

Probiotics... The Importance of Its Viability

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Probiotics composed of live microorganisms are considered functional foods that have a beneficial effect on the functioning of the digestive, immune and respiratory systems. Other studies associate probiotics with cholesterol reduction, obesity, risk of diabetes and coronary heart disease, however, more scientific studies are needed.

Among the probiotic bacteria for human consumption we find the most widespread, *Lactobacillus* and *Bifidobacterium*, lactose fermenting bacteria and other carbohydrates, which produce lactic acid, organic acids, and their metabolites, and create acidic conditions that inhibit the proliferation of pathogenic bacteria, whose optimum pH is 6 to 7, the probiotic bacteria displace the pathogenic bacteria by competitive exclusion and create favorable conditions for the beneficial bacteria, helping to maintain the intestinal microbial balance.

On the other hand, the indiscriminate use of antibiotics as growth promoters in animal production has a residual effect on the meat of poultry, pork and cattle in general, the which generates bacterial resistance to the consumer with very serious consequences which are extremely detrimental to the health of man. Since 2006, the European Union has banned the use of antibiotics as growth promoters in animal production, which has made it necessary to seek alternatives, such as probiotics, to replace antibiotics as growth promoters.

However, several studies performed with probiotics show variability in the results, some studies show favorable responses and other studies statistically do not find significant differences between the experimental groups, due to many factors such as: the strain, the effect of the probiotic is specific to the bacteria, other is the

number of representative samples that show lack of scientific rigor, the viability of probiotics, etc., the latter also being an important factor to be considered in the variation of results and that is often ignored. Many studies do not give due importance to the viability of probiotics, this is the number of live and functional bacteria, remember that the beneficial effect of probiotics will depend on the number of functional colony forming units per mL or gram cfu / mL. The Food and Drug Administration (FDA) recommends quantities greater than 10^6 CFU./mL, to ensure the viability of probiotics during industrial process, storage and remain resistant to man's digestive juices.

To ensure the viability of probiotics there are several alternatives such as micro encapsulation that allows bacteria to be protected from external factors such as temperature, pH, etc. However, some micro encapsulation techniques also affect the integrity of the bacteria therefore its viability, others have given good results, but, considering always the economic feasibility, there is a field to continue studying about it.