

# Reproductive management of fillies in training

Many trainers will have experienced difficulties managing fillies that show strong or abnormal signs of being in season, either whilst in training or at the racecourse. In this article, I will briefly describe the reproductive cycle, explain the different techniques for managing the reproductive cycle in training and discuss some other reproductive considerations when training fillies.

## Reproductive cycle

The majority of fillies and mares are seasonally anoestrus breeders. This means that for the most part they only cycle during the spring, summer and autumn and then the ovaries shut down during the winter months. When they start cycling in the spring (and when they shut down in the autumn) there is a transition period which consists of a number of false starts where follicles on the ovary grow and recede in waves but do not ovulate. This can lead to fillies being permanently in season for a number of weeks, or showing irregular patterns of being in season at this time of year. Once they have had their first ovulation they usually fall into a cycle where they ovulate every 21-22 days. Fillies are typically 'in season' (oestrus) for the 4-6 days prior to ovulation and 'out of season' (dioestrus) for the remainder of the cycle.

When a filly is in oestrus, she produces oestrogen from her ovaries. This hormone can cause changes in the filly's behaviour so that she shows all the signs of being receptive to a stallion. These include clitoral winking, squirting urine, leaning in towards colts and standing fixed or posturing. When a filly ovulates at the end of the oestrus period, a follicle on the ovary ruptures to release the egg which makes its way towards the uterus. This ruptured follicle then forms the corpus luteum, which produces progesterone. This hormone is dominant during the dioestrus period and can alter the behaviour of the filly dramatically so that she shows none of the above signs and is not receptive to stallions. It is remarkable that only 4 nanograms per ml of blood (1 billionth of a gram) of this hormone can change their behaviour in such a dramatic way.



Figure 1: A follicle prior to ovulation. The cells around the margin of the follicle produce oestrogen

Many of the behaviours described above are physiologically normal for fillies and mares when they are in season and as such, when the behaviours are considered excessive or abnormal, care should be taken to ensure that there are no other potential causes of the signs being displayed before manipulating the reproductive cycle. For example, a reluctance to go forward may also be related to gastric ulcers or an orthopaedic issue. Consideration should also be given to non-reproductive behavioural issues such as young fillies displaying submissive behaviour to other horses.

At the simplest level, if you are dealing with a filly that has become difficult to train because of overt oestrus behaviour, it is worth keeping a diary of when the filly shows signs of being in season. If it is for 4-6 days out of every 21 days and the signs are mild, it may be sufficient to monitor this and plan training and her racing programme around it. If the filly shows prolonged signs or excessive signs of being in season, a detailed reproductive examination and an ultrasound examination of the ovaries and uterus

is recommended to establish if the filly is either transitional or has a more complex reproductive issue.

## Veterinary intervention

Similarly to colts showing stallion-like behaviour in the presence of fillies, it is worth noting the presence of colts may induce fillies to show more overt signs of oestrus behaviour. Separation of fillies from the sight and smell of colts may improve this. When, despite separation and general yard management, a filly's reproductive behaviour affects their training, the focus is then to try and temporarily prevent her from coming into season. This can be done by several methods:

## Management of the reproductive cycle

There are a number of drugs that can be used to manipulate the reproductive cycle. These include the use of prostaglandins to shorten the cycle and bring forward the onset of fillies coming into season and the use of ovulating agents that can shorten the oestrus period. Ultrasound scanning of the fillies in combination with these drugs can be

used to 'manage' their cycles to avoid them being in season when racing.

## Intra uterine devices

Marbles, small plastic balls and the commercially available iUPOD's have been used for many years to try and delay the return to oestrus. They are placed in the uterus within 48 hours post ovulation. In one study the use of iUPODs was shown to be 86% effective at extending dioestrus for an average of 74 days. Though there is no evidence to show any adverse long-term effects on the uterus, I typically recommend removing the devices if the filly is out of training for any length of time. Glass marbles should not be used in case they are broken or damaged.



Figure 3: IUPOD's which can be placed in the uterus to prolong dioestrus

## Oxytocin

The daily use of oxytocin from days 7-14 days post ovulation has been shown to inhibit breakdown of the corpus luteum and therefore prolong dioestrus in over 60% of mares. Given the relative safety of the drug and its short detection time, this is a useful technique for the suppression of oestrus.

## Plant oil

There is evidence that plant oils placed in the uterus at around ten days post ovulation can prevent the breakdown of the corpus luteum such that the typical return to oestrus is delayed. This technique requires multiple reproductive scans to achieve and is reported to last two to three months.

## Altrenogest (Regumate)

This is a synthetic form of progesterone. As this hormone is dominant to other reproductive hormones it suppresses any oestrus like activity. It has historically been useful for managing excessive oestrus behaviour, however, since 2018, after the discovery of small amount



Figure 2: The ovary of a mare with a large corpus luteum which produces progesterone during dioestrus

of the anabolic steroid trenbolone in the product, it has been classed as a 'Prohibited At All Times Substance' by the BHA so can no longer be used in racehorses.

## Vaccines

Vaccines are available against GnRH, a hormone critical to mares' reproductive cycle. These can suppress ovarian activity for a prolonged period. However, these products are not licenced for use in horses and they should never be used in young fillies intended for breeding. The use of these vaccines is not permitted under BHA rules.

## Other reproductive considerations when managing fillies in training

**Pain from ovulation** - there are a number of reports describing pain from the ovaries post ovulation. Anecdotally, this is more common in younger fillies that may resent manipulation of their ovaries when performing reproductive examinations. Pain relief may be indicated and, where any behaviour associated with this persists, suppression of oestrus as described above may be indicated.

**Poor vulval conformation** - though more common in older mares, some fillies may have a vulva that slopes forward or has poor conformation that allows air to be sucked in when exercising. This can lead to some discomfort and bacterial contamination of the uterus. If indicated, a Caslick's procedure can be performed to resolve this issue.

**Granulosa cell tumour** - these are benign tumours that typically affect one ovary. The average age for them to occur is 11 years but they can occur in horses of any age. The filly or mare may show a range of clinical signs, from

stallion-like behaviour and aggression to persistent signs of oestrus. If the ovary is enlarged, the filly may show signs of discomfort with pain from the ovarian ligament. Rectal ultrasound will typically show one enlarged and one smaller ovary and blood test is available to confirm the diagnosis. Treatment is by removal of the ovary after which the filly will typically cease any abnormal behaviour and will have a good prognosis for breeding.

**Pregnancy** - depending on their reproductive maturity, fillies can successfully be bred whilst in training. They will need bloods and swabs taken to ensure they are free from venereal diseases and that they fulfil the requirements of the HBLB Codes of Practice prior to visiting the stallion. The BHA should be notified within 25 days of the filly becoming pregnant and a horse must not be run more than 120 days in foal.

## Summary

If you are dealing with a filly displaying abnormal behaviour, a thorough clinical examination and an assessment of the filly's history and environment will help to rule out any non-reproductive issues. If a subsequent assessment and ultrasound examination of the reproductive tract does not find any specific cause of the abnormal behaviour, then there are a number of options to help manage the filly's cycle to allow them to be successfully trained.

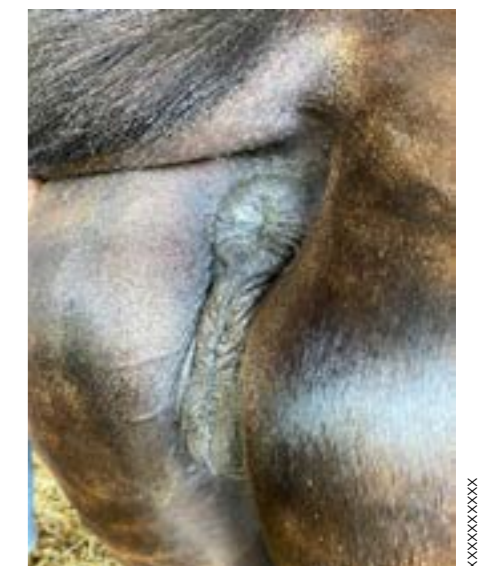


Figure 4: A mildly sunken anus and sloping forward vulval conformation. The level of the back of the pelvis relative to the vulva will be important in deciding if a Caslick's is appropriate