Value Added Pellet Products Based on Combination of New Co-Products from Bio-Fuel/Bio-Oil Processing, Low Grade of Legume Seeds/Screening, and Lignosulfonate Chemical Compound at Different Levels for Dairy Cows

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Recently, a relatively new co-product (Carinata meal) from bio-energy processing of carinata seeds has become available. This new co-product has not been fully understood and registered as an animal feed source in all species at CFIA except beef cattle. Little information is available on processing effect, varieties effect, blending effect, and processing batch effect on bioactive compounds such as Gluosinolate (GS), Condense Tannin (CT), amino acids (AA) profiles as well as other chemical and nutrient profiles. Much effort is still needed to fully understand these co-products in all aspects in term of nutritive value and structure change impact, particularly when it blends with other feedstuff as a blend pellet feed. To date, there is no study on effects of combination of the new co-product with low grade of peas or pea/lentil screenings and lignosulfonate chemical compound (feed additive) at different levels for dairy cattle. There is no study on effect of pellet processing of this combination on bioactive compounds (GS, CT) levels, amino acid profile, other chemical and nutrient profiles, nutrient utilization and availability in rumen and intestine in ruminants (both beef and dairy cattle). There is also no study on pellet processing induced changes on structure in relation to nutrient utilization availability of the blend feed materials at different levels in ruminants. The hypothesis of this project is that the combination of different types of feedstuff and feed processing will have favorite effect to compensate each other and optimize and balance key nutrient supply to dairy cows and optimize available nitrogen to energy synchronization to dairy cows. This project aims to test and develop value added pellet blended feed products based on combination of new and conventional co-products from bio-fuel/bio-oil processing, low grade of peas (or pea/lentil screenings), and lignosulfonate chemical compound at different levels for ruminants. A comparison is made between pellet products based on new co-products from bio-fuel processing (new carinata meal based blend pellet product) and conventional co-products from bio-oil processing (canola meal based blend pellet products) which will be presented.