



## Editorial

Intestinal inflammatory diseases are very complex disorders, with economic implications and affecting the animal welfare and well-being. These types of disorders, manifesting both at human and animals are characterised, from scientific point of view, by an excessive cell-mediated response that leads to an impairment of the barrier function of the gut, leading finally to the intestinal inflammation, with all the associated symptoms: diarrhoea, vomiting, pain, reduced appetite, decrease of body weight. The intestinal tract is the largest interface through which human and animals interact with their environment. Four protective barriers maintain the integrity of this interface: epithelial, chemical, microbiological and immunological barrier. Under normal conditions, the stimulation of the mucosal immune system by gut microbiota determines a state of "low-grade physiological inflammation", a status of continuous activation of the mucosal immune system in response to commensal microorganisms, and in case of needs, also towards pathogens. Mucosal homeostasis requires a continuous balance between pro- and anti-inflammatory components. The disruption of one or more of intestinal barriers can lead to chronic inflammation which is a hallmark of intestinal disorders. The goal of the treatments applied in this case is the reduction of inflammation and establishing a normal gastro-intestinal function. There are two main ways for treating the intestinal inflammation:

- In classical medicine, based on anti-inflammatory drugs, suppressors of the immune system and antibiotics; in gastroenterology, the classical therapies are drugs, diet (fiber, lipids), probiotics, prebiotics, many studies have investigated various nutritional approaches for preventing or reducing gut disorders and deleterious effects of inflammation in farm animals. New and novel dietary strategies are clearly required if the farmers proposed to maintain, or improve, their economic competitiveness within Europe and world markets. The supplementation of the animal diet with ingredients rich in bioactive compounds with antimicrobial properties in order to counteract the intestinal inflammation was lately investigated. Prebiotics are selectively fermented ingredients that allow specific changes in the composition and/or activity of the gastrointestinal microflora, e.g. the selective stimulation of the indigenous beneficial microflora and increasing the defence and resistance potential of the animal and human organism. Polyphenol extracts from a variety of plants have been shown to have

inflammation, their specific mechanisms of actions, including a direct

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