

Effects of four extenders on the quality of frozen semen in Arabian stallions

ABSTRACT

Aim: Different types of extenders have a variety of components which show the tolerance effect on sperm protection during freezing procedures. In the present study, we have examined the impact of the extenders HF-20 and Tris, which were locally manufactured, and they are competing with commercial extenders INRA Freeze® (IMV Technologies, France) and EquiPlus Freeze® (Minitube, Germany) on the quality of horses frozen semen.

Materials and Methods: A total of 15 ejaculates from three healthy stallions were collected and cryopreserved in the same environment. Each semen sample collected was divided into four equal parts and processed. All samples were analyzed before and after freezing for motility, viability, plasma membrane integrity, and morphology. Furthermore, twenty mares were inseminated using post-thawed semen.

Results: There were no differences observed among all extenders in all the parameters before freezing. Sperm cryopreserved using HF-20 showed better motility, viability, and plasma membrane integrity than Tris extender. The Tris extender showed the most inferior quality of post-thawed semen between all the extenders. HF-20, INRA Freeze®, and EquiPlus Freeze® extenders revealed the same capacity of semen preservation in vitro and in vivo.

Conclusion: HF-20 extender has the same quality as INRA Freeze® and EquiPlus Freeze® that can be considered as one of the best extenders for the semen cryopreservation in horses. In contrast, Tris extender needs some degree of improvement.

Keyword: Arabian stallion; Frozen semen; Semen; Extenders