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Improvement in nutrient utilization in Deccani rams fed with coarse cereal crop residue as basal diet by polyherbal supplements

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Abstract
Most of the nutrients available in the feed of the animals remain unutilized and goes waste. A study was conducted to evaluate the efficacy of polyherbal formulations to improve the utilization of nutrients available in feed. 24 Deccani rams (198 ± 11.2 days of age and 21.2 ± 0.04 kg body weight) were assigned randomly to four treatments groups. T_1 no poly-herbal supplement (NPHS; n = 6), T_2 with poly-herbal supplement - Ruchamax (PHS1; n = 6), T_3 with poly-herbal supplement - AV/RMF/17 (PHS2; n = 6) and T_4 with poly-herbal supplement - AV/ADC/16 (PHS3; T_4 n = 6) and T_2, T_3 and T_4 group animals received 5 g of the test drug respectively daily for 21 days. Significantly better results in terms of DMI, Nutrient digestibility, increased body weight, FCR and Total volatile fatty acids was observed in polyherbal supplemented groups T_2, T_3, T_4 as compared to T_1. It is concluded that, poly-herbal supplements would help in efficient utilization of available nutrients in coarse cereal crop residues by optimally modulating rumen kinetics and VFA production in Deccani rams and thus performance of the animals as these nutrients can be utilized for improving the production.

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1. Introduction

Sheep occupy a significant niche in the rural economy of India due to their inherent qualities of early maturity, ability to thrive even under harsh environment, low capital investment, etc. And acts as an insurance against crop failure and provides alternative source of livelihood to the farmers all the year round (Selvam et al., 2002). These animals mostly thrive on the natural pastures and coarse cereal crop residues. The forage supply from natural pasture is scarce, besides low digestibility and poor availability of protein, minerals and vitamins (Samanta et al., 2003). The feed resources available for animals after grain harvest are usually fibrous and devoid of most essential nutrients which are required for improved microbial fermentation and improved performance of host animal (Dixon et al., 1987). This manifests in loss of body weight and condition, reduced reproduction capacity and increased morbidity and mortality rate (Ajayi et al., 2005). Attempts were made to improve nutrient utilization from these coarse cereal crop residues by various means-supplementation of poly-herbal tonics and rumen modulators is one of them.

Enzymes and antibiotics in feed are widely used in intensive livestock production systems in developed societies to improve the digestibility of feeds and utilization of nutrients, are not available to many resource-poor farmers in developing countries like India (Ebiamadon et al., 2009). These synthetic supplements are often beyond the purchasing capacity of many resource-poor farmers, who