**DIETARY ADMINISTRATION OF OREGANO ESSENTIAL OIL TO NEWBORN DAIRY CALVES IMPROVES FFED EFFICIENCY AND WEIGHT GAIN DURING THE SUCKLING PERIOD**

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EOs are rich in bioactive compounds that can modulate the microbiome of the gut, hence modify the health status and feed efficiency traits when included in the milk replacer (MR) of newborn dairy calves. To test this hypothesis 16 newborn Holstein calves received 3 L of colostrum within 2 h after birth, and then they were kept in straw-bedded single hutches during 45 days. Starting at the age of 3 days, animals were assigned to two groups of eight animals each. The first group was supplied daily 0.23 ml of oregano EO accounting for 200 mg of carvacrol (EO group) diluted in the first 100 ml of milk replacer (MR). The second group (CONTROL) was fed MR (Novilac Turbostart, Schils) with no EO added. Animals were milk-fed using buckets provided with a tip to allow the reflex closure of the oesophageal groove, and MR was gradually increased at the same rate for all the animals until the maximum of 9 L liquid feed (145 g/L MR) was reached. No concentrates were offered and no leftovers of MR remained during this phase, so dry matter intake was similar for all the animals. Animals were weighted at birth and being 45 days-old to estimate average daily gain (ADG). Blood samples were collected at both sampling times to measure the biochemical profile. According to the results observed in the present study, the ADG of the EO group was higher (101 vs. 158 g/d; P=0.027) during the first 45 days of life, so these animals were heavier (44.1 vs. 47.4 kg; P=0.024) and more efficient because they consumed the same amount of dry matter than the control group. These differences were not related to changes in the biochemical profile parameters (P>0.05 in all of them). Further analyses are in progress to verify if this effect is related to modifications caused by EO on the microbiome of the gut, and to identify different patterns in the metabolomic profile arising underlying mechanisms of EO. Also, the long-term effects of EO administration during the milk-fed period will be tested in the replacement phase.