Does Diet Affect Field Trial Performance

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For decades, professional and amateur retriever trainers have depended on optimal nutrition to complete the triad of genetics and training for success in retriever field trials. Common sense has dictated the value of good nutrition in support of canine athletes and has become one of the standard tools we all use in conditioning the all-age competitor. Modern training of the field trial retriever has evolved to allow true Olympic-class athleticism in the successful dog. This attainment of performance, coupled with the increased number of competitive animals, has caused trainers and owners to look at every nuance of conditioning to maximize execution in these dogs. Nutrition is one example of these fine points.

But, the question has always lingered: Does diet really affect a dog's performance in the field? New research may give us insight into the positive role of diet in the field trial retriever.1 While the research was conducted using upland pointing dogs, the connection with field trial retrievers can be made. Both activities require stamina, cognitive function, and use of the same senses.

In this field study, 23 trained English Pointers were randomly assigned to be fed either of two commercial dog foods. The dogs were selected "blindly" (i.e. the assignment to the food was done without knowledge of the dog's quality as a bird dog.) Over an entire season (November through February), data were collected on the dogs to determine the effects, if any, that high-quality nutrition had on hunting performance.

The two diets were a well-known "performance" food a and a widely accepted product used for sporting dogs. The foods arrived at the plantation in plain brown bags marked only with a blue sticker or a yellow sticker and the handlers of the dogs were unaware of the identity of the diets.

The dogs were subjected to a normal hunting routine as used on this plantation. Each dog was trained and conditioned for 2 months prior to opening day which, in Georgia, occurs in mid-November. During each half-day bird hunt, a total of 8 dogs were typically used (4 braces) and the selection of the dogs and their hunting time was at the discretion of the handlers. The handlers kept records of total time hunted, number of finds, number of flushes, general attitude of the dog, and reason for stopping the hunt and/or changing dogs (fatigue, lack of interest, or injury).
During the study, all dogs remained healthy and consumed typical amounts of food throughout the entire season. No differences in the amount of food consumed were observed.

The differences in hunting performance were remarkable. Dogs fed the performance diet did maintain their body weight and overall condition better than the dogs on the standard diet
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Dogs fed the performance food also demonstrated superior hunting ability, compared with the dogs fed the maintenance food. Dogs fed the performance food found an average of 7.5 coveys/singles per hunt, compared with 4.5 coveys/singles per hunt for the dogs on the standard dog food. Data for finds/hour documented that the performance diet again resulted in better hunting succuss. Finds/hour with the performance food was 2.49 on average, versus 1.55 for the dogs on the maintenance food.

In addition, this study documented that dogs fed the higher fat levels performed better even on hot and humid days! Quail season in south Georgia can be warm and, during this study, 9 days had high or severe heat stress. Regardless, the dogs fed the high-fat performance food still out-performed the dogs on the standard dog food, documenting the value of fat as the primary energy source for performance dogs, regardless of adverse weather conditions.
Performance foods are typically high in fat, which provides more energy for Pointers and other athletic dogs. A good performance food should have 20% fat as part of the nutritional composition. Fat has 2.5 times the calories of carbohydrate (grain), so a high-fat diet can offer more energy in a smaller amount of food.

As shown in this study, improved nutrition can actually result in better hunting performance. This could be due to higher-quality ingredients, the higher fat level, improved digestibility, or other nutritional factors. Regardless, we all know that if a dog swings around a grain field and makes a 100-yard cast, it will find x amount of birds. If the dog makes a 150-yard cast, it will find x+y number of birds. Stamina and energy become the key factors. In this study, higher-quality nutrition resulted in finding more birds, an accomplishment we all appreciate regardless of breed or sport.

So, how does this research pertain to the field trial retriever? Optimal nutrition has common consequences in all canine athletes. From sled dogs to racing Greyhounds to field trial retrievers, dogs can benefit from nutritional research. One example is research on the value of protein2. Dogs in intense training were fed foods with protein levels varying from 16% to 40%. Dogs fed the lower-protein foods (16% and 24%) had injuries during training and all of the dogs on the 16%-protein food were removed from training due to injuries. Dogs fed 32% and 40% protein had no injuries during the training process. An important goal of canine nutritionists is to provide the performance dog with a food that supplies sufficient calories from other sources to allow minimal protein usage for caloric needs. This spares the protein for tissue repair, hormone production, and the other crucial functions of protein.
The best source of these calories is fat. Either carbohydrates or fat usually provides most of the energy in dog food. It has been known for many years that high-carbohydrate foods can cause stiff gait in endurance dogs.3 Further research documented the value of fat as an energy source.2 The VO2 Max* of highly conditioned dogs was recorded. Subsequently, the VO2 Max of ordinary dogs on low-fat diets was compared to their VO2 Max on high-fat diets. The levels of VO2 Max for the ordinary dogs placed on a high-fat diet equalled that of the highly conditioned dogs. These findings suggest that diet may play a critical role in endurance, and specifically that feeding high levels of dietary fat may increase VO2 Max and the maximal rate of fat use for energy. For the field trial retriever and other field dogs, this could result in better endurance and greater performance in competitive events.

Not only does the level of fat effect performance, but the source of the fat is also important. Fat is composed of different types of fatty acids which are characterized by their chemical structure. Terms like omega-6 and omega-3 are used by chemists and nutritionists to identify two important types of fatty acids. During inflammatory processes, these fatty acids produce "eicosanoids" [eye-ko-san-oid]. The eicosanoids from omega-6 and omega-3 fatty acids result in markedly different levels of inflammatory response in body tissues. For example, the eicosanoids produced from omega-6 fatty acids can be more inflammatory and immunosuppressive than those produced by omega-3 fatty acids. Research conducted by Iams Company scientists has documented the value of a specific range of ratios of these fatty acids in the diet.4 For optimal conditions, a ratio of between 5:1 and 10:1 (omega-6 to omega-3 fatty acids) is recommended.

Field trial retrievers represent one of the most competitive and highly conditioned groups of dogs known. Modern training methods have allowed dogs to continue impressive feats during field trials and to persist in pushing the performance envelope. The dogs running today are not the same as those who ran in the fifties and sixties. Modern all-age field trials allow dogs to perform retrieves only dreamed of twenty years ago. The nutritional needs of these dogs have likewise escalated and owners, breeders, and trainers can utilize modern, researched diets to enhance their charges' performance in field trials.

a. Eukanuba Premium Performance®

*VO2 Max is a measure of the dog's ability to utilize oxygen; it can be interpreted as a measure of energy use.

1. Davenport G, Kelley, R, Altom, E, & Lepine, A; Effect of diet on hunting performance of english pointers, Veterinary Therapeutics Vol 2, No. 1, Winter 20012. Reynolds AJ; Effect of diet on performance, Perf Dog Nutr Sym; Colorado State Univ, 1995
3. Krondfeld DS. Diet and performance in racing sled dogs. J AVMA, 1973.
4. Reinhart GA. Fat for the performance dog. Perf Dog Nutri Symp Colorado State Univ, 1995.

Editor's Note: After 30 years in private veterinary practice, Dr. Coffman is now the Manager of Technical Communications for The Iams Company's Research and Development Division in Lewisburg OH with primary responsibility in the various sporting dog breeds. An experienced hunter, he has owned Pointers, Setters, Chesapeake Bay Retrievers, and coonhounds. Currently, he is active in Beagle field trials nationally.

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