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Storage of Nguni bull semen extended in coconut water and soybean milk in tris extender

MPV Kalonji, LP Nethenzheni, OA Ajao and **D M Barry**
University of Venda, South Africa

In order to realize many of the potential advantages of AI, storage of semen is necessary. Semen storage is only possible using a system that decreases and/or halts the metabolic processes of the spermatozoa, allowing no significant loss of fertility. Numerous factors affect the success of spermatozoa storage. This study was designed to compare the effects of egg yolk, soybean milk and coconut water in Tris extender using short and long storage period methods for Nguni bull spermatozoa storage. Bull semen was collected from two adult Nguni bulls approximately four years old and kept under similar managerial conditions. Using electro-ejaculator, semen was collected from each bull into a graduated semen collection tube. Macroscopically evaluation of the sample was performed immediately after collection. Only the semen free from contamination was processed. The kinetic properties namely: total spermatozoa motility, and progressive spermatozoa motility were analysed using CASA. Semen sample was stained and spermatozoa morphology and vitality also analysed using CASA. The extended semen was then split into two groups. The first group was stored at room temperature (25°C). The second group was cooled to 4°C for 2 h in the refrigerator, then held in LN2 vapour 5 cm above the surface of LN2 at ~ -80°C for 10 min and then plunged into LN2 for storage at -196°C. Different colours of straws and plugging powder were used for identifying each extender. After 3 days of storage at room temperature and in LN2, the extended semen was split into three portions and assayed for kinetic properties using the first portion. The second portion was assayed for spermatozoa morphology and the third portion for spermatozoa vitality. The results from the fresh semen extended with all three extenders (TEYE, SBME and COWE), and analysed immediately after dilution at room temperature (25°C), showed no significant difference ($P>0.05$) in the mean values of the kinetic and morphologic properties and viability, on spermatozoa TM, PM, AR, AT, CT; BT and LS. After three days of storage, there were, however, significant differences ($P<0.05$) in the TM, PM, AR and DL of the frozen semen samples. For the short storage period of semen used for AI, from this study, it is recommended that semen should be kept at room temperature regardless of the three extenders used. However, for long storage of frozen semen TEYE is recommended. The egg yolk-based extender provided greater preservation of motility and bull spermatozoa integrity during the freezing process than did SBME and COWE.

pievelardkalonji@gmail.com