PREBIOTICS and PROBIOTICS:

A brief look at their benefits, differences and the role they play in GI health.

The gastrointestinal (GI) environment and its bacterial makeup play a critical role in the health and wellbeing of our cats and dogs. There are enormous populations of bacteria found in the gut, and they are classified broadly as “good” and “bad” bacteria. Usually these organisms are fairly equal or balanced in number. However, when the populations of bad bacteria exceed that of the good, disease, including diarrhea, can develop. Prebiotics and probiotics are oftentimes used to help regulate the proportions of good and bad bacteria, but it is important to recognize the differences between the two.

Prebiotics are non-digestible fibers classified as carbohydrates. Their function is to make the GI environment friendlier, which promotes the growth of good bacteria while diminishing the action of bad bacteria on the gut. Digestion and absorption are also enhanced by prebiotics. The fermentation of prebiotics by good bacteria produces nutrients that provide food for the cells that line the intestine. Also, a large portion of the immune system functions in the gut, and some prebiotics actually activate that immunity.

Royal Canin utilizes two prebiotics - fructo-oligosaccharides (FOS) and mannan-oligosaccharides (MOS) - to promote a healthy GI tract and good stool quality:

> **FOS** is a fermentable fiber, which means it can be broken down into simpler substances called short chain fatty acids (SCFAs). The pH of the intestinal tract becomes more acidic, enhancing the growth of good bacteria. The intestinal cells can also use the SCFAs as energy. Overall, FOS makes for a “friendlier” GI environment, which helps to keep the cells that line the intestine healthy.
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> **MOS** also improves GI health by binding to the bad bacteria and preventing them from attacking the cells that line the intestine. By

using this method, MOS “moves” bad bacteria out of the body in the feces. Another benefit of MOS is the activation of the immune system in the gut. This benefits the health of not only the gut, but also that of the entire animal.

Probiotics, on the other hand, are living, microscopic organisms that add to the numbers of good bacteria in the dog or cat’s GI environment. They are administered either as a separate dietary supplement or in the pet food (added by the manufacturer). The probiotics must be given in sufficient quantities [100 million colony forming units (CFU) to 100 billion CFU] to be beneficial to the pet. In theory, this is a great concept; however, because probiotics are living organisms, keeping them alive is a challenge. Manufacturing, storage (including on-shelf at the store), and shipping temperatures must be carefully monitored so that the organisms do not die. In addition, once ingested by the cat or dog, they must survive stomach acid and bile to reach the gut while still alive.

It is important to recognize the differences and benefits of prebiotics and probiotics when you’re choosing methods to regulate and improve your dog and cat’s GI environment. While both can be beneficial, their uses can have different impacts on the health of your pet. By utilizing science and the appropriate nutrients, pet food diets can help provide optimum nutrition.

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References available on request.