

# Quick Tips About Using Probiotics with Wildlife in Rehabilitation

## What are probiotics?

Probiotics are live microorganisms which provide a health benefit for the host when administered in adequate amounts. People have been consuming probiotics for at least two thousand years in the form of bacteria-fermented dairy products, particularly yogurt. These same beneficial microflora are found naturally in the gastrointestinal (GI) tract. An absence of these microflora in the GI tract can cause acute and chronic illness, even death.

## Why do people consume probiotics, especially yogurt?

Many people are familiar with the use of probiotics to help maintain or re-establish the 'good' gut flora (bacteria) before or after the administration of antibiotics. But probiotics do so much more! Probiotics provide 'healthy bacteria' that overpower the 'negative bacteria' that cause infectious diarrhea, including *E.coli*, *Klebsiella p.*, *Salmonella* ssp. and *Clostridium d*. Probiotics have also been proven to reduce irritation and inflammation of the GI tract in general, reducing the symptoms of inflammatory bowel disease and other GI disorders. Probiotics have been found to help reduce bloat and flatulence, as well as decrease transit time of food in the GI system. They have been used with infants to prevent and treat colic.

Research has shown probiotics stimulate and support the immune system. They do this by reducing the overgrowth of antibiotic resistant bacteria, such as *Pseudomonas*, *Staphylococcus* and *E.coli*, thus discouraging opportunistic infections from establishing a foothold not only in the GI tract, but in the genital-urinary system, upper respiratory system and other organs. Probiotics have been shown to reduce stomach and upper respiratory infections in children, as well as prevent other common childhood infections.

Since stress conditions can deplete the natural gut flora, probiotics can help maintain intestinal and overall health by replenishing these microbes when taken on a daily basis.

Probiotics have many nutritional benefits as well. They have been shown to improve the quality, digestibility and availability of some dietary nutrients, including B-vitamins, iron, zinc, copper, magnesium, phosphorus, and calcium. They can also synthesize Vitamin B and K. Yet another

dietary benefit of probiotics is that they produce lactic acid which helps break down milk proteins. Yogurt, if used as a source of probiotics, has the additional benefit of being a rich source of calcium and protein. Adding yogurt to milk helps delay spoilage. Research continues on other uses and benefits of probiotics, including the use of yogurt as a dietary source of these 'friendly' bacteria.

## When are probiotics used with animals?

People administer yogurt or probiotics to animals for many of the same reasons that people consume them: to improve health and well-being. Probiotics are fed to pets, commercial poultry and swine, and wildlife in rehabilitation. The International Wildlife Rehabilitation Council (IWRC) has recommended the use of yogurt in formulas for years. The popular FoNS diet that rehabilitators feed to young songbirds in rehabilitation includes yogurt for all the reasons above. Some rehabilitators also add yogurt or dry probiotics to milk replacer formulas.

## Examples of probiotic bacteria

There is a long list of bacteria considered to be probiotics. Some of the more common include *Lactobacillus Acidophilus* strains, *Bifidobacteria* species, and *Enterococcus faecium*. The various strains have different effects in the body.



## What are the different forms of probiotics?

Probiotics are available commercially in capsule, powder and liquid form – as well as contained in some popular foods (such as yogurt, kefir, and fermented milk) and various human and pet supplements. Yogurt, whether commercially produced and purchased or made at home, is a popular form of probiotics.

Choose food or supplemental probiotics with live bacteria, whether they are active or inactive (dormant). Some people believe that non-food probiotics are more effective, while others prefer the live bacteria in yogurt or other food products. Probiotics with multiple strains of microflora are preferred over products with just one or two types of bacteria.

Like with other probiotic sources, there are many different products and brands of yogurt. Many prefer using organic yogurt due to the lack of additives and preservatives. Try to avoid using yogurt with sugars, sweeteners, flavoring and coloring. While humans use no-fat yogurt to reduce calories, rehabilitators have preferred full or low-fat yogurt for animals. Do not use soy-based yogurt with wildlife. Instructions for making yogurt are widely available.

### How to mix and store

Prepare the formula or diet for young wild mammals or birds. Allow the prepared milk replacer formula to 'rest' in refrigerator for minimum of 4 hours and preferably 8 hours. Stir a small amount of supplemental probiotic or yogurt in to the warm formula or diet just before two feedings per day. When warming formula for feeding, do not heat over 110°F.



### Amounts of probiotic or yogurt to use for wildlife in rehabilitation

While adding a small amount of supplemental probiotic or yogurt to diets of wildlife in rehabilitation can be beneficial, it is difficult to know the exact amount to use. Instructions on commercial probiotic powders suggest amounts to administer. IWRC recommends adding 5cc (or 1 teaspoon) of plain unsweetened yogurt per 100cc (½ cup) milk replacer formula. Some nutritionists suggest that since the yogurt is mostly liquid that one should decrease the amount of water used to mix the powdered formula by the same amount in order to maintain the appropriate amount of nutrients and energy (e.g., if using 0.10 parts of plain yogurt, the amount of water is decreased by 0.10 parts). Some people prefer to use powdered probiotics to avoid potential gastrointestinal upset with very young animals that might be attributed to a cow's milk product, such as yogurt.

### Administration

Probiotics are placed in food, such as milk replacer formula or prepared nestling diets, and administered during feeding. Probiotics should be administered gradually, like with any other new food. While yogurt can be an effective supplement,

it is not a substitute for milk replacer or other diets. Probiotics are not administered via a water bottle.

### Adverse effects or side effects

While a small amount of yogurt or probiotics can be beneficial, the amount should not be so high as to displace other nutrients in the diet or cause an imbalance of microflora. Consider that one cup (8 oz.) of yogurt is considered an appropriate amount per day for an adult human – only use a small amount for an animal (see section above). While evidence indicates that probiotics are safe, there have been a few reports of gastrointestinal imbalance in mammals in rehabilitation and isolated instances of adverse effects with immune suppressed humans. Research is ongoing to clarify safety considerations. Wildlife rehabilitators concerned that probiotics are directly or indirectly causing health problems should discontinue use and seek veterinary advice.

### Resources

Huffnagle, G. B and Sarah Wernick. 2007. *The probiotics revolutions: the definitive guide to safe, natural health solutions using probiotic and prebiotic foods and supplements*. Bantam Books. New York, NY.

Parvez, S. et al. 2006. "Probiotics and their fermented food products are beneficial for health." *Journal of Applied Microbiology*, 100, pp. 1171-1185.

McLeod, Astrid and Janine Perlman. 2007. "Nutrition." *Basic Wildlife Rehabilitation 1AB, 6<sup>th</sup> ed.* International Wildlife Rehabilitation Council (IWRC). Suisun, CA.

***This is intended as a reference only and not to substitute for veterinary treatment.***

### Authors

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A more complete paper on this subject will be available at [www.ewildagain.org](http://www.ewildagain.org) in late 2010.