BREEDING THE OLDER MARE

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Mares can continue to produce foals well into their late teens or early to mid 20's. However, mare owners should realize that the prognosis for fertility of an older mare decreases each year. An aged mare that has recently had a foal has a greater chance of becoming pregnant again than a mare of similar age that has remained barren despite being bred over multiple estrous cycles during the previous breeding season. The fact that an older mare has never been mated previously (i.e. a maiden mare) does not necessarily mean that she will be fertile. Older maiden mares are notoriously difficult to get in foal.

Peak fertility in horses occurs at approximately 6 to 7 years of age. Fertility begins to decline at around 15 years of age as mares become more difficult to get in foal and the rate of pregnancy loss increases. A young, reproductively healthy mare has a 50 to 60% chance of becoming pregnant during a given estrous cycle when mated to a fertile stallion. In contrast, an older mare may have a 30 to 40% chance or less of becoming pregnant during any given estrous cycle. Aged mares may need to be bred over more estrous cycles, on average, to establish a pregnancy than younger mares.

It is recommended that a veterinarian perform a reproductive evaluation on an older mare prior to the breeding season. If an aged mare does *not* have a history of infertility, the examination may consist simply of an ultrasound examination and a uterine culture. However, if the mare has been barren for several years the evaluation should include an assessment of the perineal anatomy (i.e. the angle and muscular tone of the vulva), vaginal speculum examination, digital examination of the cervix, cytology and culture of the uterus, endometrial biopsy and an ultrasonographic evaluation of the reproductive tract.

Older mares may develop one or more clinical problems that may adversely affect fertility. These may include poor perineal anatomy, increased predisposition to uterine infections and persistent post-mating inflammation, increased uterine scar tissue deposition and endometrial cyst formation, higher incidence of ovulation failure and other factors.

Progressive tilting forward of the upper part of the vulva over the pelvic brim with advanced age may significantly affect the ability of a mare to become pregnant or remain pregnant. This can be even more dramatic if the older mare is in poor body condition. Alterations in perineal conformation decrease the ability of the vulva to act as a barrier against ascending infection and may facilitate aspiration of air into the vagina (windsucking). Affected

mares may benefit from a Caslick's operation, a minor surgical procedure designed to decrease the size of the vulva opening and reduce aspiration and bacterial infections.

Changes within the lining of the uterus, such as laying down of scar tissue, accumulation of inflammatory cells, development of endometrial cysts and destruction of uterine glands also occur as a mare ages. These changes occur in older mares that have had several foals and in older maiden mares. Diagnosis of endometrial damage or degeneration is made by evaluation of a uterine biopsy. A biopsy examination is also used to provide an estimation or prognosis of the ability of a mare to become pregnant and carry a foal to term. A grade is assigned to the biopsy, with Grade I being a normal healthy endometrium and Grades II and III containing moderate to severe pathologic changes. The prognosis for fertility decreases as the severity of endometrial abnormalities increases.

Certain older mares are also more susceptible to persistent post-mating endometritis or inflammation. All mares develop a transient uterine inflammatory response after mating due to the presence of spermatozoa. Affected mares have reduced intensity and duration of uterine contractions necessary to expel seminal plasma, excess spermatozoa and debris following mating. Older mares with reduced uterine clearance may retain inflammatory fluid in their uterine lumen for many days. This results in a uterine environment that is incompatible with embryo survival.

Management strategies that may increase the probability of getting an older mare in foal include a) breeding to a stallion of proven fertility, b) frequent ultrasound examinations to optimize time of breeding, confirm that ovulation occurred and monitor the uterus for fluid accumulation post-breeding, and c) insemination of the mare once as close to ovulation as possible.

Therapeutic techniques that may be beneficial include correction of perineal defects with a Caslick's procedure, administration of an ovulation-inducing agent (i.e. hCG or deslorelin) to help predict when ovulation will occur and consequently optimize insemination time, uterine lavage and/or oxytocin administration after breeding to remove any accumulated uterine fluid and possibly administration of exogenous progesterone (i.e. Regumate®) to help support the ensuing pregnancy.