

Popular-Sire Syndrome: Keeping watch over health and quality issues in purebreds

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[Every effort has been made to ensure accuracy of information. However, this is not a substitute for prompt veterinary care. This article originally appeared in the "Healthy Dog" section of the August, 2004 AKC Gazette. Published with permission online at Sealyhealthguard.org, 11/23/11]

An important issue in dog breeding is the popular-sire syndrome. This occurs when a stud dog is used extensively for breeding, spreading his genes quickly throughout the gene pool. There are two problems caused by the popular-sire syndrome. One is that any detrimental genes which the sire carries will significantly increase in frequency – possibly establishing new breed-related genetic disorders. Second, as there are only a certain number of bitches bred each year, overuse of a popular sire excludes the use of other quality males, thus narrowing the diversity of the gene pool.

The popular-sire syndrome is not limited to breeds with small populations. Some of the most populous breeds have had problems with this syndrome. Compounding this, there are several instances where a popular sire is replaced with a son, and even later a grandson. This creates a genetic bottleneck in the breeding population, narrowing the variety of genes available.

Every breed has its prominent dogs in the genetic background of the breed. But most of these dogs become influential based on several significant offspring that spread different combinations of the dog's genes over several generations. The desirable and undesirable characteristics of the dog were passed on, expressed, evaluated by breeders, and determined if they were worthy of continuing in future generations.

The Challenges

The problem with the popular-sire syndrome is that the dog's genes are spread widely and quickly - without evaluation of the long-term effects of his genetic contribution. By the time the dog's genetic attributes can be evaluated through offspring and grand-offspring, his genes have already been distributed widely, and his effect on the gene pool may not be easily changed.

In almost all instances, popular sires are show dogs. They obviously have phenotypic qualities that are desirable, and as everyone sees these winning dogs, they are considered desirable mates for breeding. What breeders and especially stud-dog owners must consider is the effect of their mating selection on the gene pool. At what point does the cumulative genetic contribution of a stud dog outweigh its positive attributes? A popular sire may only produce a small proportion of the total number of litters registered. However, if the litters are all out of top-quality, winning bitches, then his influence and the loss of influence of other quality males may have a significant narrowing effect on the gene pool.

In some European countries, dog-breeding legislation is being considered that limits the lifetime number of litters a dog can sire or produce. If, however, certain matings produce only pet-quality dogs, but no quality breeding prospects, should the dog be restricted from siring a litter from a different line? The popular sire's effect on the gene pool is on the number of offspring that are used for breeding in the next generation, and how extensively they are being used. This cannot be legislated.

At what point does a stud-dog owner determine that their dog has been bred enough? It can be difficult to deny stud service when asked, but the genetic effect of a dog on the whole breed must be considered. If everyone is breeding to a certain stud dog, the intelligent decision may be to wait and see what is produced from these matings. If you still desire what the stud dog produces, it is possible that you can find an offspring who has those positive attributes, and also a genetic contribution from its dam that you may find desirable. If a popular stud dog deserves to make a significant genetic contribution to the breed, doing so through multiple offspring, and therefore getting a mixed compliment of his genes, is better than focusing on a single offspring.

Wait-and-See Approach

All breeding dogs should be health tested for the conditions seen in the breed. If your breed has enrolled in the AKC Canine Health Foundation/Orthopedic Foundation for Animals CHIC program (www.caninehealthinfo.org), prospective breeding dogs and bitches should complete the recommended breed specific health testing prior to breeding. These may include hip radiographs, CERF eye examinations, or specific genetic tests.

It is important to monitor the positive and negative characteristics being produced by popular sires. While it is satisfying to own a popular stud dog, a true measure of a breeder's dedication is how negative health information in the offspring is made available. All dogs carry some undesirable traits. Based on the variety of pedigree background of bitches who are usually brought to popular sires, there is a greater chance that some undesirable traits could be expressed in the offspring. It is up to the stud-dog owner to keep in touch with bitch owners, and check on the characteristics that are being produced.

Some breeders will argue that the strength of a breed is in its bitches, but the fact remains that the stud dogs potentially have the greatest cumulative influence on the gene pool. There will always be popular sires, and that is not necessarily bad for a breed. But a dog's influence on a breed should be gradual, and based on proven production and health testing. Maintaining surveillance of health and quality issues in breeding dogs and their offspring, and preserving the genetic diversity of the gene pool, should allow a sound future for purebred dogs.

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