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Title :
Effect of phytobiotic blends on digestive microbiota of broiler chickens in two rearing densities

Abstract:
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In poultry, phytobiotics are used in order to improve host growth performances. Several modes of action could be involved, the most probable being by effect on microbiota, immunity, antioxidant capacity, and digestive area. The effect on growth performances of these additives can shown variations partly due to variation in breeding conditions .
In this study, the digestive microbiota and the performances of chicken fed with or without phytobiotics were studied according to rearing densities. Three experimental dietary treatments were performed: a control diet, a Exp1 diet incorporating a phytobiotic blend from d22 with an antimicrobial effect, and a Exp2 diet incorporating the previous phytobiotic blend from d10 preceded by another phytobiotic blend with antioxidant and immunomodulator effects. Body weights were recorded until d39. Digestive microbiota was analysed by TTGE in digestive content of crop, ileum and caeca at 3 and 6 weeks. The effect of the phytobiotics on the microbiota was assessed by ANOSIM performed on the Pearson distance matrix between the TTGE profiles.
Phytobiotics used during this study where efficient in promoting chickens growth from 3 to 6 weeks, specially at normal density. Moreover, changes were observed in digestive microbiota of chickens fed with phytobiotics, specially at 6 weeks. These changes were more important at high rearing density. With Exp1, main changes were observed in the caeca, whereas with Exp2, changes were observed in ileum and caeca. Thus, digestive microbiota may be one factor involved in the growth promoting effect of these phytobiotics, although probably not the only factor.