Effect of a Multi-Strain Probiotic (Visbiome ©) on Intestinal Microbiome Diversity in Two-Breeds of Canines

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The intestinal microbiome influences host health through a communication network that exists between the CNS and the brain via vagus nerve stimulation. This relationship is key for understanding the interactions between competing gut microbes. Studies involving canines have shown that oral supplementation of these microorganisms, particularly species of canine-derived Lactic acid bacteria (LAB), has improved the adaptive immune response, in addition to a reduction of intestinal inflammation and pathogenic bacteria in various breeds. By analyzing the composition and diversity within the intestinal microbiome and by determining the symbiotic nature of LAB species such as Lactobacillus, Bifidobacterium, and Streptococcus within the intestine, this study aimed to expound on this relationship. Following a two-week control period, Labrador Retrievers (n = 3) and Golden Retrievers (n = 2) were supplemented with 112.5 × 10^9 CFU of a Visbiome probiotic containing eight strains of LAB for six weeks. Stools were collected before and after the probiotic regimen, and the contents of each were compared in a crossover study by determining 16S ribosomal sequences using MinION sequencing. Relative frequency tables were created, and diversity analysis was conducted using alpha and beta diversity metrics of the MetONTIIME pipeline.

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