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Economic and Environmental Impact of Using Exogenous Enzymes on Poultry Feeding

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Abstarc :

Exogenous enzymes supplementation on diets improves production efficiency of poultry by increasing the digestion of low quality products and reducing nutrient loss through excreta, allowing the reduction of diets nutritional levels with likely economic advantages. Enzymes are added to animal ration with the goal of increasing its digestibility, removing antinutritional factors, improving nutrient availability, as well as for environmental issues. A large number of carbohydrases, proteases, phytases and lipases are used for this purpose (McCleary, 2001). Usually, commercial enzymes used as additives do not contain a single enzyme, instead, they are enzymatic preparations containing a variety of enzymes, which is eligible and once rations are composed by ingredients of different constitution (Campestrini et al., 2005). According to Buchanan et al. (2007) exogenous enzymes hydrolyze non-starch polysaccharides (NSPs) which might be potentially used by the animal, increasing the usage of feed energy. Moreover, the releasing of cell content occurs, becoming available to enzymatic digestion, therefore increasing the digestibility of all nutrients. Another important consequence of this utilization is the reduction of such non-digestives residues negative impacts on digesta viscosity (Slominski et al., 2006). Phytase, in its turn, hydrolyzes phytate that is found in every ingredient from vegetal source. Phytate is a polianionic molecule with potential to chelate nutrients positively charged (Na+, Mg++, K+, Ca++ and Zn++, among others), characterizing its antinutriotional property, which compromises utilization of protein, energy, calcium and trace-minerals (Selle and Ravindran, 2007). Consecutively, phosphorus and other elements become available for metabolism and animal (Roland, 2006). Hence, this review aims to present the economic and environmental impacts of enzymes utilization in poultry diets.

Key Word :

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