The Importance of Raw, Whole Foods for our Parrots

By Jason J. Crean, MA, MS

When I talk to bird owners or zoo staff about nutrition, I often tell them that there is no "complete" diet for birds. What do I mean by this? Basically, we cannot expect to completely replicate the wild diets to which our species have adapted. Even in the wild, many of the foodstuffs that were once plentiful are on the decline. So what do we do? We offer as much dietary diversity as we possibly can in an effort to satisfy all of the bird's individual needs. Food in its raw, whole form is the best, most efficient way to cover all of the bases. In my personal animal husbandry, as well as the recommendations I give the zoos for which I consult, I provide whole food supplementation in a variety of ways.

Birds, like most animals, require carbohydrates, fats and proteins. Some birds have more substantial requirements than others when it comes to certain nutrients. In general, we can be fairly confident in what we offer as safe and beneficial. Raw, whole foods may take many forms but the key is to offer unprocessed, uncooked food in its whole form so that the nutrients are available to their bodies. Many oils fill the great need birds have for good, healthy fats. Carbohydrates found in fruits and vegetables are necessary for efficient energy expenditure. Proteins from foods like legumes and even edible insects can be a wonderful addition so that birds can get the protein they need.

I often am questioned about our birds' dietary needs and there are rarely easy answers. However, I do think it is safe to say that whatever food we offer must contain nutrients that are bioavailable. Bioavailability involves the nutrient being in a form that the body can readily absorb and use. Raw foods take the form of fruits and vegetables, oils, seeds and nuts, legumes, teas, and other healthy food items. But let us start with fats because our birds require a good deal.

The F-word: Fats are a good thing!

Essential Fatty Acids are known as the "good" fats and avian requirements are substantial. They are critical for normal reproduction, feather production and a healthy immune system. Animals require these fats to properly absorb vitamins like A, D, K and E. These fats must be supplied by the diet but can be a bit difficult to offer because of their sensitivity to heating, processing, light and even agitation. When obtaining healthy oils for you and your birds, I always recommend purchasing them from the refrigerated oils section of a health food store or grocer. Oils high in Omega-3 (alpha-linolenic) fatty acids are needed for normal cell reproduction, which is needed to replace old and dying cells and to repair damaged cells. They also are needed to produce the many hormones that regulate the many physiological processes. Also, they help regulate the production of eicosanoids, which are molecules that help maintain a normal immune response like that of inflammation. A deficiency in Omega-3s may cause stunted growth, issues with vision impairment and motor coordination, and immune dysfunction as discussed above.

Omega-6 (linoleic) fatty acids are a bit more readily available in the diet as our birds can easily obtain a sufficient amount in seeds, soy, grains and some nuts. They are required for healthy skin, strong feathers, normal reproduction, and maintaining normal organ function. Deficiencies in these fats may lead to a failure to gain weight, degeneration of liver and kidneys, behavioral disturbances, inability of wounds to heal sufficiently, infertility, poor or abnormal feather development, and dry, scaly skin.

It's all about balance when it comes to Omega-3s and Omega-6s. Omega-6 fatty acids increase the normal inflammation response of the immune system and Omega-3 fatty acids decrease inflammation. When this balance is not reached, the immune system is either underactive or overactive, and neither condition is desirable.

Omega-3s can be a bit more difficult to feed in the diet but ideal sources include Brazil nuts, pecans, walnuts, hazelnuts, pine nuts, and seeds like pumpkin seeds and flax seed. Flax seed is quite fibrous so I usually recommend flax

seed oil as a more bioavailable alternative to feeding the actual seed. Other oils like borage and primrose oil can also be quite high in Omega-3s and can be offered in the same way as any other oil. One of the best ways for parrots to get their Omega-3s is nuts. Nuts represent a fun, healthy snack that is low in saturated fat and cholesterol-free. They are an excellent source of protein, fiber, trace minerals and phytonutrients, and contain 90 percent polyunsaturated healthy fat that helps maintain a consistent weight.

There is an oil, however, that is one of the most versatile and beneficial sources of fats you can offer: coconut oil. Coconut oil is the richest known source of medium chain triglycerides, which the body uses as an instant source of energy. It is highly digestible, therefore, great for gastrointestinal issues. It can be heated without risk. This oil is an excellent source of lauric acid which has antibacterial, antiviral and antifungal properties. Coconut oil has been known to reduce the risk of cancer and other degenerative conditions like arthritis. Even though it is a saturated fat, it supplies fewer calories than other fats and it actually improves cholesterol levels and helps fight heart disease. Many have used it, including myself, for weight loss as it helps balance the body's metabolism and hormones.

Our birds can greatly benefit from this dietary addition as it aids the rejuvenation of the skin and feathers. It supports a healthy bone density, something particularly important for animals like birds that already have hollow bones. It also has been know to reduce allergic reactions, including those pesky seasonal allergies. Using coconut oil can be quite easy as it melts into a clear liquid when kept just above room temperature. We have offered it in its raw form to birds who relish the greasy taste or mixed it with food where it provides a layering of nutrients on already healthy foods.

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Omega-7 (palmitoleic acid) is a bit new to research but has some outstanding benefits and is now available in a form that can be easily offered to birds. One of the sources that is most abundant in these fats is sea buckthorn, a berry-producing plant that can withstand the high salt exposure involved with living in coastal ecosystems. Sea buckthorn berry can now be obtained at most health food stores in the form of a bottled juice that is quite easy to incorporate into your bird's diet. Another plant source is macadamia nut oil, which can also be purchased at most health food stores in its pure form. Though sea buckthorn is rich in these important fats, it is also one of the most significant sources of nutrients like vitamin C, containing more than citrus fruits. It is also a great source of vitamin E, carotenoids, amino acids and more. Sea buckthorn, due to its Omega-7 concentration, has been known to help with ulcers, gout, skin issues, cardiac and circulation problems, asthma and respiratory irritations, lower cholesterol, and boost the immune system. It also has been known to be effective in weight loss and aiding digestion.

Energize with Carbohydrates

Carbohydrates are another source that can be vital for energy as they are broken down into simple sugars that the body's cells use as an energy source. Carbohydrates that are insoluble and typically indigestible are known as fiber as they are rich in cellulose. This helps prime the digestive system.

They can be obtained through many different plant sources. Grains like wheat and rice are a source of carbohydrates. Legumes, fresh fruits and vegetables also provide all of these natural sugars from which birds may benefit. There are two main things to keep in mind when considering carbohydrates: processing and diversity. I use no processed sugars and the only carbohydrates that we offer birds in any setting are those that are consumed within their raw, whole forms. Diversity also helps to keep the concentration of any one nutrient from becoming excessive. It is common knowledge that fresh foods are beneficial and this is where carbohydrates come into play.

The Power of Proteins

Proteins are responsible for a great deal of the body's structural supports and chemical reactions that combine as the organism's metabolism. Diversity is key when it comes to proteins. Protein diversity and enrichment is key to satisfying the amazingly varied nutritional requirements of our birds. Too much of any one thing is not recommended, no matter how healthy. The exact same combination of dietary items every single day is not recommended. Keep the bird's physiology guessing with various food sources to avoid complacency and dependency on isolated food items.

Enzymes are proteins that start and maintain the ongoing chemical reactions throughout the body. There are two main types of enzymes: metabolic and digestive. Metabolic enzymes are found in the blood, organs and tissues, and catalyze reactions that produce energy. They are critical for detoxification and the maintenance of normal body functions. Digestive enzymes are mainly secreted by the pancreas and are mandatory for the breakdown of food. They also assist in the assimilation of nutrients, increasing absorption. Enzymes include examples like amylase that breaks down carbohydrates, lipase that is responsible for metabolizing fats, and protease that converts proteins into more usable forms. We have all heard that birds should not have dairy in significant quantities; this is mainly because birds do not produce lactase, the enzyme responsible for breaking down the carbohydrate lactose.

Raw, whole foods are generally rich with these all-important enzymes. All raw foods contain enzymes, but any processing that includes heating will destroy these enzymes as they typically denature above 110 degrees F. Sprouts are one of the richest sources of enzymes and some of our favorites that contain a high level of these enzymes are garbanzo, alfalfa, millet, sesame, sunflower, quinoa and

wheat (refer to Leslie Moran's article on page 12). There is a great deal of information regarding the art of sprouting, but feeding these seeds and grains after soaking for 12 to 14 hours helps provide a powerhouse of enzymes in the diet.

Teas: Another Raw, Whole Foodstuff

When considering nutrition, we have to change our mindset a bit as it should not just be about eating; birds consume nutrients when they drink in the wild as well. Birds in the wild consume water from sources that contain plant components such as leaves, sticks, bark and seeds that leech compounds into pools and puddles. We may be missing an opportunity for nutritional enrichment and teas may be the key.

Brewing releases beneficial compounds that may not otherwise be readily available to our birds. Flowers such as calendula, chamomile, red clover, roses, hibiscus, lavender and jasmine have countless health benefits that are not only beneficial but also enriching. Tea leaves from the Camellia plant, commonly known as black, green or white teas, also have myriad beneficial compounds for our birds though any teas from this plant should be decaffeinated and organic. Even some seeds can be brewed such as coriander, fennel, milk thistle and star anise, as they all release highly absorbable proteins, fats and carbohydrates into the water.

When brewing tea for our birds, we always use hot—but not boiling—water, and let the tea cool completely before offering.* We prefer loose leaf teas—not pre-bagged—as there are chemicals in the bags themselves that we prefer to not offer our birds. If your bird is suspicious of the new drink, steep tea for a shorter period of time, making the tea more dilute. You can also substitute tea for water when making beans, pasta, rice or when baking. Many herbal teas may be fed dry or mixed with dry and fresh food mixtures, but we do recommend steeping for the full benefits.

Implement Some Ideas

What you need is whole, raw food that is fresh and clean. My philosophy has always been that avian diets should be predominately unadulterated, unprocessed food that includes a great variety of items on any given day. What you don't need is anything with added salt, fat and sugar, fried foods, dairy products, or foods with additives and preservatives. Avoid pesticides, herbicides and fungicides at all costs as the long-term effects can wreak havoc on animal physiology. Things to add to your bird's diet should include organic foods including sprouts and other fresh foods, teas, nuts and healthy oils.

Stress is a part of any organism's life and it helps the individual cope and respond appropriately to the constant stimuli that surround it. The more stressed a bird's environment, which includes inappropriate foods, exposure to chemicals in the home and water, lack of exercise, and emotional stress, the more they require certain vitamins and minerals to cope with these stressors. The best source of these vitamins and minerals is raw, whole foods. Nutritional variety is critical for good avian health and supplying correct nutrition prior to disease ensures the strongest vitality. It's all about moving our birds from surviving to thriving; animal diets are a race with no finish line so keep offering great foods and your birds will live wonderfully vibrant lives.

Jason Crean, MA, MS, is a degreed biologist and zoo consultant who specializes in avian nutrition, animal wellness and exhibit problem solving. Crean is also a biology education specialist and has been awarded the Presidential Award for Excellence in Science Teaching by President Obama in 2009, the 2010 High School Science Teacher of the Year by the American Association for the Advancement of Science, as well as awards from the National Science Teachers Association, the National Association of Biology Teachers, the Illinois Science Teachers Association, among others. He was also recently awarded the "Teacher of Distinction" award by the Golden Apple Foundation.

**Keep in mind that you're not replacing the bird's only water source with tea. Do not offer tea to the exclusion of water. Introduce the new liquid as you would any supplemental food item.*