M III - the alternative extender for short-term boar semen preservation with excellent results

Dr. Carmen de Alba Romero, Minitub Ibérica

Introduction

Porcine semen extenders, for practical and commercial reasons are classified into LONG, MEDIUM and SHORT preservation. But it is shown that the shelf life is relative because there are factors that have a direct effect on the conservation capacity of the diluents: the boar, the production, the storage and transport of the semen doses.

Among pig producers who inseminate with fresh-24 hours semen, is widespread the use of BTS extender, a short conservation extender that maintains the properties of the sperm for 24 hours, maximum 72 hours of preservation. The extender has a limited capacity for semen preservation since it cannot fully control the above factors that are the key for effective semen conservation. As an alternative for BTS there is M III, a short-medium preservation extender which provides more components, especially antioxidants, which sperm need to neutralize harmful factors and to maintain the functionality of the membranes. M III, exerts effective protection against changes in pH, captures free radicals which appear due to oxidation and the spermatic catabolism processes, and ensures a proper osmotic pressure so that the sperm can survive during storage for up to 96 hours. Acrosome integrity is guaranteed throughout the storage period.

Why use M III?

In a study done by the University of Hanover in 2009, seminal doses from a total of 477 ejaculates where analyzed. The doses reached the laboratory 24 hours after collection and dilution. The semen of 282 boars was kept in BTS diluent, while for the remaining 195 M III was used. Figure 1 summarizes the results of motility performed at 24 and 144 hours preservation in the ejaculates diluted in BTS and M III.

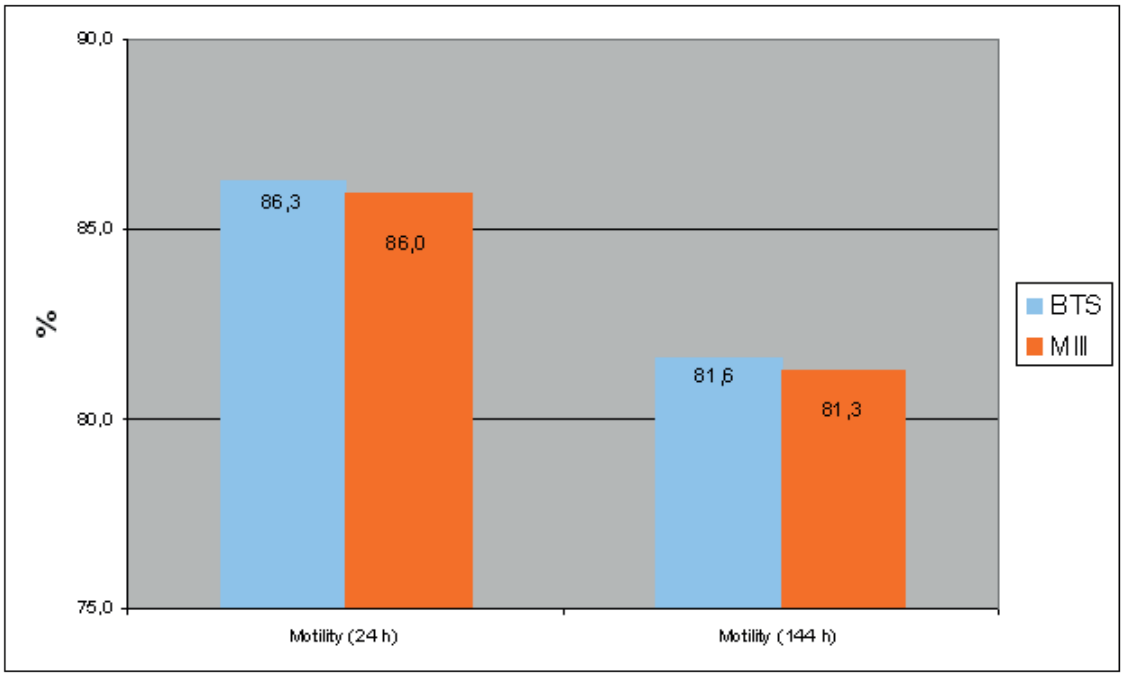

Figure 1

As can be seen in figure 1, sperm motility is identical in the two extenders. The differences were found at the level of abnormal sperm membrane (Figure 2). The percentage of damaged acrosomes after 72 hours is higher in the semen preserved in BTS vs. the M III (7.0% vs. 6.3%) as well as the sperm membrane damage at 24 and 144 h of storage, 16.1 vs. 14.7 and 16.9 vs. 16.0 for BTS and M III, respectively.

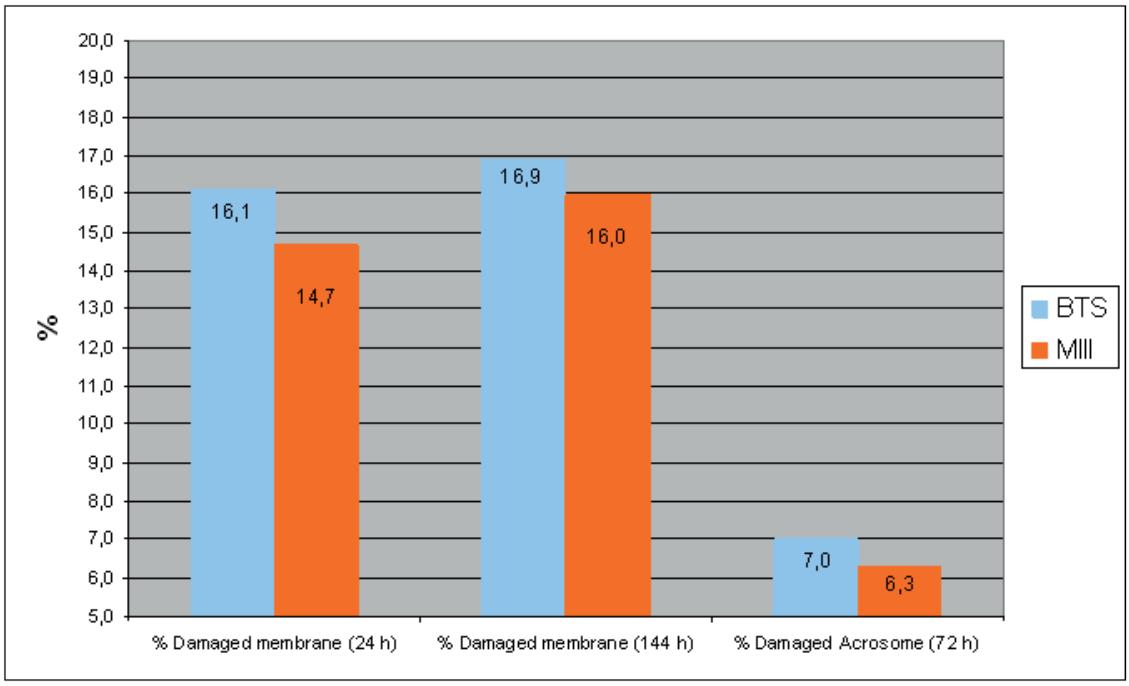

Figure 2

The choice of M III as an extender for the AI in a short and medium term, has the advantage of optimal control of semen physical-chemical parameters, thus regulating the spermatic metabolism, giving sperm membrane stability, and therefore ensuring the fertility and prolificacy results in the specific conditions of each farm.