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| <b>Name of the project</b> | <b>Utilization of rumen digesta waste from slaughter house as alternative local protein sources for economical ration production and controlling environmental pollution</b> |
| <b>Funding agency</b>      | <b>Department of Biotechnology (DBT), Lucknow</b>  |
| <b>Year of start</b>       | <b>2017-18</b>   |
| <b>Year of completion</b>  | <b>2019-20</b>   |
| <b>Name of PI and</b>      | <b>Dr.Ajit Kumar and</b>   |
| <b>Co- PI</b>              | <b>Dr Ahamad Fahim</b>   |
| <b>Total budget</b>        | <b>19.63 lakhs</b>   |

**Significant achievements:**

- The process includes the treatment methods for conversion of rumen digesta waste from slaughter house to useful product of nutrient rich economical feed stuff treated rumen digesta development. It can be included in diet of poultry and ruminants for economical productivity with improve sanitary condition, public health, environment pollution and hazards that accrue from inadequate slaughter house waste disposal.
- Rumen digesta collected were initially treated by sun drying by spreading on the clean ground in open sunlight till the moisture reduced to 8-12% level followed by steam treatment at autoclaving temperature and pressure to make rumen digesta pathogen free and hygienic suitable for feeding. The treated rumen digesta was processed further by milled in a grinder (only poultry) and packed in suitable labeled bag to produce feed stuff of treated rumen digesta ready to mix with other feed ingredients for economical balanced ration preparation of poultry and ruminants.
- The research will lead to validating the treated rumen digesta as an alternative protein sources and increase flexibility of low cost ration production for economic upliftment of farmers and livestock owners. The outcome would also lend support for the concern of environmental pollution by animal waste or by-products of slaughter house. It further reduces concern for hazards that accrue from inadequate waste disposal.



**Ensiling of rumen digesta**



**Sun drying of rumen digesta**



**Ensiling plus sun-drying of rumen digesta**



**Steam treatment/Autoclaving of rumen digesta**



**Crude fibre estimation**



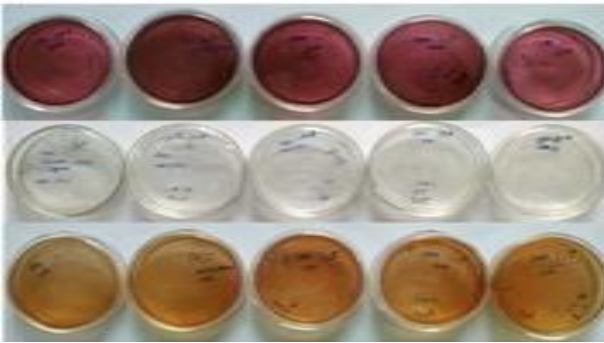
**Total ash estimation**



**Dry matter estimation**



**Crude fat estimation**



**Microbial study of rumen digesta**



**In Vitro study for rumen digesta**



**Poultry feeding research trial**



**Goat Individual feeding trial**



**Metabolic trial in Goat**



**Publications:**

- Ajit Kumar, A.K. Pattanaik, N. Dutta, Sandeep Singh, K. Singh, A. Fahim and K. Tyagi (2020). Ameliorating in vitro rumen fermentation and digestibility by treated rumen digesta. Centennial 100 years of Animal Nutrition Research in India: Special Issue, Animal Nutrition and Feed Technology 2021 (Paper accepted)
- D.P. Bhartiya, D.S. Sahu, A. Kumar, G. Chandra, S. Pal, H. Verma, D. Roy, P.S. Maurya and R.A. Siddhique (2019). Effect of Treated Rumen Digesta Inclusion in Finisher Ration on Growth Performance, Hemato-biochemical Profile and Immune Status of Coloured Broiler. *In proceeding of XVIII Biennial International Conference (INCAN 2019)*, 17-19 Dec, 2019, WBUAFS, Kolkata, pp 158