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CAPACITATION OF MAMMALIAN SPERM WITH SPECIAL REGARD TO BUFFALO; PAST AND PRESENT ASPECTS - A REVIEW

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Buffaloes have a fundamental role in many climatically rough agricultural systems as a source of milk and meat products as well as the power of work. The interest in buffalo breeding toward optimizing the reproductive efficiency has been tremendously increased worldwide. The successful buffalo breeding depends mainly on the genetic improvement that can be achieved through the application of reproductive biotechnologies. Many reproductive biotechnologies such as artificial insemination (AI) and in vitro embryo production (IVEP) have been utilized to improve the reproductive efficiency in buffalo. Although the efficiency of the IVEP has greatly increased in recent years in buffalo, the cleavage rate is still low when compared to that in other domestic species. Many factors are known to affect IVF efficiency such as the sperm quality, the bull, the environment, the appropriate time of insemination and appropriate capacitation of sperm. Indeed, the sperm needs to undergo capacitation to acquire its fertilizing ability. This process, which occurs in vivo within the female genital tract, must be induced in vitro. The present review intends to describe the changes which occur during sperm capacitation, emphasizing the different methods for evaluation of the capacitation rate in mammalian species with special regard to buffalo.