Check out the website (link below) for books on this stuff.

MAKING ISABEL FROM SCRATCH

Text & photos:
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Wheaten buff — as in Cochin bantams, black tailed yellow, light buff to cream under colour, light chicks:
eWh, s+, Db, (Co)

UK gold (buff) — as in UK & US silkies, grey under colour, chicks with head/ neck stripe:
eb, s+, Pg, Db, Co

Breeding plan in years

Autosomal inheritence Cock assumed gold based for shiny black (here lav)

Buff Silkies (eb, eWh, eWh/eb) — **Year** — **Lavender Silkie**

1

gold leaking black split lav — gold leaking black split lav

2

gold leaking lavender — **Buff Silkies (eb, eWh, eWh/eb)**

3

more gold leaking black split lav — more gold leaking black split lav

4

more gold leaking lavender — **Buff Silkies (eb, eWh, eWh/eb)**

5

much more gold leaking black split lav — much more gold leaking black split lav

6

isabel with lavender markings (too many) — **Buff Silkies (eb, eWh, eWh/eb)**

7

buff with black tail and wings — buff with black tail and wings

8

isabel with lavender markings, eb more than eWh — **Buff Silkies (eb, eWh, eWh/eb)**

9 + ...

Breeding plan in years and what to expect?

After the initial cross of buff x lavender (which is solid black) the first years especially, the wings and tail will continue to show lavender which has to do with the strength or expression of the columbian genes present. The base e-allele(s) can be detected from the undercolour. Pick both light and grey to keep both eWh and eb based buff going.

Skin melanisation issues in Silkies
eb will contribute to enough skin (eye) melanisation in Silkies, while **eWh** based buff blocks skin (eye) pigmentation because it obstructs id+ which is necessary for Fm to express.
A lack of id+ (inhibitor of dermal melanin) expression and therefore skin melanisation (Fm, fibromelanosis) is in particular visible in the cocks and two year old hens. They will get more red in their face, the comb and wattles.***)**

Because Silkies consist not only of feather colour, you could consider trying to keep all breed characteristics as much as possible, like black skin. For Pekins, Cochin bantams and other breeds, this is not important. Those can be bred using eWh only and selected for eWh/eWh after the initial cross to (black) lavender or even porcelain (lavender mille fleur) if it exists in the breed.
In Silkies, the eb/eb based ones will be more lavenderish (as in black lavender) compared to the eWh/eWh based. eWh discriminates black pigment in favour of red pigment, which is exactly what you need, albeit with consequences for skin colour. Those will be more isabelish (as in lavender gold), especially the undercolour, wings, tail. At hatch you can guess which ones are eb and which ones are eWh and the splits have vague markings on the head and neck in the first years when eb gold buffs are used..

Chicks
It depends on their ancestry - (Co) columbian and (Db) darkbrown might be visible the first years, the wheaten based buffs don't show this because they are basically black tailed buffs with a strong Db/Db expression and therefore the chicks can look only yellow without markings. Co, you recognise from a dot-stripe on the head, Db from a stripe in the neck on eb or eb/eWh although chick down colours vary a lot. You might find clues when you breed from your own line.

Skin melanisation of the chick's toes might be an indication too, the later they become melanised (more than 6 weeks), the more chance there is eWh present. Typically Silkie chicks vary in toe melanisation depending on e-alelle (eb or eWh).

Youngsters
Young hens based on eb might show blue skin at first, also the eWh wheaten based ones, this becomes lighter (more red allowed) when they mature. The same for the faces of eWh based isabels, the faces of young hens are still blue skinned. Mature eWh based isabels can have a red comb and wattles.
The eb based young hens have darker blue legs and this stays that way into sexual maturity. As mentioned before, the visual overall isabel colour of eWh, eWh/eb and eb isabels is different, where the ones with eb or who are eb/eb look more dull because their grey under colour is visible due to the open silkied feather structure. You cannot change this in eb/eb. You can only change the expression of the present columbian genes to manage the pure lavender in wings and main tail feathers. The stronger the columbian expression, the less lavender is visible.

Now shut up and show how it looks like >> see next pages.

*) Black skin needs...

Black skin needs two ingredients next to a 'dark' base e-allele (E, ER, eb) which provides enough black pigment from the chicken colour factory: id+ and Fm.

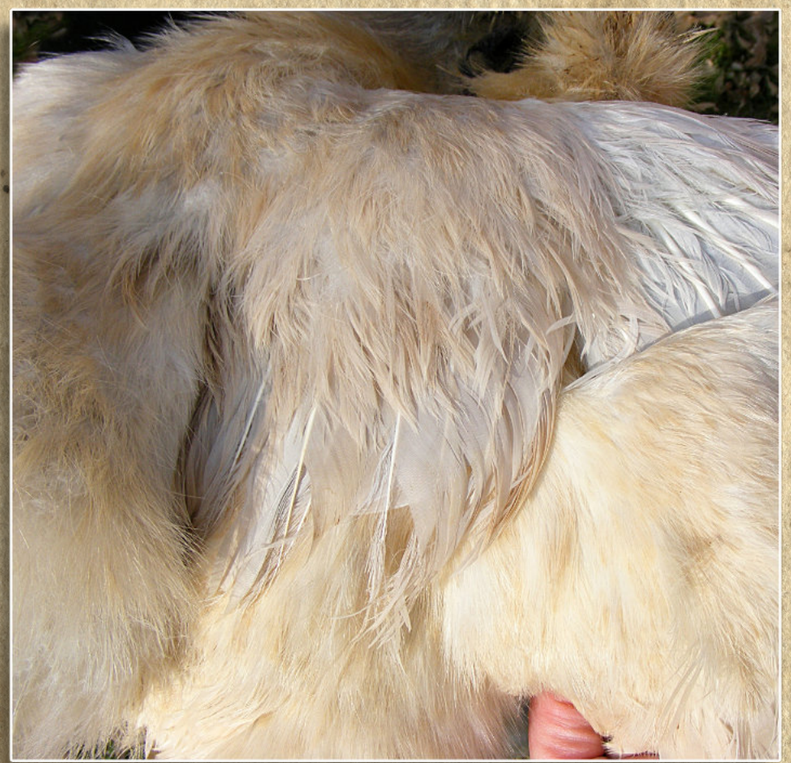
Inhibitor of dermal melanine
You know **id+** probably from 'slate' or lead colour dark legs of older breeds like the Polish and... of the default chicken: Red Jungle Fowl. The confusing part is the name of this gene 'inhibitor of dermal melanine' since the default does not inhibit dermal melanine (dark inside the leg). However, it is recessive although wild type. Id is inhibiting dermal melanine, such chickens have white or yellow legs (inside the leg, outside can be darker due to feather pigment).

Fibromelanosis
The other gene necessary is **Fm**, which adds dark pigment to the skin, only... it needs id+ otherwise it won't work. When there is Fm without id+ the chicken gets only dark freckles and not an even dark skin. Keep this in mind for when you plan a 'fibro' project and use a non-fibro chicken for a certain trait.

Autosomal & sex linked
To complicate matters, Fm is autosomal incomplete dominant, it works on both sexes and gives a bit darker skin colour when heterozygous (Fm/fm+) but it really needs id+.
Now id+ is sex linked recessive. This means a cock needs two copies id+/id+ to express dark skin (or legs if no Fm is used).
The hen only needs one copy (id+/-) and has immediately dark legs (or dark skin if Fm/Fm is present). T his means: when you use a 'fibro' skinned hen x non-fibro skinned cock, that none of the offspring will show dark legs but the sons will carry one copy. They are 'split for id+' in that case.
Compare it to recessive sex linked choc, it is the same way of inheritance.

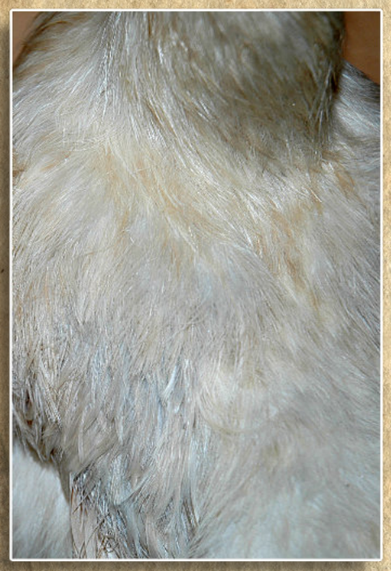
Choice: eWh/eb or eWh/eWh based lavender buff (isabel)?
To prevent red combs in cocks, eb/eb might give too much lavender under colour

The explanation in photos...



Above: eb-isabel and an eWh-isabel (below). The hen above shows a bit grey under fluff in crest. Below: eWh blocks id+ resulting in red in face, see also cocks on page 7 & 8.

Here you see an eb-isabel (top) and an eWh-isabel (bottom). The under colour is visible through the silkied feathers and visually gives a more matt appearance.



An earlier isabel with eb, causing grey undercolour to shine through. Still a considerable amount of lavender (as in black in buff) present.

e-allele matters

Photo: Brenda Bettinger (USA)

Under colours and how this are visible from the outside.
Below: hen on the left is eWh almost white under fluff, the hen on the right is eb based which is seen in the wing where still some pencilling is present. Her under fluf is more saturated. Black in feathers plus eb contribute to darker skin

Wing with pencilling remains in eb based (UK gold) buff. This pencilling is part of gold based buff but should be less. The columbians should be stronger. Columbians have no influence on skin colour. Some black in the main tail feathers, compare to wheaten hen on the left.

Keep different light conditions and cameras in mind, colours vary a little compared to reality.

A crate full of chicks of various breeds and colours. The buffs and reds have a head spotstripe and neck stripe.

Photo on the right: a buff and red grower. The buff I can't guess its e-allele, however the red is clearly based on eb. These are the first feathers, still chick fluff on heads. The red shows grey under colour and even some remains of pencilling which will go mostly away.
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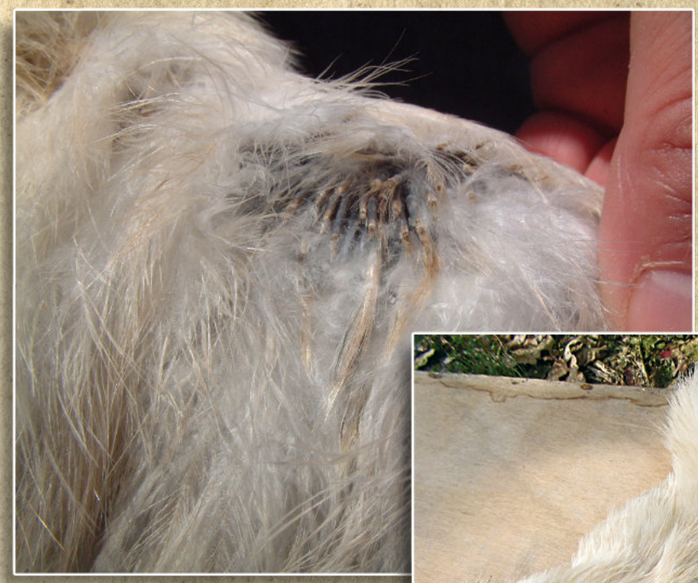
I've tried to compensate colour temperatures this as much as possible, still not 100.



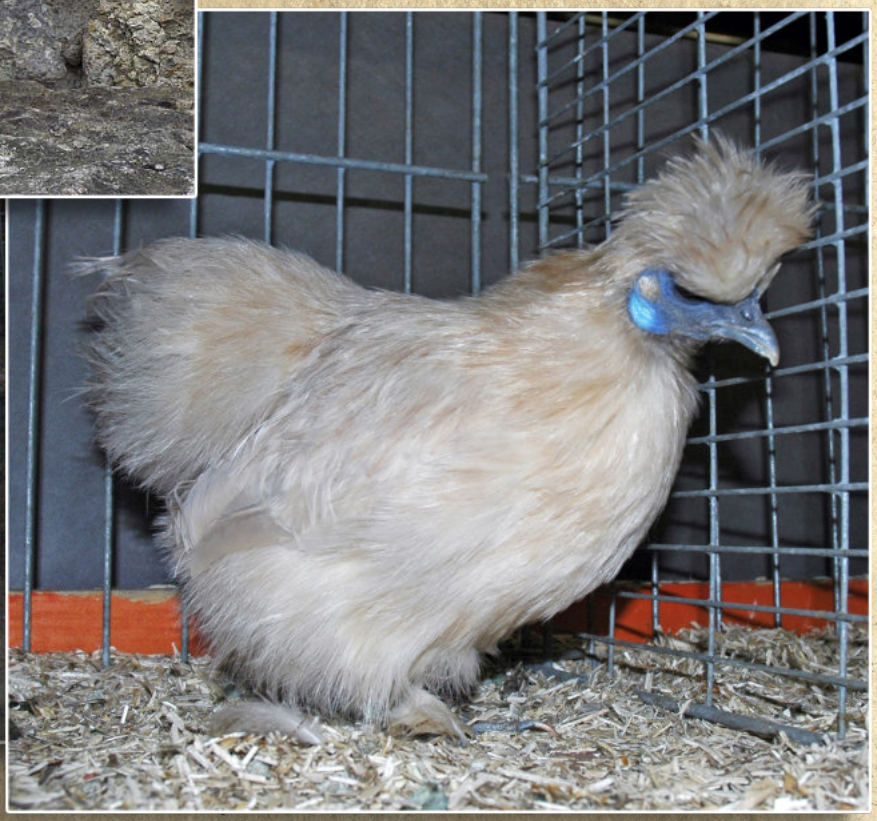
The shoulder patch on an isabel. Even when the laveder forefather didn't show this, it can suddenly pop up.
Isabel is (certainly) not exempt from this annoying side effect of lavender which hits some of them.

The two isabels from the front page now seen from above. Left eWh, right eb.

Then there has come the time to show the project isabels. Here an eb/eWh (guess), given the dark skin (however a bit blue) and the amount of lavender (black) visible in the wing. You can't see lavender in the tail due to the colours. This hen has a half beard. It was a bit messy regarding beards, comb shapes (pea so no wattles and rose with wattles as in the cock on the right).

Below: the case of red comb and wattles in an eWh based isabel cock. These are chickens from the isabel-project group.

Top left: also a show hen, above, another eWh based isabel cock with rose comb.
Left: an isabel from Yvès Silvestri (FR), see page 70 from the book Silkies and Silkie bantams, wheaten based buff (red comb).
Bottom left: a bearded miniature wheaten based isabel project hen. Below another young isabel Silkie bantam hen at a show, unfortunately without wattles. Young hens before lay, are still dark skinned.



THE END