



## REPRODUCTION

REP-001

### **INFLUENCE OF TRANSPORT TEMPERATURE IN SEMINAL DOSES: BTS VS LONG TERM EXTENDERS**

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The transport temperature of boar semen doses is a critical factor to maintain an optimum seminal quality until the artificial insemination time. The spermatozoa metabolism decreases at 16°C, which favors the preservation of viability for a longer period. Extenders should protect and buffer the harmful effects (capacitation, decrease mitochondrial activity, apoptotic process,...) of temperature changes during transport and storage in sperm cells of seminal doses for an optimal fertilizing capacity. The objective of this study is to evaluate the protective effect of the extenders BTS vs. Long-term against the influence of the transport temperature of seminal doses.

10 ejaculates from 10 different boars were extended each one with BTS and two different long-term extenders (A and B) in 2 different artificial insemination centers. They were transported to Magapor and the temperature during the process was recorded. To evaluate sperm quality, several parameters including viability, mitochondrial potential, acrosome integrity and early apoptosis by flow cytometry and motility by CASA system were analyzed at the reception.

Samples extended with BTS showed significant differences in the doses that had temperature changes during transport in all analyzed parameters: less motility (80% vs. 92%, 91%), viability (75% vs. 94%, 92%), mitochondrial potential (80% vs. 93%, 90,6%), higher percentage of reacted acrosome (27% vs. 9%, 10%) and higher percentage of early apoptosis rate (20% vs. 7%, 9%) (BTS vs. A, B). In doses with continuous transport temperature there are no significant differences although the seminal quality parameters were worse with BTS.

Our results confirm that long-term extenders preserve the seminal quality of the doses in better conditions, in addition to avoiding the sperm damage produced by the temperature changes that may occur during transport. This is due to a better antioxidant and protective capacity of these extenders also in short periods of time.