

The Metabolic Spark Plugs



Many of the strains of bacteria which occupy the intestinal tract of our birds, contribute to the supply of vitamins available for growth, repair and nutrient enrichment. These benefits are accomplished by either, breaking down food particles and extracting (among other nutrients) these vitamins, or the bacteria, actually synthesizes the vitamins, themselves.

This second method, self synthesization, has always been the preferred method by which B vitamins are made available to our birds. In fact, bacteria are the only source in the world for vitamin B12 production. Even when industrial companies commercially manufacture B12, they do so using the bacterial fermentation-synthesis process.

Though we would prefer for our birds to produce through synthesis, all of the B vitamins they need, this is just not likely for two reasons. First, the long term consequences of abusing antibiotics has been a change in the number of species and the populations of those species of bacteria, which lives within the digestive tract. Not all strains of bacteria are capable of synthesizing vitamins, in fact, the number of known vitamin synthesizing bacteria is statistically small compared to the vast diversity of the bacterial populations that dwell within the digestive tract.

It may well be that we have so altered the population demographics of the bacteria strains that can survive the onslaught of cyclical antibiotic rotations, that the vitamin synthesizing bacterial strains have been reduced to such low levels that natural vitamin production happens at a much lower production rate than in the pre-antibiotic era. There is some doubt as to whether the vitamin synthesizing bacteria strains are even present in sufficient populations to supply vitamin supplementation the natural way, in the quantities necessary for health and well being.

Secondly, the application of chemical herbicides and pesticides over the past 60 years, along with the introduction of GMO (Genetically Modified Organisms), may well have reduced the nutritive value of grains to such an extent that the raw building blocks necessary for the intestinal bacteria to synthesize vitamins, has been severely impacted.

The end result of these trends, is that fanciers find themselves, increasingly dependent upon vitamin supplementation, in order to maintain the health of their birds.

It's sometimes easy to forget that the cells in our bodies, particularly muscle cells, rely on multitudes of biochemical reactions for proper metabolism, growth and maintenance. These reactions, in turn, depend upon specific vitamins to help catalyze, or facilitate, their actions.

Without sufficient quantities of these vitamins, nothing happens. Even if only one of these critical substances is deficient, progress can be stifled without warning. Virtually every chemical process that results in energy production, muscle growth and wing movement, in our birds, relies on and is heavily dependent upon, in one way or another, a vitamin.

Without vitamins, muscle mass would decay, bone density would deteriorate and all systems of the body would begin to fail.

Vitamins can be divided into two broad categories: fat-soluble and water-soluble. Fat-soluble vitamins (A,D,E, and K) are so named because they are stored in the body's fatty tissue and do not have to be replenished daily. But be careful: Because the Fat-soluble vitamins are stored in lipids, potential overdoses of these vitamins can lead to toxicity.

The water-soluble vitamins (with the exception of vitamin C) are composed entirely of the B and B-complex vitamins, including Thiamine (B1), Riboflavin (B2), Niacin (B3), Pyridoxine (B6), Folate, Cobalamin (B12), Biotin and Pantothenic Acid. Because these vitamins are water soluble and thus have difficulty entering fatty tissues, they aren't stored in the body and excessive amounts are excreted. And while this means toxicity is generally not a problem, these vitamins must be continually included in a racing pigeon's diet.

Cobalamin (vitamin B12)

Although the functions of vitamin B12 are numerous, those important to racing include carbohydrate metabolism and maintenance of nervous system tissue (the spinal cord and nerves that carry signals from the brain to muscle tissues). Stimulation of muscles via nerves is a critical step in the contraction, coordination and growth of muscles.

Biotin (vitamin B7)

Also known as vitamin H or coenzyme R, Biotin has critical functions in amino acid metabolism and the production of energy from many sources. During breeding season, the need for biotin increases as the hens tend to excrete higher levels of this vitamin, leading to possible deficiencies during this important time.

Riboflavin (vitamin B2)

Riboflavin is involved in energy production in three areas: 1) Glucose metabolism, 2) Oxidation of fatty acids, and 3) The shuttling of hydrogen ions through the Krebs cycle. Of particular interest to racing pigeon fanciers, Riboflavin is somewhat related to protein metabolism. In fact, there is a strong relationship between post race muscle repair and dietary riboflavin.

One study by Belko and colleagues found that females needed higher than RDA levels of Riboflavin to return blood levels of Riboflavin to normal after exercise. Another study by Haralambie showed that Riboflavin supplementation improved muscular hyper excitability (seen in trained athletes). This vitamin may prove to be especially important for athletic performance.

Niacin (vitamin B3)

This vitamin is involved in nearly 60 metabolic processes related to energy production and ranks high with racing pigeon fanciers by virtue of its critical importance in providing training fuel.

Thiamine (vitamin B1)

This B vitamin packs muscle! Thiamine is one of the vitamins required for protein metabolism and growth. It's also involved in the formation of hemoglobin, a protein found in red blood cells that transports oxygen throughout the body (especially working muscles). The transport of oxygen is critical to athletic performance and becomes even more important as intensity and duration of exercise increase.

Making matters more interesting, Thiamine, according to research, is one of the few vitamins that enhances performance when supplemented and is increasingly needed by athletes. Not only that, but Thiamine requirements appear to be directly related to caloric expenditure. The more exercise frequency, intensity and duration increase, the more Thiamine is needed.

Vitamin B6 (Pyridoxine)

Protein metabolism, growth and carbohydrate utilization are all made possible in part by the presence of vitamin B6. Like Thiamine, studies on Pyridoxine in athletic performance show a definite increased need for athletes, and possible performance enhancement from supplementation.

This is the only vitamin directly tied to protein intake. The more protein you eat, the more Pyridoxine you need.

Racing Pigeon Fanciers are notorious for overlooking these key components of growth and performance. Do yourself a favor and analyze the diet you give your birds, to ensure they are taking in enough of the vitamins outlined above. Remember: You could have the best diet in the world in terms of calories, fat, etc, but if your birds are lacking adequate levels of these

vitamins (metabolic spark plugs), you're shooting yourself in the foot.

At Racing Pigeon Mall, we blend our own vitamin products. Our Super B Complex is made from 100% human grade vitamins, in the quantities which best supports the needs of our birds.

Facebook users can find our vitamin catalog here: https://www.facebook.com/RacingPigeonMall/app_251458316228

Web Users can find the Super B complex listed on this page with the rest of our products:

<http://www.racingpigeonmall.com/loft/products/product-list.html>