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Effect of omega-6 source on metabolic and hormonal changes in Saanen goat at first pregnancy and lactation

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Abstract

The aim of this experiment was to investigate the effect of consumption of different sources of dietary fat supplemental during the transition period on the concentration of hormones and metabolites of goats. For this purpose, 30 heads of young does, which were in second half of their first pregnancy, were weighted and divided into three groups, 10 goats in each.The first group (negative control) a ration without any source of fat; the second group (positive control) the diet containing palm saturated fat, and the third group received the processed soybean as the source of omega-6 from the last 2.5 months of pregnancy until 4 months after the parturition. During the experimental period, changes in body weight, daily feed intake and the concentration of metabolites (glucose, cholesterol, triglycerid, total protein, albumin, globulin and urea) and hormones (insulin, cortisol, estrogen and progesterone) in serum of each group was mwasured and recorded. Dietary fat supplements had no effect on body weight Blood glucose levels for the omega-6 group were significantly lower than the other two groups ($P<0.05$). Triglyceride, total cholesterol and blood urea for the negative control group was significantly lower than the other two groups ($P<0.05$). The concentration of total protein and globulin blood for the omega-6 group was significantly higher than the other two groups ($P<0.05$). Serum insulin levels for the negative control group was significantly higher than the other two groups ($P<0.05$). Serum cortisol concentrations for the positive control group were significantly lower than the other two groups ($P <0.05$). Serum

estradiol and progesterone levels did not show significant differences among the groups. The results show that the consumption of soybean in the second half of pregnancy and early lactation, in addition to improving the metabolic status of the animal, has a positive effect on the growth and development of mammary gland tissue as well as reproductive efficiency of the animal.

Key Words: Dairy goat, Omega-6, Mammary gland, Metabolite, Hormone