Mini-Symposium:
Factors Affecting the Sex of Calves and Current and Prospective Sexing Technologies in the Livestock Industry

Preface

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Like many other industries, the livestock industry continues to embrace new technologies. Artificial insemination (AI) and the transfer of embryos (ET) derived from super ovulation or in vitro fertilization (IVF) have become major tools in bovine reproduction, and overall, millions of AI and hundreds of thousands of ET procedures are performed annually in our country. The sex of calves directly affects the economic benefits of beef and dairy farms, and several factors are believed to affect the sex of calves following AI, ET and IVF. Unlike for humans, there are no restrictions on reproduction favoring a particular sex in the livestock industry, and the sexing of embryos and sperm decreases the number of offspring of an unwanted sex. In the past two decades, growing numbers of sexed embryos and sperm have been used to yield female calves for dairy farms and male calves for beef farms. In this mini-symposium, a series of five articles address factors affecting the sex of calves conceived through AI and ET, and discuss current and prospective sexing technologies for the livestock industry. The first two articles, written by Dr. Iwata and Dr. Kimura review the factors underling primary and secondary sex dimorphism following AI, ET and IVF. In the next two articles, Dr. Kageyama and Dr. Hayakawa introduce the novel sexing methods of embryo and sperm that are now widely used in our nation. Finally, the current and prospective technologies for sexing embryos are reviewed by Dr. Geshi. I hope that this mini-symposium will be informative and stimulate your interest in the technologies controlling the sex of animals.