

Artificial insemination (A.I.) is the method of collecting semen from a stallion using an artificial vagina (A.V.), processing the semen and inseminating one or more mares from a single ejaculate (collection). Artificial insemination is a very efficient and practical method of breeding nervous or aggressive mares, valuable mares, or large numbers of mares during the breeding season. Good facilities and equipment are essential. The collection, insemination, and laboratory areas must be clean, safe and sturdy. Artificial insemination has the distinct advantage of being a completely controlled breeding method. It is more labor intensive and strict attention to detail and procedures is essential.

CSB uses the breeding phantom (mount dummy) to collect the stallion that is seen in the picture. The breeding phantom is a well padded, sturdy artificial mounting device resembling the pommel horse used by gymnasts.



The use of a phantom is ideal in most breeding programs, although some stallions may refuse to mount and ejaculate on an artificial or "fake" mare.

The obvious advantage of using a phantom and A/I collection is the reduced risk of injury to the stallion, mare and handlers and less chance of infection to the stallion or to the mare.

The proper equipment for semen collection, evaluation and insemination is essential for a successful A.I. program. The appropriate artificial vagina with non-spermicidal (safe for sperm) accessories are needed for collecting semen. There are several different types of artificial vagina, but all consist of a hollow tube with a rubber lining that can be filled with warm water and a collection receptacle such as a bottle or whirl pack with a filter to separate the unwanted gel fraction from the semen. An insulating cone or cover for the collecting bottle is also advisable.

To evaluate the semen a microscope and counting device such as a hemocytometer or spectrophotometer are necessary to determine the percent motility and semen concentration for each sample. An incubator is essential for prewarming the laboratory instruments and supplies. (37 C, 100 F) to limit the exposure of the sperm to detrimental temperature variations. Sperm cells are especially sensitive to environmental factors such as water, temperature changes, residues, air, etc. Anything which comes into contact with the sperm must be sterile, free of detrimental residue, and prewarmed in an incubator. The devices used at CSB are in the following picture:



The collection process requires a minimum of two people; the stallion handler, and the semen collector. When the stallion mounts the phantom

dummy the penis is deflected into the A.V. by the collector. After ejaculation the A.V. is tilted downward to allow semen to run into the collection bottle or bag. Next the entire unit is taken to the lab.

In the laboratory the semen is analyzed for motility and concentration. After extension in a suitable medium (protecting solution), the semen is either inseminated into a mare or divided and used to inseminate more than one mare. If shipping, the semen is packaged into a cooling system for transport.

On premise artificial insemination has several advantages. Valuable stallions or a valuable mare will not be directly in contact with his or her mate during the breeding process thereby decreasing the risk of injury to either party. The spreading of an infectious disease is greatly reduced with artificial insemination since the mare is inseminated by a veterinarian wearing a sterile shoulder length glove using all sterile equipment. The mare is safely held in a specially designed breeding stock. The one used at CSB is seen in the following picture:

