

**Influence of supplemental enzymes, yeast culture and effective microorganism culture on gut microflora and nutrient digestion at different parts of the rabbit digestive tract.**

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A 10 week experiment was carried out to study the influence of supplemental effective microorganism (EM) culture, yeast culture and enzymes on nutrient digestibility and gut microflora of rabbit gastrointestinal (GI) tract. 24 New Zealand White rabbits, 8- to 9-week-old, were allotted to four dietary treatments; a basal (control) feed, basal feed supplemented with either EM (1%), yeast culture or enzymes (400 ppm). Nutrient flow in digesta and their digestibility at ileum, caecum, colon and in the digestive tract as well as gut microflora distribution were studied. Feed dry matter was diluted from 92% to approx equal to 14% up to the ileum and approx equal to 95% of this water was reabsorbed by the colonic rectal segment followed by caecum (25%). EM and yeast improved protein digestibility at a lower rate than enzymes. Ileal, caecal, colonic and digestive tract digestibility of crude protein with enzymes were higher by 10.8, 9.4, 11.3 and 10.7%, respectively, as compared with the control. Yeast and enzymes increased crude fibre digestibility at ileum, caecum, colon and in the digestive tract by 8.5, 9.6, 9.0 and 8.3%, respectively, while EM improved them at a lower rate. Irrespective of treatments, digestive tract digestibility of crude protein (0.698-0.773) and fibre (0.169-0.183) were higher ( $P < 0.05$ ) than the ileal digestibility. Even though a post-caecal protein digestibility was observed, fibre digestion seemed to be completed in the caecum especially with yeast and enzymes. High precaecal digestibility of crude fibre (97%) and protein (95%) were observed even without additives probably due to caecotrophy. EM and yeast culture promoted the growth of lactic acid bacteria especially in the caecum but they did not influence gut yeast and mould. The present findings reveal that even though rabbits digest nutrients efficiently through hind gut fermentation, they can be further enhanced by EM, yeast and enzymes. Out of the three additives tested, enzyme was found to be the best.