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Effects of Micro-seaweed DHA supplementation on goat kids immune status

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A high variety of food products with enhanced n-3 fatty acid content has been develop in recent years. Dietary modifications are based on the fact that the fatty acid composition of the diet is an important determinant of the fatty acid composition of the muscles and adipose tissue in preruminant animals. An experiment was performed using three different feeding groups of animals with different doses of a DHA source (DHA-gold©, Martek Biosciences): control (milk replacer-MR), low dose (MR-LD-DHA) and high dose (MR-HD-DHA). Blood samples were collected from the jugular vein daily from birth until day 10 of life, and after that, every five days until goat kids reached 8 kg of BW. Blood samples were collected in two different tubes: heparinized for plasma samples and a crystal tube to obtain serum. After collection, blood samples were centrifuged and plasma or serum were frozen in aliquots at -20ºC until posterior analysis. The immune status of the kids was evaluated by the concentration of plasma IgG and IgM, and Chitotriosidase in plasma and complement system activity in serum. A PROC MIXED procedure factorial ANOVA (analysis of variance with repeated measures) was performed to evaluate the effects with the SAS program package. Values ranged between 0.141-15.540 mg/mL for IgG concentration, 0.080-0.965 mg/mL for IgM concentration, 404.99-3934.72 nM/mL/h for chitotriosidase activity, 50.58% and 24.31% for classical and alternative complement system activities, respectively. No significant differences were found among the different groups in any of the parameters measured on immune status. In conclusion, the extra cost of this DHA addition is not justified to improve the immune status of goat kids.