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Results of sheep stimulation with a pulsatory electromagnetic field in the period before mating

S u m m a r y

The influence of sheep stimulation with a pulsatory electromagnetic field (PEMF), applied during 3-weeks period before mating, on the reproductive performance, hematological and biochemical indices as well as acid-base equilibrium parameters of venous blood, was determined. A prototype pen, covered with flat coils, was used in the study. The peripheral frequency of the field induced inside the pen was 33 Hz, and magnetic induction varied from approx. 3.5 μ T at the floor to approx. 92 μ T on the surface of the coils. The ewes were exposed to a pulsatory electromagnetic field for 12 minutes, twice a day. It was found that the stimulation of the ewes positively affected their reproductive performance index, and the lambs delivered by these ewes were characterized by a faster growth rate to the age of 70 days. The exposure of the ewes to a PEMF did not cause any negative changes in hematological and biochemical blood indices or acid-base equilibrium parameters. The venous blood of stimulated ewes was characterized by significantly lower level of hemoglobin oxygenation. This suggests the increase of oxygen supply to cells and could affect the reproduction of these ewes.