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GROWTH ENHANCING EFFECT OF HERBAL FEED ADDITIVES FOR POULTRY: A REVIEW

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ABSTRACT

Phytogenic feed additives (often also called phytobiotics or botanicals) are commonly defined as plant-derived compounds incorporated into diets to improve the productivity of livestock through amelioration of feed properties, promotion of the individual production performance, and improving the quality of food derived from those animals, such as herbs (flowering, non woody, and non persistent plants), spices (herbs with an intensive smell or taste commonly added to human food), essential oils (volatile lipophilic compounds derived by cold expression or by steam or alcohol distillation), or oleoresins (extracts derived by non aqueous solvents).

Key Words: Feed additives, Growth promoter, Phytogenic.

INTRODUCTION

The phytogenic growth promoters supplemented in the diet or added in the drinking water in the broiler birds have a promising biological effect on their growth performance, to reduce the pathogenic bacteriological load in different parts of digestive tract and to increase villus height in different segments of small intestine mainly in duodenum.

Within phytogenic feed additives, the content of active substances in products may vary widely, depending on the plant part used (e.g. seeds, leaf, root or bark), harvesting season, and geographical origin. The technique for processing (e.g. cold expression, steam distillation, extraction with non aqueous solvents etc.) modifies the active substances and associated compounds within the final product.

Influence and impact on Physiological parameters

The phytogenic growth promoter remains active throughout the gastrointestinal tract and as a consequence, it will exert broad spectrum antimicrobial action, will enhance nutrient utilization by exhibiting improvement in overall growth performance of broilers and by augmenting the gastrointestinal histomorphology thereby enhancing the host immunity [1].

Recent investigations on the related aspect

Burt [2] stated microbial analysis of minimum inhibitory concentration (MIC) of plant extracts from spices and herbs, as well as of pure active substances revealed levels that considerably exceeded the dietary doses when used as phytogenic feed additive. Aksit *et al.* [3] reported antimicrobial action of phytogenic feed additive may be in improving the microbial hygiene of carcass.

Batal and Parsons [4] indicated that micronutrients also influenced the morphology of intestines. They observed an increased height of villi of jejunum in broilers at 28th day of age when fed with 5 g BioMos/kg from 7 to 28 day. Jamroz *et al.* [5] have conducted a study that phytogenic formulations contained pungent principles (e.g. capsaicin) significantly increased intestinal mucus production.

Jamroz and Kamel [6] observed on the improvements in daily weight gain (8.1%) and in feed conversion ratio (7.7%) of chickens when feed with diets supplemented (300 mg/kg) with a plant extract containing capsaicin, cinnamaldehyde and carvacrol. Biavatti *et al.*[7] reported *Alternanthera brasiliana* extracts (180 ml/200 kg feed) improved broiler performance from 14 to 21 days. Hernandez *et al.* [8] studied that blend of essential oils of cinnamon, pepper and oregano compounds improved digestibility of nutrients in chicken. Jang *et al.* [9] in chicken is the benefit of some natural substances on gastro intestinal enzymatic activity, most likely improving nutrient digestibility.

CONCLUSION

The phytogenic growth promoter enhance productive performance of the broiler in terms of body weight gain with minimum alteration of gut morphology and the possibility of bacterial invasion is much less. Phytogenic growth promoter can be used as a potent replacer of antibiotic growth promoter if used at optimum level.

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