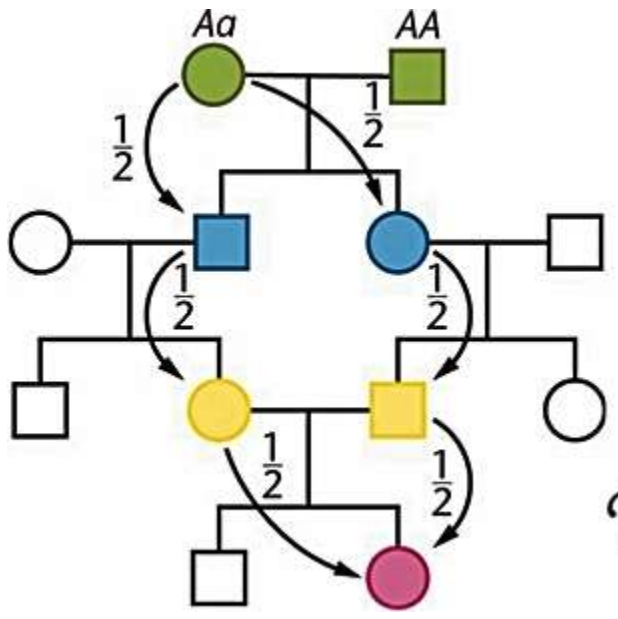
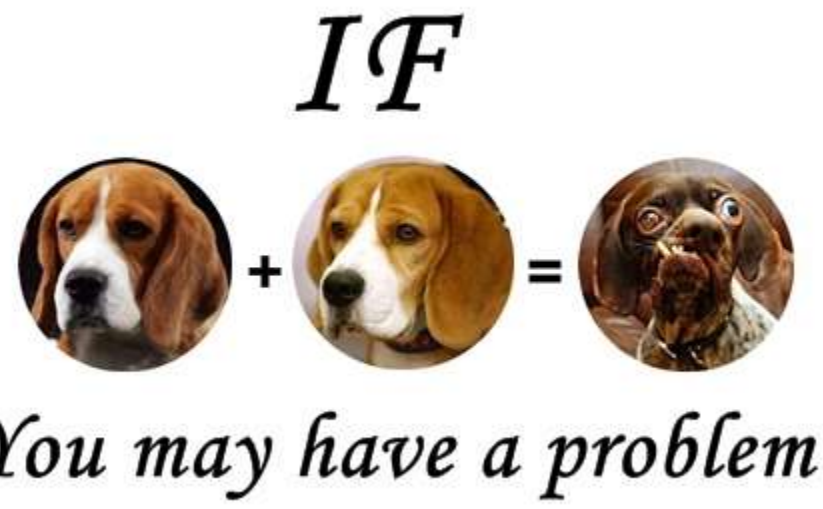
Establishing Your Strain…

Jim Lane - Laneline Beagles





A woman saw an ad in the local newspaper which read: "Champion Pedigree Purebred Police Dog $25." Thinking that to be a great bargain, she called and ordered the dog to be delivered. The next day a van arrived at her home and delivered the mangiest looking mongrel she had ever seen. In a rage, she telephoned the man who had placed the ad, "How dare you call that mangy mutt a Champion Pedigree Purebred Police Dog?" "Don't let his looks deceive you, ma'am," the man replied, "He's in the Secret Service." Sound familiar? How many have purchased dogs that are not what they are advertised to be? How many have bred dogs and the pups are not what you expected. How many have waited for a dog to be something that in reality, it will never be. Waiting for certain traits and characteristics to “kick in”. There is one thing that you can be 100% sure of, a dog will only be as good as the DNA in its linage will allow it to be. No magic training, no high powered food, no form of discipline or reward can push a dog to go beyond his limited capabilities which is locked in his DNA. So what do we do to finally stop falling for the “hype”, like Charlie Brown as he continuously attempts to kick the football in which Lucy continuously pulls away at the last minute? Establish your own strain.

First thing is first, the right dogs. Not just the “right” dogs, but the right dogs for you. Once you find the right “style” that you prefer, then you find the very “best” at performing that particular style. In every great line of dogs from the past, all the breeders had one common denominator. Willet Randall, L.M. Watson, Elmer Gray, George Nixon, Clarence Jones, Frank Reese and in this era, Branko Krpan, {*just to name a few that many refer to*}. None of these breeders started with a kennel of “culls” and turned them into greatness. They started with the very best hounds they could find and afford {within the style of their preference} and maintained and improved them with selective breeding and strict culling. I am going to attempt to give a “shallow” overview of line breeding, inbreeding and establishing your strain.

But what exactly is a “strain”? Not on paper or by kennel name, but by DNA. On a broad scale the “Beagle” in itself is a strain, much like the German Shepherd, Poodle and the Golden Retriever. All pure breeds from the different dog breeds are inbred. Keep in mind that to a scientist “inbreeding” means the breeding of related animals, which would include what we call “line breeding.” But how much is too much? Without line breeding, the breeds could never have been developed and would not reproduce “true to type” and we would not have the many “different” breeds that we have today. But what we are talking about is the breed “within” the breed.

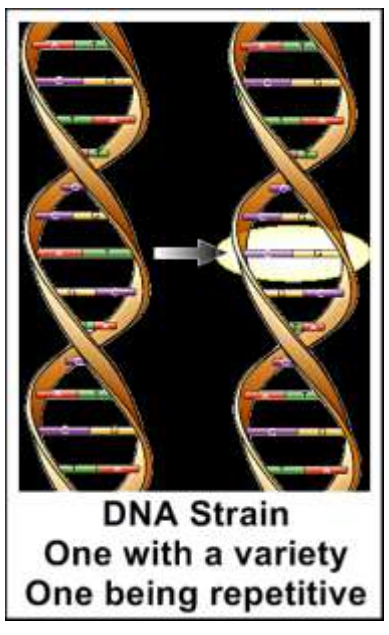
Once we have decided upon the “Beagle” and more specifically, the strain or strains of beagles of our choice, how do we then develop our particular beagles to be “true to type” with the characteristics and traits that we desire in our hunting dogs? We use the same methods that it took to separate and develop the different breeds of dogs to start with. Through selective line breeding. But again, the question comes up “how much is too much?” How do we determine when we have overstepped nature’s boundaries and simply gone too far? Well, nature has a way of taking care of deficiencies and we all need to heed to the warning signs. But many times “warning signs” are ignored for the sake of a desired pedigree, even the ones with lots of “red ink”. There are severe consequences if a breeder intentionally breeds “too close” and crosses the line from “line breeding” and enters the realm of “inbreeding”.

Genetically inherited diseases and faults that you will find when breeding too close are; hip and elbow dysplasia, patella luxation, epilepsy, eye disease such as cataracts, progressive retinal atrophy, cancer, allergies and skin problems, retained testicles, autoimmune diseases, dew claws and extra toes, crooked tails, bad bites and missing teeth, odd and unacceptable colors, temperament problems such as shyness and aggressiveness, conformation that is not common with either of the Sire or Dam, oversized head or bodies with undersized limbs and/or ears, an unjust drastic change of instinctive hunting style, retardation of reasoning, focus and speed of the action and reaction to different situations including running a rabbit, of the hound compared to the dogs previous in its linage.

Inbreeding depression symptoms are very subtle and gradual and are often overlooked, but we must remember it is the dog’s genes that make it more susceptible. The most frequently seen inbreeding depression signs are: Chronic poor health/poor keepers, higher incidence of disease in a line {or certain strain} of one or more diseases than is seen in the Beagle or canines in general as a whole, higher incidence of immune system diseases, unusually small litter size, difficulty in getting and keeping bitches pregnant, bitches that abandon a litter or are poor mothers, bitches that kill or damage puppies intentionally or by lack of care, studs that are indifferent to a bitch in standing heat, studs that cannot breed without help, low sperm count, earlier average age of death in a line {or certain strain} than in the general Beagle population as a whole. My friend Mike Oszust of Alamo Creek Kennels has a dog named “Brown Dawg”, he will be 16 years old this November. At 15 ½ years old, I could take him out and he would be as lively and vibrant as most 8 or 9 year olds. The fact that Mike takes better care of his beagles than most people do their children has a large factor in this, but the DNA and the genes of a dog hold the keys to everything, and breeders are responsible for the collaboration of these genes that determines the success or regression of any line or strain.

So is “line breeding” a bad thing? Absolutely not! As the statement was made earlier, without it, the breeds could never have been developed and would not reproduce true to type and line breeding is necessary for our hounds to develop the characteristics and traits that we desire our hounds to consistently reproduce “true to type”. My friend Larry Perry of West Virginia “pounded” this concept into every fiber of my being years ago, even though I had many doubts and questions about it, just as many still do today. But some things can’t be ignored, avoided or denied, like death, taxes and DNA.

I would like to add, many attempt to cross beagles from different strains together thinking that they should “mesh” well together because after all, a beagle is a beagle, right? Needless to say, they have many problems. Extreme differences in strains such as a Traditional Brace Beagle with a Hare Hound, or even a beagle from “hunting stock” with a beagle from “show stock” usually will not produce “true to type” of the sire or dam. When beagles have been bred for years to develop certain characteristics and traits they literally take on a “breed” of their own within the same breed. Crossing some of these strains together after they have been established in total opposite directions is almost the equivalence of breeding to a different breed of dog altogether. For some Beagle Strains, the only thing they have in common is having the appearance of a Beagle. Simply because the direction of the characteristics and traits has been line bred in different directions for years. The outcome is usually not good and it takes many unnecessary generations of breeding and culling to accomplish what you want. But then again, I know of a guy in Virginia that took his best male squirrel dog {a terrier} and bred him to all three of his beagles. He then has been breeding all their pups back to beagles for the last 7 and 8 generations. He now claims he has the best “Rabbit Machines” that has ever been let loose in the woods. Would I advise it? Absolutely not, but to each his own.



Many breeders of different breeds use a method or “scale” to make sure they do not breed too close. Coefficient Of Inbreeding or “COI” is the calculation used to determine the level of inbreeding on an individual dog. The higher the number for COI the closer the dog was line bred or inbred. A very low COI reflects that the dog was "out crossed", meaning the parents of the dog had little or no common ancestors “up close” and/or if there are common ancestors, there were outcrosses along the way within the pedigree to “water down” the effects of the line breeding or inbreeding that did take place.

The Coefficient Of Inbreeding or “COI” is measured by the following:

- Parent x Offspring = 25.00% - {Parent is 75.00% of blood}
- Full Brother x Sister = 25.00% - {Common Grandparent is 50.00% of blood}
- Father x Granddaughter = 12.50% - {Father is 62.5% of blood}
- Half-Brother x Half Sister = 12.50% - {Common Grandparent is 50.00% of blood}
- Uncle x Niece = 12.50% - {Common Grandparent is 37.5% of blood}
- First-Cousin Mating = 6.25% - {Common Great Grandparent is 25.0% of blood}

These are the numbers with these particular breedings. Keep in mind that every dog in your pedigree has a number. It may be 0.01% or 25.00% etc… and the numbers may fluctuate depending on the number of generations that you use for your COI, {it is recommended to use a 10 generation pedigree} and the number of out crosses that you may have. The total numbers of each dog in their proper order averaged out will give you the COI of your dog.

It is not unusual to produce an excellent quality dog from an “outcross” litter. The abundance of genetic **variety** can place all the right characteristics and traits in one dog. Many top winning Field Champions and Show Champions are a product of an outcross. **Consequently**, however, they may have low inbreeding coefficients and will lack the ability to uniformly pass on their good traits to their offspring consistently. After an outcross, breeders will want to breed back to dogs related to their original stock, to increase homozygosity and attempt to solidify the newly acquired traits from the outcross.

Line breeding concentrates the genes of a specific ancestor or ancestors through their appearance multiple times and the same genes being **repetitive** in a pedigree. The ancestor should appear behind more than one offspring {top & bottom}. If an ancestor always appears behind the same offspring, you are only line breeding on approximately 50% of the genes passed to the offspring and not the ancestor itself. It is better for line bred ancestors to appear on both the sire's and the dam's sides of the pedigree. That way their genes have a better chance of pairing back up in the pups being born. Genes from common ancestors have a greater chance of expression when paired with each other than when paired with genes from other individuals, {relatives too distant to really count} which may mask or alter their effects.

High COI percentages of over 20% increase the probability that genetic defects will be carried from common ancestors on both sides of the pedigree and will match up to cause the actual genetic diseases faults or defects that are mentioned above. When you reach 30% you will see some of the symptoms mentioned above start to take hold and many of these genetic disorders will eventually consume your strain.

A COI of 12.5% is equivalent to a half brother x half sister mating or a grandparent to grandchild mating. This breeding is the most common practice for breeders wishing to achieve consistency in true to type or to "cement" certain traits. As a result the litter will consistently be uniform in type, temperament, health, traits and characteristics, which is the goal for anyone breeding to maintain and better the breed. This breeding {12.5%} is referred to individuals that raise horses, sheep, cattle and dogs of all breeds as the method of choice by scientists and geneticists through research in the fields of genetics, immunology, and veterinary medicine and is considered the best breeding method to achieve perfection to the highest level that the gene pool of your particular strain will allow it to be.

So, let’s make a Strain! The crosses in the following diagram {read right to left}, are based on several things. The way different characteristics and traits “mesh” together and match up means everything. Each dog in every breeding must complement each other according to their strengths and weaknesses of both them and their line. You must have a proper balance of what each dog brings to the breeding such as; hunt, nose, brains, search, line-control, drive, speed, etc… The diagram below is strictly for the combination of the 4 “core” dogs below and the pups that derived from them in this particular sequence and bloodline. Each cross should be better than the previous one and the “end result” should be superior to what you originally started with. Adjustments and exceptions along the way may be needed, but a distinct yet flexible plan from the beginning is needed, along with common sense.

To complete this, you need 1 male and 3 females that you consider to be “your” version of greatness in a hunting dog that “pleases you”. It will take 10 breedings and you will need to keep or have access to 1 pup from every litter. On one occasion, you will need to keep both a male and a female in cross # 5.

The “correct” way to do this is to keep every pup from every litter and start, run and eventually only keep the best from each litter, but even then, the “best” from any particular litter may or may not be the best “reproducer” in that same litter. In the beginning you will get some pups that carry over the best traits of both parents, but you will also get pups that possess the worst traits of both parents. This is why you start out with dogs that have the fewest faults “in your eyes”. The more you line-breed, the traits {good or bad} will be magnified with consistency. Key word here is “Cull”. You must not let anything keep you from culling hard and being realistic of what’s best “long term” for your line. Do what’s right, for all the right reasons. The more you line-breed only the best to the best, the more consistency you will see and a higher percentage of pups with positive desired traits. Not everybody can keep and/or train this many hounds, this is where “a circle of friends” comes in handy. You will want to distribute pups to “hard core” gun hunters and field trialers. Sell them “cheap” or give them away, as long as you have access to them and can monitor how they progress in the field and how they measure up to other dogs in competition. It’s not about money or a “name”, it is about securing, maintaining and improving your line of dogs. Over the years, many of my dogs do not carry “my” kennel name, I am concerned about the “DNA”, not the name on the paperwork or “credit”.

Below is “exactly” what you will need from each litter. The first 3 crosses are your most important “foundation” crosses. Consisting of 4 Beagles, 1 male and 3 females, crossing the same male to all 3 females. This “overall” process takes patience, time, non-bias culling and more patience. When done right, the final product is worth it all. However, start with the best possible 4 core dogs as you possibly can find and/or afford.

This example breeding is going to be a hypothetical cross, so let’s have fun with it.

- Cross #1 - 1 Male - **FC Gray’s Linesman & FC Branko’s Close Call Girl – Key Cross**
- Cross #2 - 1 Female - **FC Gray’s Linesman & FC Suger River’s Sweet Magnolia – Key Cross**
- Cross #3 - 1 Female - **FC Gray’s Linesman & IFC Cunningham’s Annie – Key Cross**
- Cross #4 - 1 Male
- Cross #5 - 1 Female & 1 Male
- Cross #6 - 1 Male
- Cross #7 - 1 Female
- Cross #8 - 1 Male
- Cross #9 - 1 Female
- Cross #10 - At this point you will want to keep both a male and a female, your “strain” is established. Take this cross and breed them back to {Cross #5}. The pups from this, you continue to line-breed to the best from crosses #6 thru #9. Continuing to line breed dogs that complement each other. Often using Aunts to Nephews, Uncles to Nieces, Half-Mates and Females back to their own Grand-Sires. This will maintain the strain at around a 10 to 15% COI. As long as your 3 foundation females were not too closely related, you can do this indefinitely and have a great strain for the rest of your life.

Phase 1

Cross #4	Cross #1	**FC Gray’s Linesman**
		FC Branko’s Close Call Girl
	Cross #2	**FC Gray’s Linesman**
		FC Suger River’s Sweet Magnolia

Phase 2

Cross #5	Cross #1	**FC Gray’s Linesman**
		FC Branko’s Close Call Girl
	Cross #3	**FC Gray’s Linesman**
		IFC Cunningham’s Annie

Phase 3

Cross #9	Cross #6	Cross #1
		Cross #5
	Cross #7	Cross #4
		Cross #3

Phase 4

Final Result: Cross #10	**Cross #8**	**Cross #4**
		Cross #5
	Cross #9	**Cross #6**
		Cross #7

Pedigree "*example*" of: Final Result: Cross #10

Price of Pups: *Priceless*

Cross #8	**Cross #4**	**Cross #1**	**FC Gray's Linesman**	**FC Sutton's Sport**
				Shimer's Coke
			FC Branko's Close Call Girl	**FC Dingus Macrae**
				Anna's Ann
		Cross #2	**FC Gray's Linesman**	**FC Sutton's Sport**
				Shimer's Coke
			FC Suger River's Sweet Magnolia	**Sugar River's Chaunsey**
				Hubbard's Dinah-Mite
	Cross #5	**Cross #1**	**FC Gray's Linesman**	**FC Sutton's Sport**
				Shimer's Coke
			FC Branko's Close Call Girl	**FC Dingus Macrae**
				Anna's Ann
		Cross #3	**FC Gray's Linesman**	**FC Sutton's Sport**
				Shimer's Coke
			IFC Cunningham's Annie	**IFC Wally of Floline**
				Cunningham's Janie
Cross #9	**Cross #6**	**Cross #1**	**FC Gray's Linesman**	**FC Sutton's Sport**
				Shimer's Coke
			FC Branko's Close Call Girl	**FC Dingus Macrae**
				Anna's Ann
		Cross #5	**Cross #1**	**FC Gray's Linesman**
				FC Branko's Close Call Girl
			Cross #3	**FC Gray's Linesman**
				IFC Cunningham's Annie
	Cross #7	**Cross #4**	**Cross #1**	**FC Gray's Linesman**
				FC Branko's Close Call Girl
			Cross #2	**FC Gray's Linesman**
				FC Suger River's Sweet Magnolia
		Cross #3	**FC Gray's Linesman**	**FC Sutton's Sport**
				Shimer's Coke
			IFC Cunningham's Annie	**IFC Wally of Floline**
				Cunningham's Janie

Keep in mind:

- **Some traits and characteristics are more easily changed and/or adjusted than others. Nose, Hunt & Brains takes 3 to 6 generations to adjust and change, and you can lose it in 1 generation with one wrong breeding and these traits are the hardest to attain or regain once lost.**

- **Speed, mouth & size/conformation are the easiest to attain and adjust in just 1 or 2 generations.**

- **4 dogs were used in the example above, 1 male and 3 females. All the other dogs in the pedigree derived from those 4 core hounds. If you stretch it out and use more hounds you then increase the gene pool which increases the unavoidable amount of differences in the "much broader" variety of traits and characteristics, of the good or/and bad. It decreases your consistency.**

- **Those "jack of all trades" type dogs, which are good at everything but great at nothing {with very few faults}, are great dogs to have and they re-produce well keeping the "fault" ratio down, also keeping consistency in your line.**

- **Don't make excuses for the dogs that you grow attached to and cull with a non-bias frame of mind.**

- **Establishing your own strain could be a great "project" for you and your children, grandchildren and/or your friends to enjoy and experience.**

If you are interested in learning more about these subjects, consult the following books:

- ***Abnormalities of Companion Animals: Analysis of Heritability***
  C.W. Foley, J.F. Lasley, and G.D. Osweiler
- ***Genetics for Dog Breeders***
  F.B. Hutt
- ***Veterinary Genetics***
  F. W. Nicholas
- ***Genetics for Dog Breeders***
  R. Robinson
- ***Genetics of the Dog (equally applicable to cats & other animals)***
  M.B. Willis,