

B is sex-linked dominant and id+ is sex-linked recessive. Fm is autosomal incomplete dominant.

Why is this important in this context?

It isn't, it just tells you that males can be B/B and id+/id+ Fm/Fm or B/b+ and Id/id+ and Fm/fm+ and females can be B/-, id+/- and Fm/Fm or Fm/fm+.

On only id+ and Fm

Males can be split for id+ and will not express black skin because id+ is recessive. Id/id+ is not functional. The result is no black skin (inhibited dermal melanine), even if Fm/Fm is present. If you are crossbreeding with Silkies to create your own 'breed', for example with Cochin Bantam or Serama, it is important to know that males can be split for id+ and homozygous for Fm, and therefore will not have a black skin.

Did you read that? Id/id+ is not functional, so Fm doesn't do anything > no black skin although it is present.

However, the split Id/id+ male can give his one id+ to his daughter and she will have black skin because... only one copy of id+/- is functional, it is sex-linked recessive. She is hemizygous for id+ (hemizygous = only one copy needed for function because it is on her sex chromosome).

With Fm/fm+ or Fm/Fm she will have black skin if she isn't based on eWh**. Fm is dominant, so even with one copy (Fm/fm+) the skin will be dark (maybe a little less than homozygous). Better of course is Fm/Fm, but you can't always have that.

Let's add B...

B blocks id+. So B/B and B/b+ block id+/id+ too. Both genes happen to be sex-linked, but one is recessive and the other dominant. Hold on...

And in females, B/- blocks the single dose of the hemizygous id+/-.

B always deletes dark skin, always

Forget about 'there is a special way to prevent cuckoo from deleting black skin in Silkies', there isn't. B always blocks id+, period.

If you are of a different opinion, so be it.

When sexually mature, the blueish skin of heterozygous cuckoo boys and hemizygous cuckoo girls is white. Only juvenile Silkies have skin darker than white for a short time. Cuckoo Silkies are adult for longer than chicks (hopefully for them at least) and the adult colour counts. There is no standard colour described based on the chick colour.

B blocks id+, one B/- blocks one id+/- in hens as well as two times B/B blocks two id+/id+ in cocks and even B/b+ id+/id+ cocks have white skin and a red face and comb as adults.

More misery for id+...

In addition to B, the e-allele eWh wheaten also inhibits the expression of id+. You can see this for example in breeds with slate-coloured legs, and when someone decides to make a buff on this frame. Those buffs with previously slate-coloured legs will get light blueish legs. Even a buff based on eb asiatic partridge can have lighter legs when Di is added, this also messes with id+.

