

the removal of the supernatant and sperm resuspension with YG or SM-P. Additionally, processing semen by SpermFilter enhanced PMI compared to centrifuged semen. Fertility rates of poor cooled semen improved by semen processing by SF and resuspended in SM-P or EY.

Keywords: Stallion, extender, sperm kinetics, bad cooler

Pregnancy rates and subsequent pregnancy losses of in vitro produced embryos from oocytes

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Over the past 5 years there has been an increased utilization of transvaginal aspiration of oocytes and intracytoplasmic sperm injection (ICSI) to produce equine embryos. With this increase in demand has come the increase in the number of commercial ICSI labs and in the number of ICSI-produced embryos being shipped to commercial recipient herds for transfer. There are limited data in the literature describing the pregnancy rates and any subsequent pregnancy losses associated with these shipped ICSI-produced embryos. Data were collected from 2 facilities that performed a total of 572 aspirations over 3 breeding seasons and shipped the oocytes to 5 commercial ICSI labs. Embryos produced were shipped to 2 commercial recipient herds. Pregnancy rates and subsequent losses were calculated for 3 of the ICSI labs; 2 of the labs were not included due to a very small number of embryos transferred from these facilities. In total, 208 fresh embryos were shipped for transfer. Fourteen-day pregnancy rates ranged from 41 to 75%; pregnancy loss rates

TVA Facility/ICSI Lab/Year	Embryos transferred	14-day pregnancies	Pregnancies lost
TVA Facility 1/ICSI Lab A 2018	21	10 (47%)	6 (60%)
TVA Facility 1/ICSI Lab A 2019	12	9 (75%)	2 (22%) - 1 due to twins
TVA Facility 1/ICSI Lab A 2020	53	29 (55%)	8 (27.5%) - 3 due to twins
TVA Facility 1/ICSI Lab B 2019	31	15 (48%)	8 (53%)
TVA Facility 1/ICSI Lab B 2020	24	10 (41%)	5 (50%)
TVA Facility 2/ICSI Lab A 2020	21	14 (66%)	8 (57%) plus 2 late term
TVA Facility 2/ICSI Lab B 2019	13	8 (61%)	2 (25%)
TVA Facility 2/ICSI Lab B 2020	14	8 (57%)	1 (12.8%)
TVA Facility 2/ICSI Lab C 2020	19	13 (68%)	2 (15%)

varied from 12.8 to 60% depending on the TVA Facility/ICSI Lab combination and year. Due to the variability in transfer results both between and within the same facilities, more in-depth research needs to be performed to identify the ideal shipping conditions (media, time in transport, etc.) to maximize pregnancy rates and minimize subsequent pregnancy losses.

Keywords: Mare, embryo, ICSI, trans-vaginal aspiration, pregnancy

Incidence rate of reproductive problems in nonpregnant mares

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Broodmares may be affected by a variety of reproductive issues. The goal of this retrospective study was to document reproductive abnormalities encountered in broodmare veterinary

practice. Reproductive records of mares managed at Colorado State University were evaluated retrospectively. Reproductive issues were broadly categorized into abnormalities of the ovary, oviduct, uterus, cervix, vagina, perineum, mammary gland, and behavioral concerns. The abnormalities were then assigned to specific subcategories within each broad category. Reproductive records were evaluated for 636 individual mares over a 3-year period (2018 - 2020). A mare was considered positive for an abnormality if the issue was noted at least once during a breeding season. The incidence rate (IR) was calculated as the percentage of mares with a specific abnormality compared to the overall population of mares. Data are presented as the mean ± standard deviation. A total of 862 mare-years were evaluated, as some mares were evaluated over multiple breeding seasons. The average age of the mare population was 11.9 ± 4.8 years and ranged from 3 to 26 years. The most common breeds were American Quarter Horse (383 mares, 60.2% of total), Warmbloods (all breeds combined) (55 mares, 8.6%) and Arabians (26 mares, 4.1%). Most common ovarian issues noted were after 250 µg of cloprostenol treatment were, persistence of luteal tissue (62 cases; 7.2% IR) and hemorrhagic anovulatory follicles