A MEASURE OF THE FEEDING VALUE OF SOME PROTEIN CONCENTRATES TO RUMINANTS

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Microorganisms in the rumen breakdown feed proteins at different proportions to build their own body proteins. This process though advantageous at certain times could often limit the usefulness at certain times of a good quality protein as a supplier of essential amino acids to the host animal. The rate of breakdown of these proteins depend upon a number of factors; one of the most important being the rate of solubility of the protein in the rumen fluid. The portion that resists breakdown and passes intact from the rumen to the duodenum, referred to as 'by pass protein', is generally available post rumen and a measure of this quantity can be used as an index to indicate the quality of the protein for ruminants.

Five protein concentrates (5 g each) in nylon bags were subjected to rumen microbial fermentation by suspending at a fixed position in the rumen of a fistulated buffalo calf. Protein survival was measured by removing the bags at intervals of 2, 5 or 8 hours and analysing the contents for crude protein. A minimum of three bags were removed each time.

Results compared on the basis of $T_{\frac{1}{2}}$ values (time taken for zero hour concentration to decrease by half) for protein disappearence showed that spent tea leaf, a residue from the instant tea industry with 32% crude protein, protein, has the lowest rate of disappearence and therefore the highest amount of by-pass protein. $T_{\frac{1}{2}}$ values for spent tea leaf, fish meal, coconut oil meal, Ipil Ipil meal and gingelly oil meal were 39.78, 16.05. 10.49, 12.65 and 11.12 hours respectively.