



VET NOTES

FEBRUARY 2006

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Common medications used to assist breeding, cycle regulation and pregnancy maintenance of the mare

In order to successfully and economically breed mares, we employ the use of different medications to increase our efficiency. This includes converting the transitional mares, bringing mares into heat, getting them to ovulate, and keeping them pregnant.

TRANSITIONAL MARES

Mares are seasonal breeders meaning that many of them stop cycling during the winter months. This period of non-cycling is known as anestrus. Transitional mares are the mares starting to go from anestrus to cycling again or having ovulatory cycles. The reason for anestrus relates to light exposure. The **only** way to change a mare from anestrus to cycling is to lengthen the photoperiod. There is no drug alone that can do this. Light affects hormones in the brain that ultimately regulate the mare's cycle. An ideal photoperiod consists of 16 hours of light per day. An entire day of light will not work. Turning lights on before dawn is less effective so it is imperative that additional hours be added to the evening. Ovulatory cycles begin around 6-8 weeks after lighting regimen has begun. Light should be initiated by mid-November to December for mares to be cycling well by February.

Once in transition drugs can be added. The drug sulpiride works once the mare is transitional and can speed up the transitional period. Sulpiride can reduce the 8-week period of light treatment by approximately 3 weeks. This leaves only a 5-week period of transition. It is thought that domperidone works in a similar manner but is currently too expensive for practicality. Regumate may also be administered once mares are in late transition to manage their cycles. Regumate is “synthetic progesterone” that can be given orally once a day. During administration the ovaries are partially “shut down”. Once a course of Regumate is stopped, the ovaries will

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“rebound” creating heat and an ovulatory follicle in 3-6 days. Injectable progesterone in oil can also be used for this purpose.

INDUCING OVULATION (CYCLING MARES)

Once mares are cycling certain medications can be used to help optimize breeding strategy. Ovulatory agents allow mares to be bred as few times as possible and as close to ovulation as possible. HCG is human chorionic gonadotropin and is harvested from human placenta. Mares must be cycling and have a 35mm or greater follicle in order to respond in a predictable fashion. Ovulation occurs within 36 hours in a high percentage of mares. HCG does not work as well on some older mares (>17 years). If older mares don't get in foal after a couple of uses, an alternative product may be used. Another medication, Deslorelin, offered as an implant (Ovuplant) will cause ovulation at approximately 42 hours if given to a mare with a follicle of 35mm or greater. Predictability is enhanced greatly by following cycles from the beginning. It can be very difficult at times to tell where a mare is at in her cycle on first exam. By tracking the growth of the follicle from the beginning of the cycle, ovulatory agents can be given as soon as the appropriate size is reached. Ovulations can be “pinpointed” to maximize conception rate.

SHORT CYCLING

Shortening the length between heat cycles and the waiting period following missed ovulations is a major goal in broodmare management. This can be achieved by use of prostaglandin (PG) and its affect on the CL. Once a follicle has reached an appropriate size on an ovary, it will ovulate and release an egg. The remaining structure is called the corpus luteum or CL. The CL produces progesterone, which keeps mares from returning to heat and maintains pregnancy. Prostaglandins work by lysing or destroying the CL. When the CL is destroyed there is no more progesterone production and the mare can return to cycling. Mares not pregnant will release their own prostaglandin to destroy the CL after a period of time. In the meantime we can speed up the process by giving prostaglandins. The most commonly used product is Lutalyse.

It is extremely important that the CL is mature (at least 6 days from ovulation) for the prostaglandin to work, because the CL may only be partially destroyed. Sometimes one shot of PG is not enough to completely destroy a CL, and another must be given. Instead of only giving one shot and checking the mare two days later, a more efficient management routine would be to administer two shots of PG back to back and check the mare the next day. If another shot has to be given, you're waiting even longer for the CL to be destroyed and for the mare to come into heat.

Prostaglandin can be given for short cycling mares following foal heat. It is helpful to scan the mares and know exactly when ovulation occurs before giving PG. This way 7 days can be safely counted before PG administration. Normal side effects of prostaglandin include temporary sweating and mild colic. Estrumate (cloprostenol) although more expensive, has fewer side effects. It is also important to realize that PG does not bring anestrus mares into heat, and it will abort a mare in early pregnancy.

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SYCRONIZATION OF ESTRUS

Estrus synchronization from a management standpoint allows us to put mares exactly where we want them in order to maximize effort and efficiency. Some reasons for estrus synchronization in mares include embryo transfer programs, grouping mares for shipped semen, and scheduling breedings. A mare is considered diestral when she is between heat cycles and not showing any signs of heat. A great deal of time is spent on teasing unreceptive diestral mares. Diestral mares can be brought into heat with prostaglandin, but more effective methods of synchronizing heat within a group of cycling mares are available.

Regumate can be used in two ways, alone or with prostaglandin administration. In a group of mares given Regumate, the last mare to go out of heat will need at least 14 days before she is able to return to heat again. In other words, the rest of the group is closer to approaching heat, and she is behind. This mare will require 14 days of Regumate before she is ready. Another approach involves giving prostaglandin on the last day of Regumate treatment. This combination can shorten the period of time Regumate is given to the last mare by seven days. At seven days out prostaglandin is able to lyse the mature CL returning the mares to heat. Another method of synchronization instead of Regumate includes the use of progesterone with estrogen to further “shut down” the ovaries. Remember that it is a rebound in hormones once the drugs are withdrawn that drives cycling. Injectable progesterone may also be used but is not as predictable. The method chosen to synchronize mares should be based on what’s practical and economic from a management standpoint (injections v/s Regumate).

SUPPRESSING OR INDUCING HEAT

Preventing estrus in performance horses is sometimes desirable to control estral behavior. Both regumate and progesterone injections including progesterone with estrogen are effective. Ovuplant can be used as another method in suppressing heat.

Inducing heat in jump mares is important for collecting stallions. It may also be needed for mares covered naturally that won’t accept a stallion. By giving estrogens such as ECP (estradiol cyprionate), the mare should show heat within 24 hours.

PREGNANCY MAINTENANCE

Since early pregnancy depends on progesterone release from the CL, any event causing damage to the CL may terminate the pregnancy. Some stimuli that may release prostaglandin in the mare include endotoxemia from colic and cervical manipulation. Oral or injectable progesterone supplementation is very important in mares exposed to any endotoxic event during early pregnancy. It may also be used when twins are pinched.

Later in pregnancy there are other sources of progesterone production including the fetal-placental unit. Somewhere between 120-150 days placental sources completely take over. As gestation advances, the chances of lyses of the CL decreases, but prostaglandin can still cause uterine contractions leading to abortion. In later pregnancy Regumate and Clenbuterol treatment help with mares showing any signs of pending abortion by their influence on uterine contractions.

Announcements

The University of Florida, Marion County Extension is holding the Second Foaling Workshop. It will take place on February 7th, 2006, 8:30 am - Noon, at the Marion County Agriculture Center.

The program will be:

- Broodmare nutrition: Feeding the pregnant mare and foal
- Knowing the risks: Foaling and neonatal illnesses
- New updates and guidelines: broodmare and foal vaccinations

The speakers are:

- Kelly Spearman, UF Department of Animal Sciences
- Dana Zimmer, DVM, UF/IFAS Extension Vet
- Mark Shuffitt, Marion County Extension

There is no charge for the workshop but reservations are required. Please call Helen at 671-8400

- June 2004 - Equine first aid
- May 2004 - Bacterial pneumonia in foals
- April 2004 - Digital radiographs
- March 2004 - Colic in the post-foaling broodmare
- January 2004 - Lameness and poor performance
- December 2003 - Internal parasites - the hidden battle
- November 2003 - Equine tapeworms - The forgotten parasite
- October 2003 - Blister beetle poisoning
- September 2003 - The horse owners' role in wound care
- August 2003 - West Nile update: Broodmare vaccinations

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