

The Six Genetic "Secrets" of Breeding Racing Pigeons

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My background and intent:

I am here to share what I have come to believe after 40 years of intense study and practice in the field of animal breeding.

I am not here to make converts. There is plenty of room in the sport for many different approaches. Use the one that works best for you.

There are no “silver bullets” in this business. Every successful approach takes a plan, patience, and hard work.

Why your breeding program is so important:

As we will continue to improve our racing techniques, remember that once a new technique is widely known, it stops being an advantage and becomes a requirement to remain competitive.

As sophisticated as racing is today, we may well be close to the point where our techniques have maximized all the environmental factors. When this day comes, genetics will be the only area (outside of random luck) where one may forge an advantage.

The reason these are secrets:

These are secrets simply because they do not appear to be widely known or followed.

It is not because they are difficult.

Nor is it because they haven't been disclosed or discussed by various people over the years.

I think the biggest barrier to most people using them has been that they don't believe that it can be that simple.

Secret 1 - Know what you want!

You have to start here. Genetics can be used to produce just about anything you want. Like most things though, if you don't know what you want, it will be impossible for your program to produce it.

Secret 1 - Know what you want!

This is what I want - Birds that win.

On the surface that would seem stupidly obvious. What we really have to ask though is what does it take to win?

I love a well handling, beautiful bird and I believe that many of the traits that we look for when handling birds are important in helping them win races. But I have come to firmly believe that there are additional critical traits required for winning that can not be seen or felt.

Secret 1 - Know what you want!

I have one family in particular which handles very poorly. For the first two years I had this family I wouldn't let most people even see them and if somebody caught me with one I would claim it was a pumper. However the breeder had sworn by them and I had invested in them so I quietly stuck with the program.

As it turns out they probably account for half of all the wins we have had to date.

Secret 1 - Know what you want!

The point ISN'T that they win and so handling traits aren't important.

The point is that they win in spite of their pathetic handling traits.

In my breeding program I want to make sure that I do not ignore these "intangible" traits.

Secret 1 - Know what you want!

I am absolutely convinced there are three separate genetic components to race winning traits:

- 1) intelligence to KNOW HOW to come home in race winning time.**
- 2) physical ability to be ABLE to come home (again in race winning time).**
- 3) ability to be motivated to WANT TO come home (in race winning time)**

Secret 1 - Know what you want!

The “KNOW HOW” ability will be significantly more important for the rest of our flying careers due to the increasing solar storm activities that are projected for the next fifty years or so.

The “WANT TO” ability is widely known within the sport, though I believe its genetic basis is under appreciated. For example, while widowhood or flying to eggs/nest can enhance it, I believe the degree to which a bird can be motivated has a genetic basis and can be increased.

Secret 2 - The genes have to be there!

If the genes for great racing pigeons are not in the gene pool of your loft, you will NEVER get them by breeding more generations. It is true that random mutations occur, but it is virtually certain you will not live long enough to see enough of the right ones occur spontaneously in your loft.

The genes do not have to be in one bird, just in the pool of genes which comprise your breeders.

If the genes are not there - get them!

Secret 3 - Test the pigeons fairly!

The best testing is with contemporary groups, where you attempt to minimize all environmental variations. This allows the results to be more significantly related to genetic differences.

Single results are almost meaningless. I don't take anything seriously until I see it for a third time.

Secret 3 - Test the pigeons fairly!

Breeders are culled if they fail to produce a significant result after placing 10 or more of their babies (with 2 or more mates) in fair tests.

Similarly, they are culled if they fail to produce 3 significant results after placing 20 or more of their babies (with 2 or more mates) in fair tests.

Secret 4 - Strict culling!

From a breeding standpoint, I am only interested in retaining the top 1%. To minimize errors I will often retain (and subsequently test) from a wider range (perhaps 5%), but it is only the top 1% that I am after. Anything less than this significantly slows the rate of improvement.

If you are not culling the vast majority of the birds you raise (after evaluating the results of fair tests), then your progress is not nearly as great as it could be.

Secret 5 - Line up the good ones!

Once you find the great ones, you need to intensify their genetic contribution to the gene pool of your loft.

This is done through inbreeding. In other words, put the great ones into the pedigrees of your birds as often as you can.

Secret 5 - Line up the good ones!

There are three rules you must follow when inbreeding:

- 1) It should only be practiced with world class animals.
- 2) If you follow Rule 1, it is not possible to inbreed too closely.
- 3) When inbreeding, you cull more, not less!

(At the end of these materials I have included a few additional slides about inbreeding. We could talk for days just on that subject.)

Secret 6 - Outcross to raise the bar!

The goal of my breeding program is to produce a series of families that consistently produce uniform crops of top producers.

Once this is achieved though, it means that further improvement will be difficult. If the gene pool has been narrowed to produce a uniform crop, then deviations (positive and negative) will be rare.

Careful outcrossing is always an integral part (in the long range view) of any successful inbreeding program.

The Six Secrets:

Know what you want

The genes have to be there

Fair and meaningful test

Strict culling

Line the good ones up

Outcross to raise the bar

What Inbreeding Does:

- 1) **Increases predictability by narrowing the gene pool. (This also means that it decreases the variability that will be seen in the offspring)**
- 2) **Decreases the effect of heterosis**

What Inbreeding Does:

Inbreeding is just a tool.

**Like any tool, its results depend upon how it is used.
My son once used a hammer to cut a board in half.
Jack Benny played the violin, but not like Issac Stern!**

What Inbreeding Does:

Here are two rules you must never forget:

- 1) Inbreeding should only be done with world class animals. If you inbreed with average animals you will develop a line that is only capable of producing average animals.
- 2) When used properly, it can not be over done. I have done as many as 8 consecutive generations of brother-sister, father-daughter, and mother-son matings.

What Inbreeding Does:

There are essentially two disadvantages:

- 1) The decrease in the positive effect of heterosis can actually become a negative effect in the case of extremely close inbreeding (this is called inbreeding depression).
- 2) Previously existing but largely unexpressed Undesirable Recessive Traits (URT) will be expressed in greater frequency.

What Inbreeding Does:

Key areas affected by heterosis/inbreeding depression:

Development

In the Egg

Hatching to Weaning

Weaning to 1 Year

Reproduction

Race Performance

Recovery & Viability

Stress Resistance

An Effective Strategy for Racing & Breeding:

- **Maintain straight bred parental lines (do not breed from the crosses)**
- **Use proven F1 Yearling hens on proven outcross cocks for the race team**
- **Performance test all parental lines. Use contemporary groupings to minimize non-genetic variation.**
- **Always maintain at least two generations in the stock loft. Sometimes progress is measured in two steps forward and one step back.**
- **Boldly experiment, but reject if results do not represent genetic progress.**

An Effective Strategy for Racing & Breeding:

To develop a family:

- **Assure all desired genes are in the gene pool**
- **Linebreeding is usually the method used for establishing new families, while inbreeding is used for maintaining and improving existing families.**
- **Consider developing two families based upon the cock and hen of a “golden couple”**

Practical Tips:

- **Develop accurate selection criteria**
- **Test fairly and consistently**
- **Always select around the weakness of the line**
- **Cull more (not less) when you use inbreeding**
- **Maintain detailed and accurate records**
- **Selection is a three stage process:**
 - The 1st cut is based on the bird's potential**
 - The 2nd cut is based on actual performance**
 - The 3rd cut is based on the performance and/or breeding of the progeny**