



## Effects of pelleting temperature on microencapsulated AviPlus® and the gastrointestinal recovery of thymol in broiler chickens

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Thermal treatment of poultry feed is common practice to improve the biological and nutritional value of some ingredients (i.e., soybean) and to sanitize the feed from Salmonella or prevent pathogens and spoilage bacteria contamination (LEAVER, 2008; JONES, 2011). Pelleting temperature varies widely among commercial feed production plants and, depending also on geographical distribution, can range from 65°C and 85°C (LEESON and SUMMERS, 1991). The higher the temperature the more elevated is the risk that feed additives, either nutritional (i.e., vitamins and amino acids), technological (enzymes), or zootechnical (probiotics, organic acids, plant extract constituents), that are normally included in poultry diets, might be damaged. A certain degree of loss of activity is therefore expected when these additives are included pre-pelleting, but the extent might be extremely variable depending on the additive itself and on the technology of production. Moreover, as in the case of zootechnical additives, their efficacy is further compromised by the loss of activity along the intestine as they are rapidly metabolized and/or inactivated by gastric and intestinal enzymes. AviPlus®P (Vetagro SpA, Italy), a zootechnical feed additive approved by the EU Commission for safe and effective poultry production (EU regulation 849/2012), is a microencapsulated blend of citric and sorbic acids, thymol and vanillin embedded in a matrix of vegetable hydrogenated lipids. The efficacy of AviPlus®P on growth performance in chickens has been clearly demonstrated (EFSA, 2012) and the technology used for the production of this additive has already been proven effective in delivering active principles in the cecum of broilers (GRILLI et al., 2007) and pigs (PIVA et al., 2007). The objective of this experiment was to assess if feed pelleting at different temperatures impacted the intestinal availability of AviPlus®P in broilers. ESPN Potsdam 2bis.pdf

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