

STUDY OF THE RELATIONSHIP BETWEEN THE AGE OF THE SPREADERS AND THE QUALITY OF THEIR EJACULATES OBTAINED OUTSIDE THE SEED CAMPAIGN

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The aim of the present study was to researches the effect of age on the quality of ejaculates from rams of the Synthetic Bulgarian Milk sheep.

Material and methods

Animals

The experiment was conducted with four clinically healthy rams of the breed Synthetic Population of Bulgarian Milk (SPBM), divided into two age groups: Group 1 (2.5 years - young) against Group 2 (6 years - mature). A total of 16 ejaculates from a group obtained on consecutive days were examined. The studied ejaculates were obtained outside the insemination campaign of the breed. The nurseries are placed under the same conditions of cultivation and feeding.

Sperm production and analysis

Sperm collection is performed by the method of an artificial vagina by an experienced operator. All obtained ejaculates were subjects to an initial macroscopic

evaluation and those outside the standard requirements were discarded. Immediately after that, each ejaculate was diluted in a ratio of 1:12 with medium 6A, prepared at the Institute of Biology and Immunology of Reproduction "Acad. Kiril Bratanov" - BAS. The obtained ejaculates were analyzed by computer sperm analyzer (SCA, Microptic SL, Barcelona, Spain) to determine the total motility of sperm (TM,%), progressively motile sperm (PM,%), sperm with non-progressive movement (NPM). and immobile sperm (Immotile,%).

Biochemical analysis

The extracellular activity of the enzymes lactate dehydrogenases isoenzyme C4 (LDH-C4, U / L) and gamma-glutamyl transferase (GGT, U / L) was determined in the sperm plasma. Aqueous and newt

extracts were prepared to determine the intracellular activity of both enzymes.

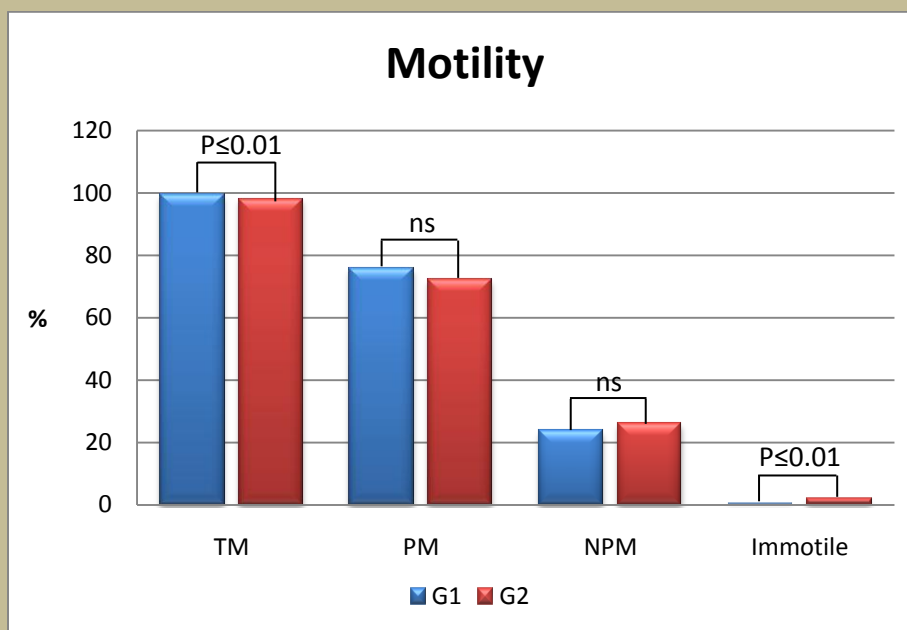
The activity of the enzymes LDH-C4 and GGT was determined by a semi-automatic

spectrophotometer for clinical chemistry BA-88 (Mindray, Medical Germany GmbH, Bensheim, Germany) using a set of reagents manufactured by Via Campania - Italy.

Results

Significant differences between G1 vs G2 are presented in Fig.1. The effect of age outside the insemination campaign of the breed was found only in the total motility (TM) of sperm ($P \leq 0.01$). Regarding

progressively motile (PM), non-progressively motile (NPM) and immobile (Immotile) sperm, no significant differences between groups were found.

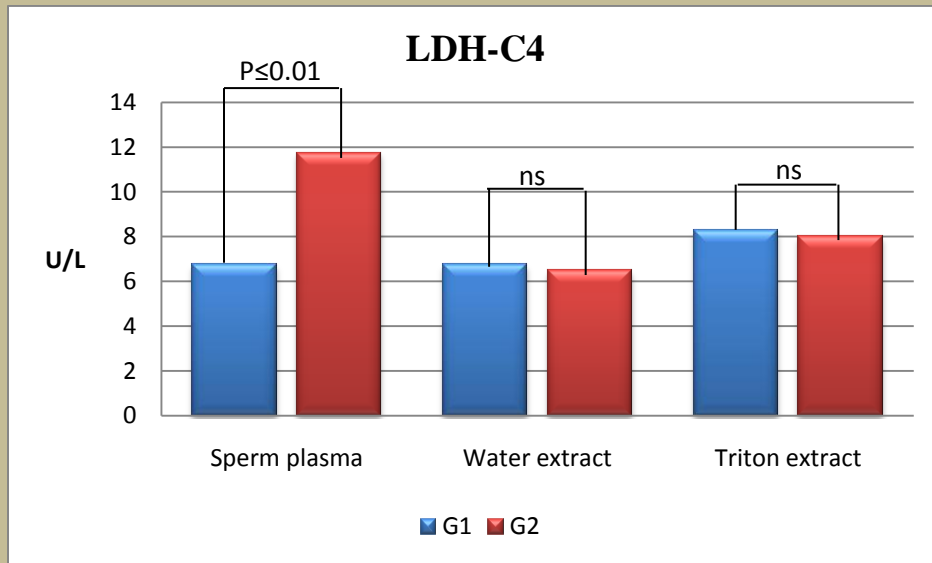


Note: Significant differences ** at $P \leq 0.01$; ns – non significant

Fig.1 Significant differences between the groups

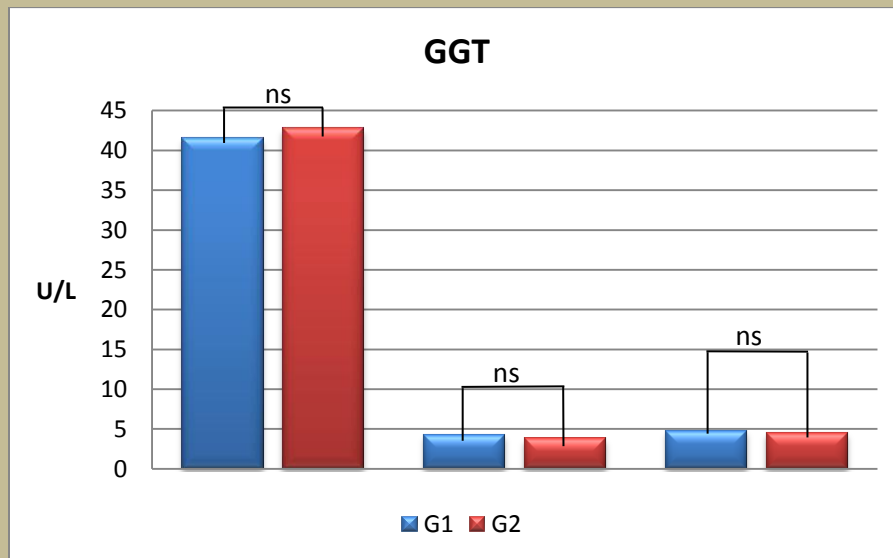
The activity of the enzyme in sperm plasma in young rams (G1) is almost twice lower than in mature rams (G2) ($P \leq 0.01$). Regarding the activity of the enzyme in aqueous and newt x100 extract, the values obtained in both groups are similar.

Significant differences between G1 vs G2 in terms of GGT activity are presented in Fig.3. The effect of age outside the insemination campaign of the breed was not established on the activity of the enzyme.



Note: Significant differences ** at $P \leq 0.01$; ns – non significant

Fig.2 Significant differences between the groups



Note: ns – non significant

Fig.3 Significant differences between the groups

Conclusions

1. The age of rams affects sperm motility in ejaculates obtained outside the insemination campaign.
2. Significant differences in LDH-C4 activity were found only in the extracellular activity of the enzyme in sperm plasma.
3. No significant differences were found between GGT activity.