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**Plasma urea nitrogen in relation to pregnancy rate in dairy sheep**

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**ABSTRACT**

The aim of this field study was to investigate the relationship of plasma urea nitrogen (PUN) with the pregnancy rate in lactating Awassi×Merino ewes. One hundred and eighty-five Awassi×Merino ewes were used in the present study. Ewes were fed a diet containing 17.4% crude protein and were milked twice a day by the milking machine. The ewes were synchronized for estrus by insertion of intravaginal sponges containing 30mg flurogestone acetate for 14 days. At the time of sponge removal each ewe was administered eCG (600 IU). All ewes were inseminated twice with fresh semen into the external os of the cervix at 48 and 56 h after sponge removal. The day of insemination was considered as Day 0 for calculating the gestational period. Blood samples were collected from each ewe at Days 0, 18 for measurement of PUN concentrations and at Day 22 after AI for measurement of pregnancy associated glycoprotein (PAG) by radioimmunoassay (RIA). Thirty-eight ewes (20.5%) were confirmed pregnant by PAG–RIA test at Day 22 and by ultrasonography at Day 80. The mean (±S.D.) concentration of PUN in all ewes at Day 0 was 12.7±4.6 mmol/L. There were non-significant differences in the level of PUN between pregnant and nonpregnant ewes at Days 0 (12.2±4.2 mmol/L vs. 12.8±4.7 mmol/L, respectively) and 18 (9.6±2.9 mmol/L vs. 10.4±4.0 mmol/L, respectively) after AI. Mean PUN concentrations decreased significantly from Day 0 to Day 18 after AI in both pregnant and non-pregnant ewes. By using logistic regression analysis, there was no effect of PUN concentrations on the probability of pregnancy occurrence in the studied ewes (odds ratio: 0.97; 95% confidence interval: 0.9–1.05; P = 0.45). In conclusion, there was no evidence of a relationship between PUN concentration and pregnancy rate for lactating Awassi×Merino ewes in the present study because of low pregnancy rate observed.