

# The Holistic Parrot

## Avian-Specific Probiotics

In the May issue of this magazine, the reasons for never feeding dairy products to your birds was outlined. Last month the facts regarding how yogurt really is different from all other dairy products was clarified. Which leads us into a discussion of avian-specific probiotics.

The poultry industry defines probiotics as “a culture of specific living microorganisms which beneficially affects the host animal by improving its intestinal microbial balance”<sup>(1)</sup>

According to the currently adopted definition by the Food and Agriculture Organization of the United Nations and the World Health Organization, probiotics are defined as: “Live microorganisms which when administered in adequate amounts confer a health benefit on the host”. More precisely, probiotics are live microorganisms of nonpathogenic and nontoxic in nature, which when administered through the digestive route, are favorable to the host’s health.<sup>(2)</sup>



**Most researchers have noted that there is an unstable balance of beneficial and non-beneficial bacteria in the tract of normal, healthy, non-stressed bird. Double Yellow-headed Amazon.**



**The beneficial bacteria in the gut, especially lactobacilli, can be adversely effected by antibiotic therapy and stress. This compromises wellness. Green Cheeked conure, before (above), and after (left).**

The benefits of providing probiotics to poultry, and all birds, includes maintaining normal intestinal microflora, decreasing bacterial enzyme activity and increasing digestive enzymes. These findings result in improving food consumption and digestion.

In young birds receiving probiotics, their weight gain was significantly

higher than controls. Probiotics have also been shown to help clear bacterial infections and can inhibit some non-beneficial pathogens in the GI (gastrointestinal) tract.<sup>(3)</sup>

Most researchers have noted that there is an unstable balance of beneficial and non-beneficial bacteria in the tract of normal, healthy, non-stressed poultry. When a balance exists, the bird performs to its maximum efficiency, but if stress is imposed, the beneficial flora, especially *lactobacilli*, have a tendency to decrease in numbers and an overgrowth of the non-beneficial ones seems to occur. This occurrence may predispose the bird to acute disease, such as diarrhea, or contribute to poor food consumption, incomplete digestion, below normal growth, and unproductive coping behaviors, for example, feather destruction. The protective and beneficial flora, which establishes itself in the gut is normally very stable, however, it can be adversely effected by some dietary and environmental factors. The top three culprits are antibiotic therapy, stress and excessive hygiene, which prevents the chick from receiving healthy, natural gut flora from the parent.<sup>(4)</sup>

In order for an organism to be used in an avian-specific probiotic, it must meet certain criteria. The probiotic bacteria must be a normal inhabitant of the avian gut, and it must be able to adhere to the intestinal epithelium (tissue) to overcome potential hurdles, such as the low pH of the stomach, the presence of bile acids in the intestines, and the competition against other microorganisms in the gastrointestinal tract.<sup>(5)</sup>

There is a wide variety of probiotic species currently being used in avian-specific preparations. These include *Lactobacillus bulgaricus*, *Lactobacillus acidophilus*, *Lactobacillus casei*, *Lactobacillus helveticus*, *Lactobacillus lactis*, *Lactobacillus salivarius*,



When a balance exists, the bird performs to its maximum efficiency. Yellow-naped Amazon.



Avi-Culture meets or exceeds the criteria outlined above for a top quality avian probiotic.

*Lactobacillus plantarum*, *Streptococcus thermophilus*, *Enterococcus faecium*, *Enterococcus faecalis*, *Bifidobacterium spp.* and *Escherichia coli*. With two exceptions, these are all intestinal strains. The two exceptions, *Lactobacillus bulgaricus* and *Streptococcus thermophilus*, are yogurt starter organisms.<sup>(6)</sup> During the course of my research, *Lactobacillus acidophilus*, *Streptococcus faecium* and *Enterococcus faecium* appear the most frequently in the research papers I've cited, and are in many avian-specific probiotic products. To clarify, the organism formerly known as *Streptococcus faecium* has been reclassified and is now *Enterococcus faecium*. In articles, literature or on labels, you may see either or both names being used.

So, with a variety of avian-specific probiotics being available, what are the qualities to look for in a blue ribbon product?

First the probiotics used to formulate the probiotic must include a viable, live strain. Secondly, this type of probiotic

should have a guaranteed shelf life (18 to 24 months), which means it is a very stable product. Thirdly, it should list the number of organisms on the product label - number of organisms per gram of material. When reviewing the bacterial count 2.0 x 10<sup>8</sup> CFU per gram is a good level to look for. Any product with a bacterial count less than this will not be as effective in producing the desired results. In order for a company to list the number of probiotic organisms, it must have protocols in place for determining these levels. And finally, the probiotic you select should produce results.

Look for an avian-specific probiotic that contains multiple bacterial strains. More than twenty years ago researchers determined that a blend of microbial probiotics produces more effective results than using a single strain. When

*Lactobacillus casei* and *Lactobacillus acidophilus* were tested individually and together it was found that the mixture was more effective than the strains given alone. This suggests that a mixture of bacteria is more effective and the individual effects of the component strains may be additive.<sup>(7)</sup>

When purchasing avian-specific probiotics, you must be aware to avoid probiotics that contain nonviable probiotics. These are dead organisms that cannot naturally multiply in the avian gut. The label must specify live bacterial strains. Likewise, avoid freeze-dried probiotics. These will die quickly if not stored under refrigeration. A poor quality avian-specific probiotic may have a shelf life of 100 days or less unless

refrigerated. Also ensure that the correct subspecies of *Lactobacillus acidophilus*, *Enterococcus faecium*, or *Streptococcus faecium*, are included. Because I want you to receive the best results possible when using probiotics with your birds, I'm suggesting you avoid probiotics utilizing these ingredients or practices.

Through the course of researching the information for this, and the prior two 'Holistic Parrot' columns, I discovered Avi-Culture. Avi-Culture is the only non-GMO avian-specific probiotic on the market. And Avi-Culture meets or exceeds



Probiotics help maintain beneficial GI tract microflora, help clear bacterial infections and increase digestive enzymes.

the criteria outlined above for a top quality avian probiotic. Although the adverse effects of GMOs have not yet been fully documented, the profound wisdom and naturally occurring balance of nature proclaims that natural, Kosher - nothing added, nothing removed, is always better than something modified by the imperfections of the human mind. ■

Do you have questions on any aspect of parrot care that you would like to learn a holistic approach for? If so, send them to *Parrots Magazine*.

#### FOOTNOTES

- (1) 'The Role of Probiotics in the Poultry Industry', S. M. Lutful Kabir, *International Journal of Molecular Sciences*. 2009, pgs, 3531-3546.
- (2) *ibid.*
- (3) *ibid.*
- (4) *ibid.*
- (5) *ibid.*
- (6) *ibid.*
- (7) 'Systemic augmentation of the immune response in mice by feeding fermented milks with *Lactobacillus casei* and *Lactobacillus acidophilus*'. G Perdigón, M E de Macias, S Alvarez, G Oliver, and A P de Ruiz Holgado, 'Immunology', Jan 1988, Published by the British Society for Immunology.

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