

Special Issue

Modern Reproductive Biotechnology Assists Farm Animal Conservation and Genetic Rescue

Message from the Guest Editors

The modern assisted reproductive technologies (ARTs) in farm animals are mainly based on in vitro embryo production (IVP) systems that include three inevitable steps. Similar to other ARTs such as classic artificial insemination (AI), IVF frequently requires the use of cryopreserved or lyophilized spermatozoa, and can either be accomplished by standard gamete co-incubation, or can be assisted microsurgically by intracytoplasmic sperm injection (ICSI) into meiotically matured oocytes. Innovative ART-mediated tools appear to be indispensable to genetically rescue and perpetuate the long-term ex situ conservation of biodiversity in indigenous breeds of various livestock species, including near-threatened, vulnerable, endangered, critically imperiled, vanishing and even extinct farm animal breeds. This SI opens the possibility of publishing research articles, comprehensive reviews and short communications aimed at research highlights encompassing the efficient approaches that enable the protection of genetic resources derived from endangered farm animal species from extinction and to successfully retain the ex situ and/or in situ conservation of biodiversity in livestock species.

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