**"BREEDING PRIORITIES"**

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Many labrador enthusiasts and competitors, whether involved primarily in field, obedience, conformation or dual-purpose dogs, believe that to produce "winners", winners must be bred to winners. But is the first priority when planning a mating, to produce winners? If the aim of the breeder is to produce better dogs in each generation, there must be a desire to honestly evaluate each animal in structure, trainability AND in health, making it possible to complement and breed selectively. Too often, dogs and bitches are selected for breeding only on the basis of titles, wins and pedigrees. Not all titled or winning dogs are great producers. It is common that a litter mate of the titled dog will be the one who produces puppies that are far better than himself.

Breed improvement comes when breeders in all aspects of the dog sport? understand the purpose of the breed standard and, learn about genetics to improve the odds of achieving correct structure, natural instinct and, genetic disease control. Breeding must be done with the goal of improvement, creating puppies better than their parents. Once we create lives, we ˜can't take it back" even if blind, crippled or full of structural faults.

Developing a "healthy" breeding program is a priority and all other goals must include physical soundness. ANY mating IS your breeding program. Many ˜programs" are more of the we will see what happens and then make changes next litter?. When I became interested in breeding dogs, I was driven by many years of livestock and horse breeding with my father. That was done with goals written down and prioritized. We focused on ˜categories" of health, conformation, performance and behavior.

We would ˜plan" to loose a bad gene and gain a better conformational or performance characteristic. We regularly re-examined which traits we wanted to retain and which traits we wanted to add in a single breeding. I learned so much about ˜how a trait was inherited and found that simple gene traits were easier to play with than others that were inherited as influenced by multiple genes (polygenetic). Genetic diseases that cause pain, are untreatable or cause death must have a high priority.

A goal mandatory to responsible breeders is to decrease the incidence of affected puppies that are born.  Puppies that are affected with diseases or breed faults with genetic influence must be seen as absolutes.  A club I hold membership in has been reviewing their ˜Breeders Code of Ethics which currently states Stud dogs or brood bitches must be certified radiographically clear of hip and elbows dysphasia ¦ Stud dogs and brood bitches must be examined within twelve months prior to breeding and declared free of eye diseases currently  recognized as having a genetic basis by a veterinary pathologist AND, breeders will not knowingly breed a dog or bitch that has any hereditary disease or is a proven carrier of any hereditary disease.

This was the ˜mission statement for this club well before credible testing for serious disease in our breed became available.  We know that the joint diseases are influenced by more than one simple gene as well as influenced by environmental factors. Orthopedic Foundation for Animals (OFA), directs breeders to obtain joint health information on as many siblings and other related dogs as possible and NOT just the individual being certified before breeding. Not obtaining and considering the joint soundness of littermates and even previous offspring is the slowest method of reducing the incidence of an undesirable trait.

The use of preliminary x-rays (taken at 4-12 months of age), can be valuable information on the hip status of dogs chosen for breeding programs. If the dog show dyslectic changes on preliminary radiographs, placement in a pet home earlier in his life will not only provide valuable information for the breeding program but also spare time and expense in carrying that animal to two years of age.

In fact, a study done recently by O.F.A.s  Dr. Corley, showed the reliability of preliminary  x-rays : All preliminary evaluations grading ˜excellent were certified at two years of age with 100% accuracy. There was 97.9% reliability for prelims grading ˜good to certify but only 76.9% of prelims grading ˜fair achieving permanent certification. The veterinary ophthalmologists ACVO (American College of Ophthalmology), sheet provided to owners after an eye exam clearly states if a noted condition is either known to be inherited or suspected to be inherited?

Regarding eye disease, our breed has for generations been primarily concerned with Retinal Dysphasia, Inherited Cataracts and Progressive Retinal Atrophy with the first two seen on A.C.V.O. exams fairly early in the dogs life. Each eye disease leads to sight failure or eventual blindness. Well before breeders began obtaining elbow, CERF and cardiac clearances, the labrador retriever breed had been concerned primarily with hip dysphasia and Progressive Retinal Atrophy. The show catalogs and old Retriever International Magazines I have from the 1970s mention in the breeders ads for individual dogs OFA hips and PRA clear?.

In the 1980s, a stunning English import was used widely in the United States before going home. He improved many breed features and produced strong for type, head and coat. Sometime later, he was also found to produce P.R.A. The issue of who was a carrier in pedigrees opened up like a can of worms. Breeders were caught off-guard with reports of the occasional puppy diagnosed with P.R.A.  Rumors were spread through gossip like wild fire, affecting breeding programs often with nothing more than guessing as the source.

In fact, the first PRA case seen in dogs was in 1906 in a Gordon Setter imported from England into Sweden, therefore the disease is known to have originated in England. Nothing more was heard about the disease until the 1930s and 1940s when it was called Progressive Retinal Atrophy. In the 1950s, P.R.A. was seen in many breeds and the first case in the United States was in labradors in 1952. This dog became totally blind at 3 years of age. In the time between the onset of the disease, blindness and eventual euthanasia two years later, the dog was widely used at stud.

The annual general meeting of The Labrador Retriever Club, England in 1991, included a full report on P.R.A.   Dr. Keith Barnett of the Animal Health Trust reported that there were a number of cases seen in labradors in The United States but they never fully investigated nor written up.  In the United States, Mrs. Georgia Gooch began publishing pedigrees of affected Labradors through P.R.A. DATA, INC. in 1991.   Those pedigrees were submitted voluntarily by breeders or owners and unfortunately, only a fraction of dogs were represented.

Breeders could only look at the pedigree and guess where it was coming from. The research of Dr.Med.Vet .Isabella Kraft in Germany led her to publish pedigrees of affected labradors in 1992. A letter is published therein from an owner who found her labrador to be affected -  Dear Dr. Kraft, enclosed you will find the pedigree of one of my dogs whom I had put down on 16th of August totally blind by P.R.A. This dog had his breed championship, a C.D. in obedience, and was up to restricted level in retrieving trials and, was very good. He had a perfect hip score and was a very faithful friend and companion to me. The eye examiner said he was already half blind when tested at age 4 years and 10 months.

I first actually noticed it 4 weeks prior at a retrieving trial. He was a brilliant dog at single marked retrieves, only needing a  glimpse of the bird, yet suddenly began missing light birds against light background. He was a very headstrong dog of the ˜I don't need any help, Ill find it type, but he started listening and stopping for a few commands.  I miss him terribly. According to a survey of eleven veterinary colleges in the United States in the early 1990s, labrador retrievers have an excess risk of developing the disease.

Over many, many years breeders with the goal of eliminating the fear of PRA from their breeding programs could only rely on serious pedigree research with the absolute need to trust those the information came from. We can now utilize the Optigen prcd-PRA test to identify carriers.  PRA  CAN BE AVOIDED IN FUTURE GENERATIONS BY TESTING DOGS BEFORE BREEDING. PRA is inherited as a recessive trait and not sex linked. The disease gene must be inherited from each parent in order to cause disease in an offspring. Breeding NORMAL to NORMAL = 100% of the offspring will be NORMAL.

Breeding a NORMAL dog to a CARRIER of the disease gene = 50% of the puppies will be CARRIERS and 50% will be NORMAL. Breeding CARRIER to CARRIER = 25% of the puppies will be AFFECTED with the disease, 50% will be CARRIERS and 25% will be NORMAL.   Individual breeders can test to identify carriers, work to breed away from the disease gene and limit the disease gene being introduced in future breedings. It is a mistake to believe that selection against carriers is unnecessary as long as affected dogs are not being produced.

By NOT selecting against carriers in breeding animals, it is almost guaranteed that HALF THE QUALITY DOGS IN YOUR NEXT GENERATION WILL BE CARRIERS for a superior quality breeding animal is determined to be a carrier, he or she can be bred to an outstanding normal dog. When the litter is evaluated for structural balance and type, Optigen testing the offspring who display the desirable traits and are selected for breeding programs should be done.  Replace the carrier with outstanding offspring for future breeding stock.

As more and more breeders choose to work away from the defective gene, the problem for the breed diminishes.  The genes of the ˜retired dog can be preserved through the selected offspring and the carrier risk cut in half. True selective breeding is one that does not continue to multiply carriers of disease genes in a breeding program. It should work to decrease the percentage of carriers and toward producing outstanding, genetically normal dogs.

**REFERENCES**

CORLEY,EA, et al. Reliability of Early Radiographic Evaluation for Canine Hip Dysphasia Obtained from the Standard Ventrodorsal Radiographic Projection. JAVMA. Vol 211, No.9, November 1997 INHERITED EYE DISEASES IN DOGS ; Chapter 77, Labrador Retrievers: pages 182-192

BARNETT K.C. : Summary of Dr.S Barnetts report on PRA to the annual general meeting of The Labrador Retriever Club, England. The Labrador Retriever Club Yearbook, 1991.

PADGETT G.A. : Genetics I Introduction. Veterinary Corner. AKC CANINE HEALTH FOUNDATION: 1999 National Parent Club Canine Health Conference, Jerold S. Bell, DVM,Tufts PlaceType University Place.