



FIRST WOMAN DIRECTOR OF PSEH RUNS TOWARDS CHALLENGES

Raised in a military family, Jamie Farmer has always been driven to serve. So, when she chose to pursue nursing, it was a natural decision. However, while answering an ad to be a barn attendant at renown equine practice Peterson and Smith in Ocala, FL, she found her true calling to serve ... it just happened to be horses, not humans. Now she is regarded as one of the preeminent Intracytoplasmic sperm injection (ICSI) technicians in the country.

Farmer is the first female Director of Peterson & Smith Equine Reproduction Center (PSEH) in Ocala. She's also in charge of all breedings that utilize the ICSI system – a highly complicated, precision breeding method and procedure that leaves no room for error.

"The ICSI procedure involves micro-injection of a single sperm cell into the cytoplasm of a mature oocyte, which physically causes fertilization. The fertilized oocyte is returned to an incubator and allowed to develop into an embryo, which usually occurs within 6-8 days. Because the preservation of semen is essential in many situations, we can talk about options for maximizing the use of semen. These options include refreezing sperm in small numbers in straws specifically designed for ICSI or cutting a small portion of a straw under liquid nitrogen," outlines Farmer.

"Because ICSI utilizes a single sperm cell for each oocyte, this procedure holds tremendous potential for the production of foals using semen from stallions with low numbers of sperm or poor sperm quality," she adds.

Under the watchful eyes of Reproduction Center resident veterinarian and breeding expert Philip Matthews, DVM ('81, CSU), Farmer oversees all aspects of assisted reproduction at its 100-acre facility in Summerfield, FL. Since its inception in 1999, the center has solidified a reputation of providing the most current services the industry has to offer to their clientele. When famed European reproductive specialist, Professor Cesare Galli, a founding member and Managing

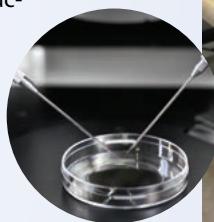


Jamie Farmer, Director, Peterson & Smith Equine Reproduction Center

Director of Avantea, the European leader in the field of assisted reproduction of equine and farm animals, contacted P&S to form a partnership utilizing its ICSI mediums and technology. Farmer was tagged as the representative to go to Italy and learn the process and procedures.

"I was intimidated at first to be in the position to learn and bring the technology back to the clinic, but

I knew I was up to the task and had the desire to learn the new technique," recalls Farmer. "After a month of intense training, I came back to the Reproduction Center and started working with our own recip herd refining the procedures. Not until I felt comfortable with



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Farmer spends hours of time behind the microscope to assure single sperm procedure is successful



According to Farmer, the number of frozen semen tanks keep growing as technology increases

all the processes and science, did we offer it to clients interested in the new breeding technique. It has been extremely beneficial to breeders and horse owners."

Farmer explains the ICSI process. "After Dr. Matthews harvests oocytes directly from the ovaries, I place them in a specific media overnight in a gas incubator to mature them. The eggs that successfully mature are then ready to be injected with a sperm cell (ICSI) to be fertilized. The injected egg is then introduced to another media, placed back in the incubator and the end result will hopefully (and often is) an embryo that is then available to transfer into a recipient mare."

Farmer adds, "The two specific circumstances make this process a viable option for breeders is **mare driven**. Mares that become unsuitable to carry their own foal may also become unsuitable for embryo transfer due to uterine or cervical issues. Because this process bypasses the uterus of the mare completely, it can work very favorably with these mares. The other reasons are **semen driven**. The semen may possess poor fertility due to motility of the sperm, but the sperm may still be capable of producing fertilization (and live foals) when utilizing sperm

injection (ICSI). Or there may a limited amount of frozen semen from a deceased stallion that would be able to produce few, if any, pregnancies utilizing normal artificial insemination. However," she adds, "using this technique, there is now enough semen to literally produce hundreds of pregnancies."

What makes Farmer one of the best in the industry is her calm and steady focus. "The work behind the microscope is highly tedious and your focus needs to be on the procedure, nowhere else," states Farmer. "I seem to have the ability to phase everything out and do the

procedure – regardless of the time it takes. That's partly why we have had such a high success rate with ICSI. The success is in the details."

She admits it's not always easy, especially with her responsibilities of two children (ages 12 and 18), her office duties, scheduling responsibilities, client questions, working with frozen semen, etc.

"It takes someone who can handle the controlled chaos on a daily basis during the busy breeding season," she says. "The joys of seeing a client's ICSI foal and knowing you had something to do with that life is certainly worth all the long hours. It gives you reason and purpose."



Jamie Farmer and Philip Matthews, DVM

