

3rd International Conference on

VETERINARY & LIVESTOCK

November 02-03, 2017 Bangkok, Thailand



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Encapsulation process for feed enzymes to improve performance and evaluation of certain feed enzymes

Efficient utilization of fiber, crude protein, lipids and phosphorous by the livestock species especially poultry and pigs results in higher productivity and profitability. Digestive enzymes like fibrolytic enzymes, proteases, lipases and phytases play an important role in efficient utilization of fibre and other nutrients in diet. Feeds used for broiler bird's production are often pelleted and the ability of added enzymes to withstand this heat treatment is questionable (Al Bustany, 1996). Usually commercial poultry feed is pelleted for the convenience of handling and enhanced bird performance. The stability of feed enzymes is an important consideration due to susceptibility to inactivation by pelleting heat and moisture and also during storage. Published research suggests that feed enzymes are inactivated to various degrees during heat processing such as pelleting and during storage. Recently, encapsulation or coating technology is adopted by feed enzyme companies (Danisco, 2009). The coated enzyme phytase claimed to be having excellent thermostability. New patents in U.S (Nyachoti, 2010) also suggest that coating of animal feed enzymes offers greater stability to heat and other physicochemical conditions during processing and storage of feeds. The current status of coating of feed enzyme can be seen only as published patents or company released abstracts and no details are specified about the encapsulation/coating process. The standardized encapsulation/coating process for feed enzymes helps to enhance thermal and storage stability by identifying the appropriate encapsulation materials and process, without affecting the functionality or in-vivo release of enzymes. The evaluation of certain enzyme performance in monogastric farm animals is also presented.

Biography

Komireddy Kondal Reddy has completed his MVSc, PhD (Australia), PDF (Japan), interested in the field of veterinary science and currently he is working as a Registrar at PV Narsimha Rao Telangana Veterinary University, India. He has published more than 120 papers and received many awards including ICAR Junior Fellowship, Common Wealth Fellowship, Japan Science and Technology Fellowship, State Best Teacher Award, University Best Teacher Award, 2 Best Research Paper Awards, Rythu Nestham Award, Best Video presentation award for the French project by PRSI, SAB Honorary Fellowship and Outstanding Achievement Award by the Society for Applied Biotechnology for 2016, etc.

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