

Book of Abstracts of the 62nd Annual Meeting of the European Federation of Animal Science



Book of abstracts No. 17 (2011)
Stavanger, Norway
29 August - 2 September 2011

Effect of anaerobic enzyme matrix on the digestibility, rumen parameters and lambs growth performance

Gado, H.¹ and Borhami, B.E.², ¹Faculty of Agriculture, Ain Shams University, Animal Production, Shoubra Al-Kheima, Cairo, 11424, Egypt, ²Faculty of Agriculture (El-Shatby), Alexandria University, Animal Production, 11306 El-Shatby, Alexandria, Egypt; gado@link.net

One hundred lambs (initial body weight 18.4 kg±0.12) were used to evaluate the effect of ZADO® (an enzyme mixture of cellulase, xylanase, protease and alpha amylase) on feed intake, animal growth performance, apparent digestibility, and rumen concentrations of volatile fatty acids (VFA) and ammonia nitrogen (NH₃-N). Lambs were randomly divided into two groups of 50 animals each. Basal diet with or without 5 g of ZADO®/animal/d was fed. A growth performance trial of 60-days, ending by a digestibility trial of 21 days for 3 animals within each group, was carried out. Including ZADO® increased feed intake (1.72 vs. 1.32 kg/d; P<0.04), average daily gain (0.38 vs. 0.25 kg/d; P<0.05) and feed efficiency (5.0 vs. 5.1 kg DM/kg live weight gain; P<0.05) and decreased calculated net energy required for 1 kg live weight gain (4.8 vs. 5.3 MJ; P<0.05). Including ZADO® increased nutrients digestibility coefficients and total digestible nutrients (74.1 vs. 68.3%; P<0.06). Including ZADO® increased the digestibility of neutral detergent fiber (57.3 vs. 49.2%; P<0.001) and ruminal concentrations of VFA (meq/l) at 3 h from 75 to 91 and at 6 h from 73 to 82 and NH₃-N at 3 h after feeding from 159 to 175 mg/l (P<0.05). The improved animal performance by inclusion of ZADO® was as a consequence of the improved digestibility and the increase in VFA. In conclusion, ZADO® as an anaerobic enzyme matrix improved the nutritive value the ration.

Effect of dry period length, and lipogenic vs. glucogenic diets on dry matter intake, milk production and composition in Holstein dairy cows

Soleimani, A.¹, Moussavi, A.H.², Tahmasbi, A.², Danesh Mesgaran, M.² and Golian, A.², ¹Islamic Azad University – Kashmar Branch, Department of Animal Science, Seyyed Morteza Blvd, 91888-17717, Iran, ²Ferdowsi University of Mashhad, Department of Animal Science and Excellence Center for Animal Science, Mashhad - Khorasan Razavi Province, 91775-1163, Iran; ak.soleimani@iaukashmar.ac.ir

The aim of this study was to determine the effects of dry period length (35 vs. 20 days) and dietary strategy (lipogenic vs. glucogenic diet) on dry matter intake (DMI), milk production and milk composition in early lactating Holstein cows using a 2x2 factorial arrangement. Twenty-four Holstein dairy cows were housed individually and allocated to 4 experimental treatments: G35: a glucogenic diet with a 35-d dry period; L35: a lipogenic diet with a 35-d dry period; G20: a glucogenic diet with a 20-d dry period and L20: a lipogenic diet with a 20-d dry period. Dry matter intake was recorded daily until 8 week *post partum*. After parturition, cows were milked 3 times per day at 04h00, 12h00 and 20h00. Milk yield was recorded and milk was sampled during 8 weeks *post partum*. Data were statistically analyzed using MIXED procedure of SAS. No significant difference was observed in prepartum and *post partum* DMI among treatments. A significant difference (P<0.05) was found between treatments G35 and G20 regarding milk production and daily yields of lactose, milk protein and milk solids non-fat (38.4 vs. 30.6, 1.79 vs. 1.43, 1.19 vs. 0.96 and 3.29 vs. 2.63 kg/d, for G35 and G20, respectively). Milk fat concentration for G35 was significantly (P<0.05) lower than for L35 (3.66 vs. 4.08%). Week of lactation had a significant (P<0.01) effect on DMI, milk production and milk composition. These results suggest that the mammary gland would require a dry period length of more than 20 days to allow a high milk secretion.