

Kopchok Taboonpong 2014: Effect of Docosahexaenoic Acid from *Schizochytrium sp.* Supplementation on Growth Performance and Immune of Pre-Weaning Dairy Heifers. Master of Science (Animal Science), Major Field: Animal Science, Department of Animal Science. Thesis Advisor: Mr. Rapeepong Panivivat, Ph.D. 66 pages.

The study had 2 parts. The first part was focused on dairy calf management at amphur Muaklek, Saraburi province. The dataset collected from thirty-two dairy farms with questionnaire during April to August in 2012. The survey results indicated that newborn calves were generally fed with colostrum 3.05 kg daily for 4.57 days. Most calves were fed fresh milk, calf starter and tied with rope around the neck to a post placed under shade. High incidences of calf diarrhea and pneumonia were found in this region. The calves were weaned at 3.24 mo of age. After weaning, calves were fed with concentrate and roughage such as rice straw and hay. Deworming at after weaning to 1 year of age and vaccination for foot-and-mouth disease (FMD) and brucellosis at 6 mo of age. The feeding research: Thirty-six dairy calves were studied on DHA from *Schizochytrium sp.* supplementation affecting on growth performance and health. Repeated Measurements in CRD was assigned each treatment. Treatment had 3 groups (0, 3, and 6 g/h/d of *Schizochytrium sp.* supplementation; 12 calves/group; 80 mg DHA/g *Schizochytrium sp.*). After birth, calf was placed in individual pen. Each calf fed colostrum immediately until 3 days of age. On d 4, all calves were fed ad libitum of calf starter and water. Feed intake, fecal fluidity score and calves cleanliness score were recorded daily. Initial body weight, d 7, d 21 and final body weight were measured. On d 1, d 21 and d 42 fresh blood analyzed for neutrophil:lymphocyte ratio (N:L), serum immunoglobulin G (IgG), serum glucose, serum urea-nitrogen (SUN) was collected. Feed intake (778.8, 763.3 and 758.3 g/d, respectively) ADG (552.5, 552.1 and 557.1 g/d, respectively) FCR (1.49, 1.52 and 1.40, respectively) did not differ ($P > 0.05$). IgG (37.7, 38.6 and 37.6 mg/ml, respectively), serum glucose (159.1, 171.9 and 179.4 mg/dl, respectively) SUN (9.6, 10.17 and 9.6 mg/dl, respectively) and N:L (0.2, 0.17 and 0.16, respectively) did not differ ($P > 0.05$). However, on d 1 IgG and glucose were the highest in 3 groups. Overall N:L decreased when calf was older.

Student's signature

Thesis Advisor's signature