

UNDERSTANDING BIO-AVAILABILITY

Many issues in bird nutrition are surrounded by myths and misunderstanding.

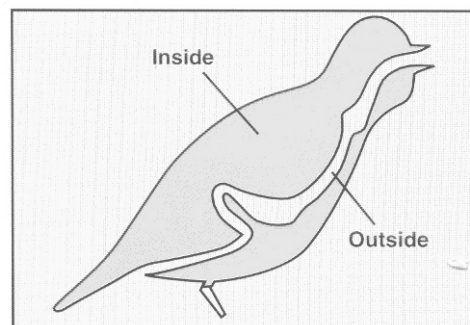
Malcolm Green of The Birdcare Company

attempts to shed some light on the important factors for bird keepers.

This is one of a series of articles covering a variety of nutritional topics.

We tend to think that if we can get a bird to eat then we are feeding it. Unfortunately life is not quite as simple as that. What we have to achieve is getting nutrients into the bloodstream. This is not always as easy as it sounds.

Instead of considering the gut as being inside the bird think of the bird as a tube and the gut as the hollow section going through the middle.



Food that is in the gut is still not inside the body of the bird. Bio-availability is all about getting the nutrients to cross the gut wall and get into the bloodstream. The blood then delivers these nutrients to organs where they are to be stored or used.

Digestion

Much of the food we feed our birds is made up of very large molecules like starches, fats and proteins. These molecules are so big they cannot pass through the 'holes' in the gut wall. So the digestive system breaks them down into much smaller molecules (sugars, glycerides and amino acids respectively). These can pass through the gut wall into the bloodstream.

The process of digestion occurs naturally in a healthy gut though much of the work is actually carried out by beneficial bacteria living in the digestive tract itself. However if birds are stressed the biochemistry of the gut can easily get out of balance. Beneficial bacteria die and many biochemical reactions stop working properly. In severe cases birds may die.

So, at times of stress, support for the gut in the form of prebiotic herbs and probiotic bacteria can be very useful. Travel and breeding are the most common situations where this is valuable. Prebiotic herbs can be purchased as separate supplements or are included in a very few selected softfoods.

Absorption

There are two forms of absorption – passive and active. In passive absorption the nutrients simply pass through 'holes' in the gut wall. If there are more in the gut than the blood they will pass into the body. Most nutrients however are given a helping hand. The gut wall literally grabs hold of them and moves them into the bloodstream. This is active absorption.

Most essential minerals (on their own) are absorbed passively while most organic molecules (the sugars, glycerides and amino acids) are absorbed actively. The passivity of most mineral absorption can cause severe problems when cheap supplements are used.

In wild diets the minerals are tied in with organic molecules (starches, fats, and proteins). These links break during the ripening of seeds. Many of the minerals return to the soil in the retreating sap. So birds on seed based diets can be quite low in their mineral intake. Adding fresh foods to the food helps but is rarely enough to overcome the deficiencies of seed. Worse still modern farming methods have stripped soils of many of their trace minerals making the foods we buy less nutritious than they were a decade or two ago. So many people have now switched to mineral supplements.

Traditional supplements have used straight minerals. But this makes the minerals difficult to absorb. Most pass straight through the gut and out in the droppings. The better modern supplements provide the minerals attached to organic molecules. This is very slightly more expensive but far more efficient and also has the benefit of being more natural.

For maximum economy mineral supplements are often incorporated into products that also contain vitamins and, where practical, amino acids are also in the same products. We have found this to be highly effective for all trace minerals except for calcium.

Calcium is slightly different

Controlling blood calcium levels is a complex process involving bones and hormones. It is a long story that will be covered in detail in a future article. For now please accept that it is better to provide highly bio-available calcium supplements less frequently than every day. This is why they are mostly not incorporated into other, more comprehensive supplements.

Summary

Having a healthy and effective digestive system is fundamental to good health. Providing nutrients in forms that are easy to absorb is also vital.

The Birdcare Company can supply you with a free supplements plan for your pets or non-breeding flock. For more information please e-mail advice@BirdcareCo.com, or visit our web site which has full lists of retailers around the world www.BirdcareCo.com