While the breeding season is mostly over in the Southern Hemisphere, healthcare and management of breeding horses continues all year, and involves more than looking after the pregnant mares and growing foals.

Year-round management of the stallion's health for fertility and breeding soundness will maximise the chances of a successful breeding season.

This month, Equine Dental Vet Dr Polsen explains some of the management factors that can influence fertility and how veterinarians assess a stallion's suitability as a breeding animal. Later, Drs Chopin, Gunn and Rodgers talk in more detail about chilled semen and artificial insemination.

Stud Stallions

Good stallion management is imperative to maintaining a stallion's physical health, libido, longevity, attitude and behaviour as well as sperm production. While housing of stallions varies according to personal preference, stallions should not be maintained in isolation and should be able to see other mares and stallions where possible.

Exercise requirements vary considerably with each individual stallion. Some stallions if given the opportunity will exercise freely, while others prefer to graze or stand quietly in the paddock and forced exercise is required. Appropriate exercise should be determined according to soundness, body condition, age, temperament and environmental factors such as temperature.

Exercise may negatively impact on seminal characteristics. There is little information concerning the nutrient requirements of the stallion or the impact nutrition has on breeding soundness, however we do know that it is important to maintain appropriate body condition. The most common error made is over feeding, where stallions are allowed to become obese, which can negatively impact on behaviour, longevity and libido. There is also evidence to suggest that fat stallions are more prone to colic, laminitis, behavioural problems and decreased longevity.

Assessment of breeding suitability

An evaluation of a stallion for potential fertility begins with a breeding soundness examination, which can be divided into four parts:

1. History and assessment of breeding records, general physical examination,
2. Examination of external reproductive organs,
3. Examination of internal reproductive organs (performed occasionally), and
4. Semen collection and evaluation.

During the general physical exam particular attention will be given to the stallions ability to approach and successfully mount the mare. Conditions that adversely affect the stallions ability to mount usually involve the musculoskeletal system of the back and hind limbs and should be corrected before psychological problems develop and the stallion refuses to mount due to the pain associated with breeding.

If conditions such as cryptorchism, combined immunodeficiency, parotid, haemophilia, cataracts or wobbler syndrome are identified, The Society for Theriogenology's manual for clinical evaluation of a stallion advises that these stallions should be considered ineligible as sires due to the heritability of these conditions.

The external reproductive organs should be examined both visually and manually, looking for debris, lesions or scars, on the penis or prepuce, any trauma or injury can be detrimental to the stallions ability to cover a mare.
Breeding evaluation cont.

The scrotum should be soft and pliable to touch encasing the testes which should move freely within the scrotal sac. Symmetry, consistency and size in particular will be noted, as testicular size directly correlates with daily sperm production. Examination of the internal reproductive organs should involve palpation and trans-rectal ultrasonography of the accessory sex glands however lesions in this area are uncommon.

Semen evaluation

An accurate assessment of semen quality depends on proper semen collection techniques due to the semen’s susceptibility to environmental influences and mishandling. The ejaculate will be assessed for its gross appearance, gel volume, frequency and consistency. Colour changes may be associated with blood, urine or pus within the ejaculate. An accurate measurement of sperm concentration is critical in calculating total sperm number and is one of the most important measurements used to estimate a stallion’s fertility.

Semenal pH should be measured within 1 hour of collection and should be slightly basic. Sperm motility reflects viability and should be determined as soon after collection as possible. This may be achieved using a microscope or computer assisted semen analysis system. Sixty percent progressively motile spermatozoa is considered good, anything below 60% is questionable.

Sperm morphology can be determined by microscopic evaluation of stained smears or preferably, phase-contrast microscopy. Abnormalities such as bent tails, no heads, no tails, double heads and immature sperm cells and record the number. Not all of the exams listed here are routinely used and the situation will dictate which ones are actually used.1

When evaluating a stallion as a potential breeder or investigating fertility issues it is important to be critical, but remember that stallion fertility is best reflected by the pregnancy rate per cycle.

References:

Stallion Behaviour: Did you know?

Prancing and vocalisation are normal responses made by a stallion that has seen a mare and should never be discouraged. Nipping and striking are less welcome and can be modified by negative punishment whereby the stallion is led away from the mare or the dummy as an immediate consequence of their responses.1 Aggression by stallions during sexual congress is associated with freshness at the time of the first mountings of the season2 or failure to ejaculate.3 overseer at stud can also result in a stale attitude that manifests as aggression to both mares and handlers.4 If aggression does emerge in the behavioural repertoire of a stallion, it is paradoxically preferable for personnel that he is consistently aggressive rather than unpredictable.

Hyper-reactive and so-called frenzied stallions benefit from management changes that help to resolve fizzy riding horses. Turn-out and reduced grain intake are especially helpful when used in combination with behaviour modification (training) and are always worth trying before hormonal approaches, e.g. use of progesterone or tranquillizers are attempted.

If safety can be maintained, increased contact between mares and stallions can reduce the prevalence of unwelcome behaviours in stallions and improve herd fertility.

References: