The effect of ram exposure previous to progestagen oestrus synchronization on corpus luteum function and fertility in crossbred ewes

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Abstract

Merino and crossbred ewes were used to evaluate whether previously ram exposure in late winter could improve the response to further progestagen oestrus synchronization treatment in terms of luteal function and fertilization rate.

Fifty-six adult Merino and crossbred ewes were used randomly and allocated in two groups, control (C; n= 27) and Male Effect (ME; n= 29), which had been isolated from rams for at least 2 months. On the 20th of February and for 5 days (D0-D5), 15 males were introduced into ME group to induce male effect. Oestrous synchronization of animals from both groups began on D20 by the introduction of vaginal sponges containing 45 mg of FGA for 12 days and the administration of 500 IU of eCG on the day of sponge withdrawal (D32). Cervical AI with refrigerated semen (400 x 10^6 spz) was performed 55 h (D34) after sponge withdrawal. Progesterone levels were measured by RIA on blood samples collected twice a week for two weeks before D0, and on days 0, 3, 5, 12, 20, 27, 32, 34, 42 and 52 for ovarian activity evaluation. Blood samples were also collected each 4 hours, during 24 hours, starting 44 hours after sponge withdrawal to identify LH preovulatory surge in 5 animals of each group.

On ME group the number of cyclic ewes on D12 and D20 was significantly (p<0.05) higher than on D0. On D12, the number of cyclic ewes on ME group was significantly (p<0.05) higher than in C group. There were no differences between both groups for the number of ewes lambing and not lambing, as well as for the number of ewes lambing as a result of AI or natural service.

Introduction of rams enhanced the number of ewes cycling but this advantage relatively to the control group did not last until the synchronisation treatment. In spite of this stimulatory effect of rams on ovarian activity, it was not enough to improve the lambing rate achieved at the end of the essay probably because the number of acyclic animals at synchronisation treatment was higher than cyclic ewes. It was concluded that when ewes of this region are in deep anoestrus they do not respond favourably to the ram effect and no improvements on fertility are expected to occur.

Keywords: sheep, ram effect, fertility