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Newspaper article

Dr. Reed Holyoak is a theriogenologist at the Oklahoma State University Ranch. A theriogenologist studies animal reproduction and Dr. Holyoak does just that for the University. At the ranch, he conducts research using histopathologic and ultrasonography assessments of the male and female reproductive systems of the large animals like horses and cows that the university owns. Once he assesses the animals, he will then proceed to develop a plan to assist in impregnating the female with a male that had been chosen.

Specifically, Dr. Holyoak focuses on horses. He has a published scientific article over reproduction of equines using the techniques he practices. The article is called Equine Viral Arteritis. According to Dr. Holyoak, a full examination must be done on the mare’s reproductive parts to ensure that the mare has a good chance of conceiving as well as to make sure that she is ovulating correctly. Once he assesses a mare and comes to conclusion that she is ovulating, he will perform an intro fertilization intracytoplasmic sperm injection (IVF ICSI). This entails extracting a mature egg from the mare and fertilizing it by injecting fresh sperm from a stallion into the egg. The fertilization process is done in the lab by lab technicians. Dr. Holyoak and his team pay close attention to the details when collecting a semen sample from the stallion. “We have to go through the process of retrieving the sperm twice all within a short period,” explained Holyoak. He went on further explaining why they do this by stating, “We want the healthiest sperm to be injected into the egg, so the first time they ejaculate it has lots of old, dead sperm in the collection. Therefore, the first ejaculation clears out all the old sperm cells, and makes the second ejaculation only the new ones.”

Once both samples are in the lab, the technician will inject the sperm directly into the egg – which is the ICSI process of the procedure. Dr. Reed compared this process to human IVF transfer, except with humans the sperm does not always have to be directly injected into the egg. They always must for horses because of the structure and permeability of the horse’s egg (Holyoak 2015).

From there when the egg matures into an embryo it will be inserted back into the female horse. Dr. Holyoak and his team will then watch the mare all the way through its pregnancy until it gives birth.

At the ranch, Dr. Holyoak and his team have cameras set up in all the stables so they can keep an eye on the pregnant mares 24 hours a day, every day, which is an important aspect of the reproduction of the animals. Dr. Holyoak pointed out that the mares will give off clues to when they are ready to give birth, and that once they do, the team must be ready for the next week. That is very important, but the most critical factor of watching and keeping the mare is to prevent equine viral arteritis (EVA). It is a respiratory disease that spreads through exposure to another infected animal. It causes abortion in the pregnant mare. Dr. Holyoak has even noticed that it can spread from one infected animal that shows no symptoms and thus will unknowingly infect the uninfected pregnant mare.

 Not only does Dr. Holyoak assist in fertility of the University’s animals. He also takes clients from all over. This way, the ranch supports itself financially rather than relying on the university.

References:

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