

**Wildrose Kennel
Training Newsletter
Mike Stewart
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Dr. Fred Madsen is a professional animal nutritionist who worked many years for a major dog food company. Dr. Madsen is a good friend and frequent visitor to Wildrose. He offered to share his insights into dog nutrition with our readership.

Choosing the Right Diet for Your Labrador Retriever

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Nutrition is important for the vitality of your dog. Dog foods today are far better than they were five years ago and will continue to improve during the next decade. Less than ten years ago most commercial dog rations were designed to meet minimum requirements and most of the manufacturing emphasis was placed on physical forms of the food and palatability (how it tasted). Today, the better rations are designed to improve health, performance, delay diseases of aging, aid dogs with degenerative conditions such as arthritis and hip dysplasia and improve recovery after exercise. This is an exciting time to have an athletic dog. How should one decide on a diet?

What is important to consider?

There are many excellent rations on the market today. However, there are subtle and sometimes large differences in formulations, and we need to know how to select the best product for our dogs. We want the selected diet to grow the animal at the proper rate. Moderate growth rate is important for the future health of a Labrador Retriever. Restricted growth rates have demonstrated benefits for all domestic animals tested. Generally these animals are more productive and have better reproductive lives. We want a diet that allows an animal to repair itself with the greatest efficiency after giving birth and strenuous exercise. There are large differences between diets in this regard. Lastly, we want a diet that provides biochemical support after the animal has passed its most productive years.

It is difficult to determine the true value of a ration by the nutrient analysis. This is by design as it is important for pet food manufacturers to protect their formulations from curious competitors. This makes it difficult for all of us to truly compare rations by simply analyzing their tags. There are some easy ways I use to make a decision, however.

There are ingredients that may indicate the quality and state-of-the-art of the product (Table I). Table I contains some general information to help you determine if a ration is of the highest quality or just "average." It is of utmost importance, however, that one observe their dogs after starting them on the new diet. For instance, do they have a shiny, healthy coat, are stools well formed and not too large, do they have bowel movements on a regular basis and are they calm and free of vices?

It is critical to follow feeding instructions by the manufacturer. This is particularly important for Labs as they are considered nutritionally a large breed, big eaters, and are susceptible to hip dysplasia. Diets designed for moderate growth rate of Lab pups are also an important aspect of skeletal health and overall longevity.

Probably the most important stage of life, and the most overlooked, is gestation. Biological variation starts with the genetic base of the breeding farm and how the parents are fed and cared for. Pregnant bitches and their products of conception are sensitive to their diets and environment, and these sensitivities can result in a host of biochemical and phenotypic changes in the offspring that can produce large differences or consequences later in life.

Table I. WHAT TO CONSIDER IN A RATION

Factor	Nutrients and Ingredients of Label
• big eaters	Level of fat (should be low) in puppy food. Diet should be designed for large breeds. The exception would be during hunting season. Higher fat diets are appropriate during strenuous activity. Fatty acid ratio is important.*
• athletes	Chelated minerals offer improved recovery from exercise. The term on label is proteinates. Balanced fatty acids. Fatty acid ratio should be 5-10:1 Omega 6:Omega 3. Some manufacturers include flax meal or flax seed. Extra fat.
• hip dysplasia and aging	Easily digested food (avoid meat and bone meal on label). Correct Omega 6:Omega 3 fatty acid ratios. Chelated minerals (proteinates) aid bone and joint development. Glucosamine and chondroitin sulfate help maintain cartilage. Fiber packages.
• gestation-lactation	Essential fatty acid balance, proteinates, no meat and bone meal.

*Fat quality is important. State-of-the-art diets maintain a favorable Omega 6:Omega 3 ratio of 5-10:1. All fats are not equal.

Nutrition plays a critical role in defining the intrauterine environment, implantation and organogenesis, which all influence phenotype in the offspring. Clearly, individual pups formed with less than normal organ architecture and size (i.e., runts) are doomed to developing problems later in life. Small, seemingly insignificant changes in organ structure or function during the fetus' stay in the uterus can result in relatively large phenotypic effects after the animal is born and matures. Many of the changes that occur early in the fetus' environment are permanent and may extend for several generations.

Research in several species suggest that up to 30% of offspring variation (i.e., biochemical, structural and functional) is attributable to diet and environment during gestation. This non-genetic heredity (meaning it is an extra-genetic effect) which manifests itself during early life and into maturity is known collectively as the "womb effect" and may contribute as much to variation of phenotype as additive genetic effects (i.e., heritability). An understanding of "womb effect" adds additional importance to where one obtains their puppies. When it comes to gestation and lactation diets, expense should be a secondary consideration. The diet of the sire should also be of the highest quality for some of the same reasons as those of the dam.

Evaluating Modern Dog Food Formulas

Nutrient requirements for dogs have been determined by statistical methods. That is, nutrition scientists use populations (large numbers of animals versus individuals) not individuals to determine the average nutrient requirements. The National Research Council (NRC) is aware of this and generally adds "safety" quantities to the nutrient requirements. Even with these safety levels, some dogs probably have nutrient needs that are not covered by these "minimum levels."

The best bet in obtaining the most accurate nutrition is to use diets designed and researched for certain stages of the life cycle and breed and follow the manufacturer's guidelines. However, our dogs are individuals and need to be cared for as individuals when it comes to diet. One needs to observe how their dog responds to the diet they have chosen. Most of the time the diets will do as they are intended; however, some dogs will not fit the mold.

Our daughter's Lab/English pointer mix puppy, Tucker, was put on what we considered a state-of-the-art diet when he was about six weeks old. Tucker, for some reason did not digest this diet well (he had poorly formed stools), and we were forced into looking for another diet that contained the desired nutrition. The next diet was not designed for large

breed puppies-it had more fat, calcium and phosphorus-but it did resolve the digestive problems. The major difference was that we had to restrict the new diet so that he did not gain too fast.

Pick the best diets available (they are generally more expensive) for your dog's stage of life and see how he or she performs. Generally, the expensive diets turn out to be the cheapest. Often it only takes about half the volume of the better diets to maintain your dog, compared to the more economical formulas. The price per day is nearly the same and you get added benefits with the more expensive diet.

Summary

Nutrition is extremely important to aid your Lab in living a healthy and active life. There are foods on the market today that are specifically designed for dogs such as Labs, and consideration of these diets is suggested. Less emphasis on diet cost and more on performance will probably result in a longer and more productive life for your Lab.

More attention should be given to how bitches and sires are fed and cared for. Research in several species suggests that up to 30% of offspring variation (i.e., biochemical, structural and functional) is attributable to diet and environment during gestation. This non-genetic heredity which manifests itself during early life and into maturity is known collectively as the "womb-effect." In all likelihood, runts and some undesirable phenotypic characteristics are the result of undue stress and poor diet during gestation. This gives new meaning and importance to where you purchase your puppy.

Nutrient requirements are statistical and even with safety factors added, many Labs do not get all the nutrition they need. Our Labs are individuals and need to be fed and cared for as individuals to optimize their performance and lives.

Modern dog rations are difficult to analyze by protein, fat and fiber tag guarantees. One has to study the ingredients and how the manufacturer developed their diets. Pet manufacturers' web sites are good places to visit.