

Enzymes in broiler diets with special reference to protease

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Enzyme supplementation of poultry diets is nutritionally, economically and environmentally justified. Enzymes are used to increase the energy value of feed ingredients and enhance the utilisation of protein, fats, carbohydrates and phytin phosphorus from plant materials, leading to a lower excretion rate of undigested nutrients into the environment and, hence, reduced environmental pollution. This is especially important regarding proteases, as the correct digestion of nitrogenous compounds in feed materials is essential for reducing N excretion – a major pollutant worldwide. Numerous studies have shown no adverse effects of enzyme supplementation in broiler diets on body weight, mortality, health, feed intake, FCR, nutrient digestibility, meat quality and production costs. However, there is still a large amount of uncertainty regarding the use of enzymes.

Keywords: broiler; diet; enzymes; protease

Introduction

Modern poultry production involves the use of breeds that give high quality meat and feed formulations that ensure optimum meat quality, along with high yields. Market requirements have substantially changed in the last years, and in contrast to the great demand in the previous decades for maximum possible yields of broiler meat, increasing attention is focused on improving the nutritional quality of poultry meat (Bogosavljević-Bošković *et al.*, 2012), whilst maintaining weight gain. Moreover, increasing importance in broiler production has been attributed to environmental standards to help prevent environmental pollution and ensure improved rearing conditions for birds.

Feed costs account for about 60-75% of broiler production costs. This fact suggests that an increase in profit is most easily attainable through feed cost reduction. These cost

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