FEEDING THE HIGH PERFORMANCE BIRD DOG

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Modern bird dogs are the product of improved breeding, more sound training methods, and better health care. This triad has combined to produce athletic dogs similar to human Olympic athletes. These performance-bred and-trained animals require specialized nutrition to allow them the best chance to exhibit their skills at maximum levels. Winning big field events in the modern era or just a hard week of hunting requires that no stone be unturned in our quest for success. Updated nutrition is no exception. From fat levels to protein, carbohydrates, and fiber, new science helps owners and trainers feed their dogs in a more efficient manner which leads to better performance.

Energy is the key

The primary nutritional need of hard hunting bird dogs is for energy, which translates to calories. Tired dogs cannot perform to the best of their ability. The objective of any conscientious owner or trainer is to provide a dog food that will give the maximum energy in a wholesome, nutritious manner.

The best way to provide this is with a high-fat product. Fat is the ideal source of energy for the bird dog because it has over twice the calories of carbohydrates or protein per gram. A dog can eat a small amount of high-fat food and get a lot of calories. These calories are crucial to the dog's performance. Dogs under the stress of travel, cold, dampness, and competition often fail to eat a normal or even adequate amount of food. One would think that a hard-working dog would be very hungry and gulp down large quantities of food. Experienced trainers know this is often not the case, and some dogs seem to eat reluctantly while on a handler's truck or on a bird hunting trip out of state. Call it "stress" or "nerves" but dogs like the comforts of their own kennel. They eat better at home. This has led trainers to prefer a "nutrient-dense" dog food, i.e., one that has a lot of nutrition in a small amount of food. This can only be achieved with a high-fat, performance- type food. A 20% fat level is a sound recommendation for the heavily worked bird dog. A lower amount of fat, say 10%, requires the dog to eat almost 20% more food than with the 20% fat diet to keep in the same condition. With many canine athletes, it is difficult to challenge the dog to eat that much extra food throughout hunting season.

Why is fat better than carbohydrates?

It is common among human athletes to use *carbohydrate loading* as a means of insuring energy during an event. Eating a lot of pasta the night before

a marathon run is a classic example. But with dogs, using carbohydrates, such as starches and grains as a primary energy source for performance does not work so easily. For one thing, the dog has to eat about twice as much food if we try to use grain as the energy source because, again, fat has over twice as many calories per bite as carbohydrates. Secondly, research conducted years ago documented that many dogs using high-carbohydrate foods for energy developed excess lactic acid in their muscles, and some even had stiffened gaits as a result.[1]

Additional research conducted by the Iams Company recognized that dogs on high-fat diets were better able to burn oxygen, even without extra conditioning. When highly conditioned dogs were fed a normal-fat food and sedentary dogs were fed a high-fat food, the dogs fed the high-fat food were better able to utilize oxygen and had more energy to burn. When the sedentary dogs were conditioned as well as fed the high-fat food, their energy burning ability went up even more.[2]

Why is this true? It all comes down to a microscopic fuel-burning "furnace" in the muscle cell called a *mitochondrion*. This tiny part of the cell uses a complex chemical process called the Kreb's Cycle to provide energy to the bird dog's muscles.

In the above research, the sedentary dogs on the high-fat diet had a higher percentage of these little mitochondria in their muscles. This allowed the dogs to burn more oxygen and have more energy.

If a trainer combines the advantages of high-fat food with proven conditioning techniques like roading, the dog can perform to the maximum.

Type of Fat is Important Too

While the level of fat in a performance dog food is important, the source of this fat is significant too. Fat not only provides energy but it also is the source of important fatty acids. Fatty acids make up cell walls, provide nourishment to the skin, and are important in the immune system.

Different fat types provide different levels of the various fatty acids used by the dog. The omega-6 and omega-3 fatty acids have received the most attention by researchers because they have different inflammatory properties in the dog's tissues (Omega is just a method chemists use to name compounds. It has to do with the structure of the molecule). Generally, omega-6 fatty acids are more inflammatory than omega-3's. Fatty acids produce substances called *eicosanoids* (eye-ko-san-oids). These eicosanoids play an important part in injury repair and inflammation. As a result, dogs that have an inflammatory response going on, a red, irritated skin for example, will have high levels of

omega-6 eicosanoids in the affected tissues. This can also be true following muscle pulls, joint ailments, and lacerations.

Examples of fat sources that are high in omega-6 fatty acids are soybean oil, corn oil, sunflower oil, and safflower oil. Good sources of omega-3 fatty acids are cold-water fish oils, flaxseed oil, and canola oil. On first examination, one might think that since omega-6 fatty acids are *more* inflammatory, we should exclude them from the diet. But inflammation in moderation is an important part of the dog's immune system and some omega-6 fatty acids are essential for good health and a normal response to injury.

Since omega-3 fatty acid eicosanoids counteract the inflammatory actions of the omega-6 fatty acid eicosanoids to a degree, scientists have found that the key is to have an adjusted *ratio* of each fatty acid type in the dog's food. Research completed by Iams Company scientists has documented that for dogs, the ideal ratio of these two fatty acid types is between 5:1 and 10:1 omega-6 to omega-3. To achieve this adjusted level, manufacturing tolerances must be strict, as the levels of the various fat types become crucial. Foods that provide an adjusted ratio will have a guaranteed analysis of the fatty acids on the label documenting the ratio.

Some trainers have tried just buying some fish oil capsules for administration to the dog, but this is not a practical method of providing the ideal fatty acid ratio for several reasons. First, it is difficult to give a pill every day to every dog in a typical bird dog kennel. Second, it is difficult if not impossible to get the total dietary fatty acid ratio of between 5:1 and 10:1 using capsules. Third, supplying additional Vitamin E in the diet is necessary with omega-3 supplementation. Vitamin E levels are already enhanced in dog foods with corrected omega-6: omega-3 ratios. And, fourth, omega-3 supplements are expensive.

A better approach in the bird dog kennel is to select a food that has the corrected omega-6: omega-3 ratio guaranteed on the label.

So, Are Carbohydrates Bad?

There is nothing wrong with grain in a dog food. But, each grain has a "glycemic index" which lists the particular carbohydrate source's ability to raise blood sugar. For example, a diet with rice can stimulate a rapid rise in blood sugar while a diet containing wheat will cause a lower blood sugar level. In the optimal diet for hunting dogs, rice is an excellent carbohydrate source for this reason. The rapid rise in blood sugar can provide quick energy before the dog begins burning fat for stamina and endurance energy. Corn and sorghum (milo) offer slower rising but more level blood sugar levels.

Fiber Isn't Filler

One of the most common misconceptions about feeding all-age bird dogs (or any dog) is that the fiber is either "just filler" or not important in the make-up of the food. However, fiber is very active in a dog's intestine and plays a critical role in maintaining intestinal health. Like fat, the source of the fiber used in the food is very important. Fiber ferments in the intestine and some types of fiber provide too much fermentation which can lead to excess gas, while others provide too little fermentation, which can cause constipation and does a poor job of "feeding" the millions of cells that line the intestine and colon.

Years ago, when I was in private veterinary practice, it was common to give bird dogs intestinal drugs to calm their bowels and help slow down the loose stool that often occurred just after the breakaway. Now we know that we could have managed that situation more appropriately with a nutritional solution. The ideal fiber source and solution to helping maintain a healthy intestinal tract is one that is *moderately fermentable*. If the fiber ferments just enough, it produces the right amount chemicals called "short-chain fatty acids" (These are not the same ones as the omega-6 and omega-3 mentioned earlier). These short-chain fatty acids (SCFA's) supply about 70% of the nutrients (energy) used by the intestinal cells and helps insure a healthy gut. The level of fiber in the food needs to be between 4% and 7%, and it needs to come from a moderately fermentable source like beet pulp. This fermentation level along with the fiber bulk will help insure a quick, clean bowel movement so the dog can spend a minimum time with this task and get back to finding birds.

But, What About the Protein?

Protein normally gets all the conversation and, to a degree, this recognition is justified. There is substantial evidence that athletes require increased protein. For example, in human athletes, the volume of blood plasma and red blood cells increases with training, suggesting an increased need for protein. Muscle size, density of blood vessels within muscle, and activity of enzymes, which are made from amino acids, the building blocks of protein, all increase with athletic training.

In one research project completed by Iams scientists, racing sled dogs were fed diets of 16, 24, 32, and 40% protein. None of the dogs on the 16% protein food made it though the training season without at least one injury serious enough to remove them from training. Dogs fed the 32% and 40% protein foods had no injuries.[2] Having increased levels of protein in the diet makes sense for the competitive bird dog because these dogs are utilizing more protein to make and maintain muscle and body fluids, and for other functions of this nutrient class. Also, there is a small, but significant destruction of muscle tissue during training. This destruction of tissue protein increases the dog's dietary need.

Soybeans and corn gluten have been used for decades as a protein source in dog food because of their lower cost. The protein in plants can be quite digestible but high-quality animal source proteins provide superior amino acid balances when compared to vegetable based proteins like soybeans. Animal-based protein can also vary in quality and characteristics like digestibility and amino acid availability. But, in my experience appear to be more beneficial for hunting dogs. Protein quality cannot be conveyed though information presented on a dog food label.

Most nutritionists agree that although bird dogs can survive on plant-based protein like soybeans and corn gluten, they thrive on animal-based sources like chicken.

What About Water?

Water is even more important to the big-running bird dog than most owners or trainers think, because much more water is lost during a long run than is commonly thought. In a study done by Iams Company scientists in the early 90's during the Copper Basin Sled Dog Race, sled dogs required about 2 ounces of water per pound of bodyweight per day. Of course, the sled dogs were working all day covering about 4.3 miles per hour! From these figures, an estimate of one quart of water being lost by a bird dog during a three-hour stake seems accurate. The temperature in the Copper Basin was well below zero, suggesting that dogs need water on a cold day just as much as they do on hot days. Water loss comes from breathing, urinating, and salivating, and even some water is lost in the stool each day. This water loss, coupled with heat from exertion, can be stressful on the athletic bird dog. The temperature of racing Greyhounds after a race can be as high as 106 degrees Fahrenheit with no apparent disturbance in their health or attitude. I have checked my own dogs' rectal temperature after an afternoon of hunting and, even on cool days, a temperature of 104 degrees Farienhiet (F) is common. The key is that this temp should decrease to normal levels of 101 degrees F. to 102 degrees F. within 15 minutes. Of course, you can lead a dog to water, but can you make him drink? The best solution is to have clean, fresh water available at all times and to offer small amounts soon after completion of the run. Some dogs may benefit from "baited" water, i.e., a little Jello® or dog food mixed in for flavoring to encourage drinking.

So, What Am I Supposed to Feed?

Here is a good set of recommendations:

CHARACTERISTICS OF A GOOD FEEDING PROGRAM FOR A HUNTING OR FIELD TRIAL KENNEL

- A nutrient-dense diet that allows enough energy in a small quantity of food
- Animal-based protein source
- A high-fat, high-energy food
- A fiber source that promotes intestinal health
- Excellent taste
- Convenient to purchase and easy to prepare
- Stable and safe on the road while traveling from trial to trial

Everyone Wants Results

When bird dogs are fed a modern, complete high-fat performance food, good results can be expected. During the 1999-2000 quail season, a study was conducted by Iams Company scientists at a quail plantation in southwest Georgia.

Twenty-three trained English Pointers were randomly divided into two groups, without regard for hunting ability, and fed either of two well-known commercially available dog foods: a high-fat performance food* or the food the plantation had been using during previous seasons. The foods were supplied in brown bags with no identification labels, and the handlers were not aware of which dogs were eating which food.

The dogs fed the performance food had 55% more finds over the season than the dogs fed the standard food. When adjusted for time hunted, this amounted to the dogs fed the performance food having about one find per hour more than the dogs fed the traditional product.

The study also documented that dogs fed the performance type food maintained or gained body weight and condition throughout the hunting season, while dogs fed the standard food lost body weight and condition. The results of this study imply that diet can affect the overall performance of hunting dogs.

Since quail season in Georgia can be warm, this research also looked at the effects of the temperature-humidity index on performance of the dogs. On 9 days during the hunting season, this index was rated as “high” or “severe”. Despite these warm days, the dogs fed the high-fat diet maintained their superior performance based on more finds per hour compared to dogs fed the lower-fat food.[4]

Nutrition is a tool for bird dog owners and trainers, similar to breeding, training, and conditioning. Modern commercial foods can help field trialers and hunters enjoy seeing their dogs perform to their highest level. Increased knowledge about performance dog nutrition will help you to select the best type food for your dogs and your owners’ dogs.

*Eukanuba Premium Performance

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2. Reynolds AJ: Effect of diet on performance. The Iams Company Performance Dog Nutrition Symposium, Colorado State University, April, 1995.
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