

Watchara Ninphet 2010: Utilization of Extruded Soybean Meal as a Source of By-pass Protein in Dairy Cows. Master of Science (Animal Nutrition and Feed Technology),  
Major Field: Animal Nutrition and Feed Technology, Department of Animal Science.  
Thesis Advisor: Assistant Professor Lerchat Boonek, Ph.D. 116 pages.

Three experiments were conducted to study the utilization of extruded soybean meal as a source of by-pass protein in dairy cows. Experiment 1: preliminary study was conducted to evaluate effect of various bypass protein processing by using short barrel extruder on protein dispersibility index (PDI). The results showed that extrusion of soybean meal resulted in lower value of PDI than those of without extrusion. While extrusion of soybean meal mixed with dried cassava leaves meal and cassava chips meal showed similar PDI value as compared to unmixed soybean meal.

Experiment 2: the protein degradability of various processing soybean meals were evaluated by the *in sacco* nylon bag method using 2 rumen fistulated dairy bull. Experimental soybean meals were solvent extracted soybean meal (SSBM), expeller soybean meal (ESBM), extruded solvent extracted soybean meal (E-SSBM), extruded expeller soybean meal (E-ESBM), extruded solvent extracted soybean meal mixed with 5% dried cassava leaves meal and 2.5% cassava chips meal (E-SCLC) and extruded expeller soybean meal mixed with 5% dried cassava leaves meal and 2.5% cassava chips meal (E-ECLC). The results showed that effective degradability of the CP at 5% per h of solid out flow rates of extruded soybean meal was significant ( $p<0.05$ ) lower in all group than those of soybean meal. The mixed dried cassava leaves and cassava chips resulted in lower CP content of the experimental diet however the effective degradability of CP was not different compared to the unmixed diet.

Experiment 3: the experiment was carried out to determine the effects of SSBM, ESBM, E-SSBM and E-ESBM as basal feed protein source on performance of 20 dairy cows. There were no significant difference of feed intake, milk yield and milk composition. However, the cows fed SSBM diet with low by-pass protein showed 10-15% lower average milk yield (kg/cow/day) compared to other groups. While the cows fed ESBM, E-SSBM and E-ESBM tended to maintain milk yield through out the experiment as compared to SSBM group.

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