

Application of non-surgical embryo transfer in swine

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In the swine industry, movement of genetic resources currently relies heavily on the shipping of live animals. The high cost of transport as well as the potential risk of disease transmission has made the transfer of genetics in this fashion impractical in many circumstances. The shipping of porcine embryos represents a genetically sound means of disseminating genetic material, however the high cost and technical know-how required for existing surgical embryo transfer procedures in swine have proven prohibitive. Non-surgical embryo transfer (nsET) procedures are preferable from an animal welfare point of view and can be performed on farm without the need for special facilities.

The porcine cervix has generally proven to be a barrier for nsET, but instruments such as the SwinletTM, developed at Wageningen University in the Netherlands, enables a technician to pass embryos through the cervix of a sow and deposit them directly into the uterus. A collaborative research project between the University of Alberta, Wageningen University and Hypor Canada has been initiated to address some of the practical limitations in applying nsET with swine. A research trial has been initiated, during which 19 nsET procedures were conducted using the SwinletTM. Of the 19 sows who were embryo recipients, 10(53%) were found to be pregnant at 30 days of gestation by ultrasound. Continued research in this area will focus on practical aspects of nsET including: improving farrowing rates; producing high quality embryos; storage of embryos; embryo washing methods.

Implications:

Non-surgical embryo transfer represents an efficient and cost effective means of disseminating genetic material in the pork industry. Research in this area aims to provide pork producers with the appropriate tools to efficiently introduce superior genetics into their herds and maintain a competitive advantage in the industry.