S11(T)-OP-2

Effect of different additives on post thaw seminal characteristics of Murrah bulls

Rohit Bishist[1], Veerender Swarup Raina[2]

[1]silviculture And Agroforestry, Dr Ys Parmar University Of Horticulture And Forestry, Solan, India

[2]NDRI, Karnal, India

India is home of world's best dairy breeds of buffaloes and country holds great promise in export of germplasm to other countries. Artificial insemination has been used as an important tool for the dissemination of genes to the population in many domestic species including buffaloes. Use of methylxanthines and other additives are to improve post thaw sperm characteristics has been widely employed in cattle. Since, very few studies are available on use of additives in buffalo semen. Therefore, the present investigation was conducted on 24 ejaculates (initial motility >70%) of four Murrah buffalo bulls maintained at Artificial Breeding Complex of NDRI, Karnal. Semen was collected once a week with two successive ejaculations from each bull using sterilized artificial vagina. Pooled ejaculate was split in to five parts for dilution in Tris egg yolk extender with different antioxidants i.e. Control (no antioxidant), T1 Pentoxyphylline @ 3.6mM, T2 Theophylline @ 10mM, T3 Theobromine @ 10mM and T4 n-propyl gallate @ 15 µM. The cryopreservation of semen was done at -1960C and semen straws were sampled after 7 and 30 days of cryopreservation. The results showed that the overall post thaw sperm motility (%) estimates of semen preserved in egg yolk based extender with different additives up to 30 days were significantly higher in pentoxifylline fortified semen sample than other treatment groups. There was no significant difference in overall post thaw sperm motility between theophylline and n-propyl gallate treated samples. Overall post thaw non eosinophilic counts were higher in theobromine and pentoxifylline fortified semen sample than other treatment groups. There was no significant difference in overall post thaw non eosinophilic counts between theobromine and pentoxifylline treated samples. Overall post thaw HOST reacted spermatozoa and intact acrosome values were significantly higher in pentoxifylline treated semen samples followed by theobromine, theophylline and n-propyl gallate treated semen samples. There was significant difference in HOST reacted spermatozoa and intact acrosome values between all treatment groups. Overall post thaw head abnormality values were significantly lower in pentoxifylline treated semen samples followed by theobromine, theophylline and n-propyl gallate treated semen samples. Overall post thaw tail and total abnormality values were significantly lower in pentoxifylline treated semen samples followed by theobromine, theophylline and n-propyl gallate treated semen samples. Significant difference in overall post thaw total abnormality values was observed between all treatment groups. Study revealed that fortification of pentoxifylline @3.6mM improved the post thaw semen parameters cryopreserved in egg yolk based extender.

Keywords: Murrah, pentoxifylline AI