

Basic Concepts for Breeding Dogs

Learn these basic concepts and start your breeding program on the right foot.

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Key Terms

Balance, soundness, proportion, and type are the cornerstones of successful breeding.

Balance refers to structural symmetry allowing all parts to work in harmony. This perfect fit results from soundness and proportion. These qualities are inseparable, but not synonymous. Poorly proportioned dogs can be sound, and sound dogs can be badly proportioned.

Soundness signifies optimum mental and physical fitness to accomplish the breed's intended function.

Proportion is also determined by function, evaluated by comparing the breed's ideal length-to-height ratio.

Type comprises all distinguishing traits like color, coat, eye shape, and temperament (etc). that define a breed to an average, rather than extreme degree.

In the Genes

Most traits are transmitted via polygenic combinations; groups of interacting genes. Many polygenic traits, like size, display continuous variation, distinct divisions do not occur and most individuals possess the trait to an average degree.

Others are expressed as threshold traits, precise combinations of genes producing a limited range of clearly defined variations for that trait.

Other traits are controlled by one gene pair. These can be homozygous if both genes are dominant or recessive for that trait; heterozygous, if a dominant gene is paired with a recessive gene, causing the recessive gene to be hidden.

Breeders rely primarily on physical evaluation and pedigree research for a balanced assessment of phenotype (physical appearance) and genotype (genetic makeup) which is never completely revealed by physical appearance.

The Fine Line

Resulting information can be utilized in three ways to enhance desirable traits and minimize undesirable variations.

1. Inbreeding, brother/sister or parent/offspring mating, is the most intensive approach. It quickly and efficiently stabilizes desirable traits and reveals hidden recessives.
2. Linebreeding, mating less closely related family members, achieves similar results in slower stages.
3. Outcrossing, mating unrelated individuals, introduces hybrid vigor, by breaking up homozygous gene pairs. This temporarily masks undesirable traits and increases unpredictability.

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