

PRO1806: Increasing Faba Bean Use in Pet Food and Aquaculture Feeds

Progress has been made in a) Determining the maximal inclusion limit of faba bean meal and optimally fermented faba bean meal in dog food and b) Determining the optimal inclusion of unfermented and fermented faba bean meal protein concentrate for salmonid fish. In the production of dog food, faba bean meal from high (Florent) and low tannin (CDC Snowdrop) varieties have been subjected to large scale semisolid *Candida utilis* fermentation at the Western College of Veterinary Medicine (WCVN). These ingredients have been formulated into diets made at the Canadian Feed Research Centre (CFRC) via extrusion. Initial palatability study has begun, with long-term feeding trials to be run over the coming winter and spring of 2020.

In the production of fish feed, progress was made on two innovative aspects of the project. 1) Preliminary work showed that the semisolid fermented faba bean meal can be air classified into fine (protein) and coarse (starch) fractions on a pilot scale at Saskatchewan Food Industry Development Centre Inc. That being said, further characterization and optimization is required. However, this innovative discovery allows the research team to move ahead with fermenting faba bean meal to reduce anti-nutritional factors (ANFs). 2) Small scale preliminary pilot fermentation, at WCVN (Loewen's laboratory), has demonstrated that co-fermentation with two microbes produced the best reduction in ANFs. Moving forward these two innovations of air classification of fermented meal combined with co-fermentation will be used to create fermented faba bean aquaculture feed ingredient, with fish digestibility studies to be conducted late winter or early spring of 2020.