Relationship Between Breeding Method and the Fertility of Cooled-Shipped Stallion Sperm

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Mares bred with fresh semen on the farm have 2.4 times greater odds of getting pregnant than mares bred with cool-shipped semen. Fertility is increased when embryo transfer is included in the process. Although cooled-shipped stallion semen is widely accepted in the horse industry, considerable potential remains to improve management of mares receiving cool-shipped sperm. Authors' addresses: Department of Large Animal Clinical Sciences, College of Veterinary Medicine and Biomedical Sciences, Texas A&M University, College Station, TX 77843-4475 (Love, Brinkerhoff, Thompson, Teague, Blanchard, Varner); The Four Sixes Ranch, Guthrie, TX 79236 (Blodgett); e-mail: clove@cvm.tamu.edu. *Corresponding author. © 2011 AAEP.

1. Introduction
Cool-shipped stallion semen is a common and accepted method for short-term sperm preservation to accommodate mare insemination at remote locations. The objective of this study was to determine the effect of breeding method on fertility outcome when embryo transfer was used in combination with cool-shipped stallion semen.

2. Materials and Methods
Semen from 19 stallions (n = 246 ejaculates) was used to breed 914 mares. Breeding methods included (1) bred-to-carry on-farm (F), (2) bred-to-carry off-farm with 24-hour cooled-shipped semen (O), and (3) bred-to-carry off-farm with semen inseminated the same day (SP). Fertility was assessed using first-cycle pregnancy rate (FCP: the total number of mares diagnosed pregnant or from which an embryo was recovered) from the first-bred cycle divided by the total number of mares bred.

3. Results
First-cycle pregnancy rates (FCP) for the different breeding methods were 68% (F); 63% (SP); and 51% (O).
Mares bred-to-carry on farm (F) had a higher odds of pregnancy (odds ratio = 2.451, p < 0.0001) than mares bred-to-carry off-farm with 24 hour cool-shipped semen (O) but were not different from mares inseminated the same day off-farm (SP).

4. Discussion
Mares bred with fresh semen (F) had the same chance of getting pregnant as mares bred the same
day (SP) but were 2.5 times more likely to get pregnant than mares bred 24 hours after semen collection (O).

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