

The Practical Aspects of Inbreeding

By

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A while back, I was threatening to write an article on inbreeding, but fortunately for you, I got onto other topics and somehow didn't get back to my discussions on breeding. To be honest, when I write an article, I have to be motivated by the subject, and frankly, I just don't motivate quite as easily as I used to. This lack of motivation seems to be spreading to everything including the upkeep of my loft. In fact, for the first time in three years, I am actually making a change to my setup.

Most of the pigeons I own are not old enough to have actually seen me with a hammer in hand. I was wandering through my backyard with a hammer the other day and, to tell the truth, I was a little stunned myself. I work so hard in my job that I just don't have it by the weekend anymore, so when I decide to work, I work really fast. Not that I want to make a habit out of it, but I have it all worked out where I can surround myself with a variety of power tools and off I go. It used to be that I could run eight or ten hours for four days straight (the most I could ever get off in a row), but these days my motivation has dropped off to the point where I am sort of disappointed when I go out the back door and the lofts are still there.

If it didn't come down to my love of looking at the product of my seven days of creation, I probably would have quit long ago. However, in my mind's eye there is one thing and one thing only: that next great pigeon. I wish this vision would go away and leave me in peace; however, I once quit for five years and this vision haunted me day and night, so what was the point of being “quited” when I was destined to live it anyway. Most people would have to drink or do drugs to have visions like mine. To quote my one-time idol Pete Rose (who recently had to spoil everything by opening his mouth), pigeons are “my prison without bars.” Of course, he got paid better for his book than I will get paid for this article, but at the rate he gambles away his money, we should both be about financially even at the end of our lives.

One of my favorite quotes from the sporting world next to “you can't win them all if you don't win the first one” came from Patrick Ewing, the center for the Knicks. A reporter that was giving him a hard time after he signed a contract for a huge amount of money said, “Man, you make a lot of money.” To which Patrick replied, “Yeah, but I spend a lot of money too.” Fortunately for me, I didn't have to find a sport that paid well just so that I could say stupid stuff; I am able to do that right here where the price of admission is right and where usually this far into one of my articles the audience is small!

I would suppose that in order to produce a pigeon, one would have to go through the bother of breeding a pigeon and unfortunately, that requires work. I think in my last article I mentioned my theory on pigeons: If they see you working, they collectively

think it's funny, and they deliberately slack off still further to watch you work even harder. Pigeons are extremely sadistic that way, you know. Sometimes if you stand real quiet right outside the loft, you can hear them laughing at you after you leave. After a while you recognize their individual laughter and those are the ones you cull.

"Practical Inbreeding" -- I think I once read a book by that title. If I remember right, it was the one with the diagram that would take a rocket scientist to understand and 30 years to get to where the author was trying to go. If he is still alive, my hat is off to him for being brave enough to even bring up the subject.

While I suppose I could delve into scientific inbreeding, there is no way that I could explain it better than my friend Dave Shewmaker already has. Instead I want to focus on the practical. Right off, let me say that for most of you, inbreeding is going to be anything but practical. Personally, I would only recommend it to the most experienced of fanciers, and, even then, I would suggest using great care and numerous safeguards. As you will see, inbreeding is really not practical for the small breeding team. However, with this being said, it has the potential to improve performance. We will discuss these pro's and con's herein.

We have all heard of inbreeding; however, what makes this subject unique and confusing is that in itself, there is no practical purpose to inbreeding. By this, I mean that inbreeding is not the goal, and if we were to stop there, the experiment would be a big disappointment. It is really the first step in a two-step process. For inbreeding to be of any value, we must get to the second step, which is hybridization. Although we are not going to discuss hybridization today, it suffices to say that it is based on the crossing of two unrelated pigeons that are inbred.

While I have seen fanciers use inbreeding to preserve the blood of a great pigeon, this really isn't too practical either. If it happens to be a pigeon that is part of a line-bred family, its inbred offspring will either increase the inbreeding coefficient of the next line-bred mating, or it must be relegated to out-crossing to produce hybridization. Sure, there is no real guarantee as to the percentage of inbreeding in any pigeon, but I am still not wild about spending all of your time trying to save the past. I remember the past and it wasn't as great as people try to make it sound.

I remember in Whitney's book on breeding that he discussed inbreeding for something like eight generations to recreate the original. He provided all of us with many great things, but this is not one of them. I honestly can not imagine breeding for ten to fifteen years and who knows how many useless youngsters, to recreate an original. I would rather move on to the next great pigeon, which if the fancier knows anything about pigeons, should come along faster than that anyway.

As you know, in the past, I have often mentioned that I have a very line-bred set of Hofkens. In line breeding, which I will get to one day, the point is to keep the genetics close without getting them too close. The point of line breeding is to achieve genetic consistency. This offers two advantages. First, because the pigeons are generally

physically more alike, pairings are easier to make and easier to predict. Second, there is a generally a higher percentage of success in the youngsters. The enemy of line breeding is genetic depression.

I like to think of line breeding as driving very slowly toward a cliff that is miles away. However, as I discussed in my last article, eventually you will be faced with these two problems. Line breeding offers the potential for much higher consistency within the genetic traits of your family. However, as genetic depression begins to creep into the family, consistency remains high, but outright winning will likely continue to diminish. When this occurs, the only answer is new blood.

The interesting difference between line and inbreeding is that line breeding attempts to find a balance in the inbreeding coefficient over a longer period of time. When the coefficient is too low, genetic consistency is lacking; when it is too high, genetic depression will eventually set in. Inbreeding, however, actually tempts fate. It is a deliberate attempt to increase the coefficient in a short time period. The race in inbreeding is to get to the desired generation before the genetic depression sets in.

The first concern in inbreeding is finding pigeons that are amenable to inbreeding -- very few are. I have often heard it said that the better the original genetics, the more successful the inbreeding. I disagree with this. I have seen many great families that would line breed but not inbreed. What I would say instead is that the better the original genetics for inbreeding, the more successful the inbreeding. What makes it complicated to identify inbreeding stock is that the fancier will be looking for pigeons that likely will have never been inbred, but that will inbreed.

The second concern in inbreeding is not just finding individual pigeons that inbreed well, but finding families that inbreed well. The more pigeons within a family that can successfully inbreed, the more likely the inbreeding program will be successful.

The third concern is finding two families that can first be inbred successfully and then hybridized successfully. This is a real task because there have been very few times that I have seen two families in one loft that I thought handled the inbreeding stage very well, let alone the crossing stage. I know several lofts that only inbreed one family and then elect for a weak hybrid using a non-inbred cross. Recently, I visited a very great fancier that does this very thing. He said that he attempted double-family inbreeding several times, but said that he just kept coming back to one of the two families working out.

The fourth concern revolves around the percentages the pairs put out. This is in part based on what you, the fancier, can actually stand as a successful percentage. On average, even a good inbred pair will only produce one good one out of every eight to twelve pigeons. If the fancier has the room and a large number of breeding pairs, then he can afford to set one or two pairs aside and wait one to two years for a potential success story. However, what if you have 12 pairs? The maximum that you can produce is 72 youngsters in three rounds. Now put two pairs aside and you are down to 60 possible youngsters. I don't know about you, but if I am going through all of this for a single

youngster, I am not going to take a chance on losing any of them by flying them around the loft. I have also seen pairs that produced higher percentages of good inbreds that were not as explosive in the hybrid stage and visa versa. The truth is that it is difficult to know what percentage you are going to get at any time, but inbreeding is extremely unpredictable.

The fifth concern is the number of generations a family can be inbred. What happens if you attempt a double inbreeding? Many fanciers will tell you that the odds are getting worse. However, I have found that if you can identify a successful inbreeding pair in the first generation, it is often about as successful in the second generation. In reality, you have done much of the work by achieving success in the first generation. However, the third generation is where things generally start to fall apart. While each successful generation of inbreeding will help improve the genetic explosion during hybridization, there are two levels of diminishing returns. The first is in the percentage of success. The second is how much explosion you are gaining.

I am going to go off into one of those examples that are usually difficult to follow because they are bringing two concepts together. However it is necessary here. Over the years, I have determined that an average good pair of pigeons that raises six youngsters will produce one good to great racer and one good to great breeder.

From an inbred pair, we can pretty much rule out racers, and my studies suggest that when you find a successful pair, as I have stated above, the odds are going to be something between 1/8 and 1/12. The success in double inbreds tends to be 1/15 and 1/20. However, triple inbreds tend to be closer to 1/30. I have no exact scientific proof of these numbers, but they tend to go along with my findings both in my loft and the lofts of others. Based on these numbers you can see that you have a better than average chance of having success in the one year of breeding in the first generation of inbreeding, and you have a pretty good chance in one of the first two years of having success with double inbreds. However, by the third year, you can see that there is a significant dropoff in the odds. In fact, if this is true, you might have to wait the lifetime of the pigeon for success.

Now let's take a look at what hybrid vigor can do for us. Hybridization (the second step of the inbreeding process) is of course the point of inbreeding. The question really is: for every generation of compression, how much explosion we will get in return? For inbreeding to be viable, first we have to assume that the more generations of inbreeding compression, the bigger the hybrid explosion. However, as I mentioned above this is a diminishing return.

To make this concept easier to follow, S= breeding success rate, G()=Generation, E() =Percentage of possible explosion.

G(1), S(1/8), E(75%)

G(2), S(1/15), E(80%)

G(3), S(1/30), E(85%)

Notice that in the first generation, 1/8 of the youngsters will be successful, and when they are, they will produce 75% of the possible explosion. Then notice that by the second generation, the chances of breeding a double inbred are 1/15, but that you only picked up another 5% of explosion. Notice in the third round that the chances of breeding a triple inbred are 1/30 which is pretty low and that even when you accomplish this you are only gaining another 5%. It is for this reason that many fanciers tend to stick to first generation inbreeding.

In relation to the previous example, if I have a lot of room and a number of breeding pairs, I can set two first-generation inbred pairs aside for inbreeding. Now let's say that I want to work with a double inbred pair. Until the double inbred is proven, I am going to also want those first generation inbreds, so now I am up to three or four inbreeding pairs to maybe produce three or four good inbreds each year. Did you ever see the movie *Fantasia*? Do you remember when the sorcerer's apprentice is trying to kill the broom with an axe? Every time the broom is hit, it splits and there are more brooms. Well that is what inbreeding will do to your breeding program.

Now let's say that we fight through all of the odds that are listed above and we have some success on the inbreeding and hybridization. Then we are faced with a new problem. Inbreds generally don't fly well and hybrids generally don't breed well. This is very much along the same lines as to why so few families ever get started in the first place. When most fanciers start out, they don't have 30 related pigeons. They have a good pigeon from this loft and a good one from that loft. Since they are not related, in the first generation they act as a very weak hybrid and there is usually some flying success. (This lends credence to the concept of only inbreeding to the first generation because an inbred is probably 50 times more potent than a straight cross). However, in the second generation of crossing, the gene pool has broadened significantly and the success rate goes down. Most fanciers believe that the pigeons are no good, and they start replacing them. Most fanciers just don't have the time or patience to wait pigeons out for three or four generations until the genes start to converge again.

So now that we have a hybrid that is a big winner, if it is not going to breed, what good is it? While most true hybrids are poor breeders, they do tend to fold back (backcross) into one of the two sides of the inbred family from which they are bred. I always prefer to bring a hen back into either side of the family. However, for all practical purposes, the first backcross is a wasted but necessary generation. I say wasted, because they are not great breeders. However, they do introduce new blood into the family, and they also bring in significant vigor. I have mentioned the Lorenz cock several times recently. He was mated to a daughter of the super pair and produced a super son. I have mated this son to another daughter of the super pair. By doing so, I am not only bringing him back in, but I am already working to increase his coefficient by mating him to his aunt. We will see if some of the vigor follows along.

Now let's go back to the loft that has a lot of room and a large number of breeding pairs. Let's start off by saying that if the fancier is performing backcrosses that he probably has a more serious inbreeding program (the Lorenz cock example). As we have discussed, the fancier may have four pairs of inbreds and he may be trying to reintroduce three or four successful hybrids. Now he has potentially invested eight or so pairs that are producing very little in the way of successful pigeons. Most fanciers are eventually faced with a new question, should they waste the space to produce inbreds or reintroduce backcrosses?

I think you can see that inbreeding starts to become terribly inefficient for the average small loft. As I have already mentioned, I recently visited a great fancier who has an inbreeding program. He probably keeps 50 plus pairs of breeders; however, even at that rate, he never inbreeds more than one generation deep. He does however backcross the successful ones.

When inbreeding, I think a couple of rules should be followed. In general, inbreeding tends to decrease size and increase color. For some reason it tends to increase the number of pearl eyes. Dave Shewmaker has pointed out to me on several occasions that size can be increased as well as decreased based on selection. If the fancier selects the biggest prototypes then size can actually increase. While he is probably right, my experience says that line breeding and inbreeding tend to produce smaller pigeons.

If you decide to inbreed reds or white-flight pigeons, you will tend to find a compounding problem. We have already discussed that the odds of getting a good inbred are less than one in eight. Be very careful about using heavy white or red pigeons. I don't know about your luck, but my luck says that if I have a great red cock, the best daughter will also be a red.

I have a very close friend who is bound to read this article eventually, and he will get a kick out of this. He once told me about a cock that he owned that was homozygote. (A homozygote breeds all reds). He was puzzled why every youngster was a red. When I explained it to him, I also told him I wouldn't go down that road unless he intended to keep them out of the breeding loft. A year later, he told me that his three reds in the breeding loft had now turned to six. He also told me that one of his friends who owned the same family now had a breeding loft that was 70% red and now having to breed reds to reds. He finally asked me what I would do. My answer was, "If you don't want to marry a girl that smokes, don't date a girl that smokes." He is now down to one red.

Before any of you even get started, personally, I don't like reds in pigeons or dogs. In fact, I have owned less than five red pigeons in the last 20 years and I don't own any now. However, this is just my personal preference. The truth is that of the last three I did own, one bred extremely well and the other two were super flyers out of the first one; however, this was over ten years ago. The point I am trying to make is that when you inbreed, avoid compounding problem.

When a fancier inbreeds white flights, he is very likely to get more white flights. I happen to be a very big fan of white flights, but I prefer to have no more than two white flights on a wing, and I like for them to be in the middle of the wing. If you start inbreeding with all white flights you will very likely get too much white.

As I have mentioned, inbreeding leads to more pearl eyes. It is relatively rare for two unrelated yellow-eyed pigeons to produce a pearl, but it is possible. It is far more common for two inbred yellow-eyed pigeons to produce a pearl eye. The original Colorado pair was a yellow-eyed brother/sister mating. The best cock that the pair ever produced was pearl-eyed.

If the fancier intends to inbreed pearl-eyed pigeons, his is going to get 100% pearl eyes no matter what he does.

Inbreeding is a great concept but it is really out of the range of most people. I wouldn't recommend it to anyone that breeds less than 20 pairs. Remember that not every pigeon will inbreed and not every family will inbreed. When you find one that will, you have done most of the work so give the double inbred a try. Stay away from compounding problems especially when they involve color. Be ready to cull a lot of pigeons.

Until next time!

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