

Jason Bruemmer is a professor at Colorado State University, working with breeders, owners, clients and students to increase their knowledge of equine



reproduction and management. Stallion physiology and management are major fields of interest to Dr. Bruemmer as he heads up the Stallion Services. As a researcher, Dr. Bruemmer has published over 40 scientific articles and served as visiting scientist at Massachusetts General Hospital at the Harvard School of Medicine.

The issue:

You are in the horse breeding business. Specifically you are a stallion owner and are determined to make this the most efficient program possible. It seems as though technology changes daily – producing products and services that may actually be very useful. On the other hand, you have noted that others in this industry are slow to take advantage. Your dilemma is in deciding which, if any, technology to employ. What is it that will help you succeed and why are others not doing the same? Are you a visionary...or missing something that is so obvious to others?

Assessment:

Two major factors play into the final decision process. The first of these has to do with the stallion. Each stallion should be considered individually and evaluated based on two parameters. First, before any breeding season and any breeding decisions are made it is imperative that a breeding soundness evaluation (BSE) is performed. The BSE will include such things as incorporation of that stallion's breeding history and his current health. Most BSEs will include two collections of semen for evaluation and comparison. Briefly, a proper evaluation will examine the reproductive tract of the stallion, testicular size and consistency, sperm numbers, semen volume, motility estimates and assessment of sperm morphology. This should provide you with an accurate prediction of that stallion's semen quality and thus

'potential' fertility and an estimate of his daily sperm output (DSO). The stallion's DSO will be very useful in determining which reproductive management practices and technologies you employ. It is important to restate that each stallion should be evaluated annually as the results of the BSE can and do change with stallion age. The second item has to do with the stallion's current use. Is he still performing? If so, what is he doing and when is he available for reproductive procedures...etc? Are there breed association restrictions? Armed with this type of information you may evaluate your second set of factors.

The second factors are those related directly to you. One must be honest with their role in the process. Is standing stallions your fulltime job? Is it a part time job? Are you an owner, trainer, both....etc? These questions help in deciding how much time you have to dedicate to this endeavor. You must also consider your location and access to overnight delivery companies. Will you be providing services/semen to others? Where are your clients located? Do you plan to care for mares? If so, how many...etc? The answer to these questions may be as important as those queried for the stallion when deciding how to manage this breeding season and which technologies you will be using.

Available Technologies:

The possibilities are almost endless with regard to tools available. One can truly manage stallions with as little input as pasture breeding or provide services so complex that might allow for the injection of a single sperm, sorted for sex following frozen storage from an epididymal harvest from a dead stallion. It is also of great importance to remember that just because the technology exists, it is not necessarily the best answer for your situation. In most cases, the simpler the better, as success rates are higher and costs are lower.

Below is a brief list of reproductive management tools that one might consider:

- Live cover
 - Hand breeding
- Pasture breeding

- Semen collection
 - Jump mare
 - Phantom

- Semen use
 - immediate use
 - cooled/shipped
 - cryopreserved

- Added value – sex sorted

- Alternative semen collection techniques
 - Ground collection
 - Chemical ejaculation
 - Epididymal sperm collection

- Delivery of semen
 - Artificial insemination
 - Routine transcervical
 - Deep-horn insemination
 - Rectally guided
 - Endoscopically guided
 - Intracytoplasmic Sperm Injection

Solution:

Proper and honest assessment of your specific situation, which may be different by stallion, will lead you to the correct and most efficient solution. One cannot assume that the same solution will work for all stallions or stallion managers. This is a dynamic decision-making process, requiring annual evaluation and input.