

Some Lessons for Breeding Gouldians

by Dr Tony Hanks, OAM

[At the August meeting of the QFS, Dr Tony Hanks presented a talk entitled “Supplements & Lessons for Finches & Gouldians”. This article is a summary of the second part of this interesting topic.]

Successfully breeding Gouldian finches is a big topic where we never stop learning, so I have selected just a few of these areas to discuss:

1: Genetics is Interesting!

Many people will often comment that “Genetics is too difficult for me”, but the truth is that the basics are not difficult; and that the knowledge can add so much to the enjoyment of this wonderful hobby.

As part of this, I have prepared a one-page summary called “Basic Genetics for Breeders of Gouldian Finches”. It needs to be in colour to differentiate the different symbols, so this page is available for free download on the Gouldian Care website – www.gouldiancare.com.

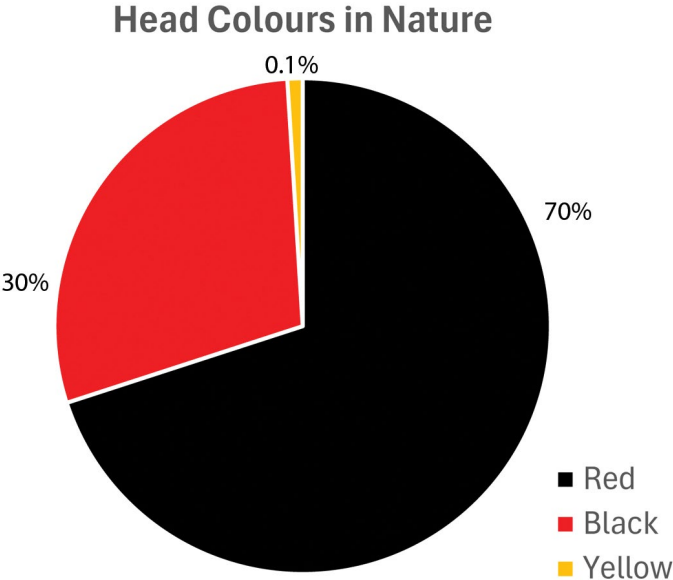
Gouldian back colours are a good example. Figure 1 shows 16 different mutations, but they are actually not all completely different. Seven of them are simply combinations of other mutations. For example, the Pastel Blue is a combination of Blue and the Dilute (Single Factor) Yellow Back.





When I first started to understand Gouldian genetics, an interesting question for me was “Why Don’t Red Headed Gouldians Dominate Black Headed in Nature?”. Given that Red Headed is dominant and Black Headed is recessive, why hasn’t Red taken over after many thousands of years?

Logically they should now all be Red Headed since every bird with both Red and Black genes would have a Red appearance (or phenotype). However, in reality it is the Black Headed that exist in the greatest numbers. The exact opposite of what we’d expect at first.



The answer has multiple components:

- Assortative mating – the natural preference to sort their breeding partners by matching traits (see later)
- Red Headed are more aggressive
- Red Headed have a shorter lifespan
- In mixed pairings, Red with Black, there are higher juvenile mortality rates (see later)
- In mixed pairings, there are less hens produced (see later)

2: Learning from Accurate Records

Keeping accurate records is essential if you want to be able to make the best decisions when selecting breeding pairs. It is also necessary if a birdkeeper really wants to learn from their past experiences (and mistakes).

I keep my records in a database program that I wrote for myself, however there are many commercial products available too. These include BirdTracks, Birds Evolution Pro, AviManage, My Birds, and many more.

Another effective option is paper records and there is free form available on the same Gouldian Care website mentioned above. Since I control pairings by cabinet breeding, I can keep very accurate records about the genetic history of every bird.

In a landmark paper by Sarah Pryke and Simon Griffith (2009) they found that pairs matched for head colour produced 46% male offspring, but those that were mismatched (red with black) produced an amazing 82% males! This due to due to assortative mating preferences, but it still surprises me.

Fortunately, I record the gender of every bird after their first moult, even though I will not be keeping them all. While I don't intentionally set out to pair different head colours, sometimes it is necessary when I am selecting based on other factors like back colour. So, I was able to go back to this data and confirm that the progeny of all my mismatched head colours has been 78% cocks. Effectively the same finding as Pryke and Griffith.

My data has also shown that matched head colours produce an average of 6 live fledglings from two clutches per year, while mismatched pairs produce only 4.

Another interesting statistic from detailed records is the differences between normal wild-type birds and the various mutations. My perception was that I was producing less progeny from the mutations; and my data confirms it. The Hatched Rate of chicks from fertile eggs is 92% for normal Gouldians, but this drops to 68% for mutations.

Similarly, the Offspring Survival Rate of fledglings from fertile eggs was 79% for normals versus 52% for mutations. When White-Breasted was excluded from the analysis, the Chicks per Season were 35% lower for mutations when compared to normals.



The reasons for these differences are again multi-factorial, but they include . .

- Diminished visual signs for mate selection
- Some paler head colours for mate selection
- Less intense colours for mate selection
- Weaknesses due to inbreeding & line breeding
- Past imprinting on foster parents
- Younger age of the birds & impatient owners

3: Triggers for Breeding

In the wild, it is normal that breeding starts with the wet season and the primary trigger is abundant nutrition. This is natural for all animals and it is just as true for Gouldians. When there is an abundance of sprouted and half ripe seeds, insects and greens it is a good time to breed.

In an aviary or cabinet situation we can stimulate this same response by only offering specific trigger foods at this time of year. These include Greens & Grains, seeding grasses, soaked seed, and green milk seed.

White millet as milk seed has been a particular favourite with my birds and it is highly recommended for anyone who has not yet tried it.



Milk seed before and after.



4: Artificial Lighting

It is tempting that think all animals are similar, but the reality is that birds are very different to mammals. They have a much more rapid digestion and it is essential that they must eat regularly. For example, a Gouldian finch can travel in a carry cage without water, but they cannot be without seed for long.

- More rapid digestion
- Higher body temperature (42 vs 37 for us)
- Faster heart rate (avg 225 vs 80)
- More dark sleep required (11 vs 7)
- More meals per day (9 vs 3)
- More food per body weight (35 vs 4%)
- More dependence on food for survival & health

This means that when Gouldians are housed in some locations the amount of daylight can be insufficient, especially during winter. Taking our meeting location of Brisbane as an example, the dark time in winter is 13 hours and 36 minutes. It is my opinion that this means the available daylight feeding hours are too short.

A solution is to add artificial lighting and I do this by using low voltage LED's called Grow Lights. These are scheduled to come on before sunrise at 5:00 am every day. No extra lighting is used at the end of the day because the darkness would then be too abrupt to allow time for safe roosting.



5: Conclusion

These thoughts were presented for consideration. At a later time we can discuss the other aspects for maximising the breeding success of Gouldian finches.

