**Mare Breeding Protocol**

1. Most mares in our area will come into their natural heat cycle sometime in April
	1. Transitional heat cycles may be seen as early as February but these cycles do not produce consistent follicles with fertile eggs
	2. If a foal is desired early in the year, closer to Jan. 1st, then the mare will need to be started under lights starting between Thanksgiving and Dec. 1st.
		1. The mare needs to be under lights for at least 60-70 days to induce early estrus.
		2. The light intensity used should be a minimum of 10-ft candles (100lux)( A 100-200 W incandescent bulb or a fluorescent light in a 12-foot by 12-foot stall should be sufficient, per CSU VTH guidelines)
		3. Lights need to be on for 16 hrs per day, leaving 8 hrs of darkness per day (Do NOT leave lights on for 24hrs).
		4. Plan for first ultrasound evaluation at 60 days post initiating light therapy
2. Schedule an initial U/S evaluation when signs of heat are first observed in early spring.
	1. If unable to detect signs of heat, recommend initial U/S in late March
	2. During the initial evaluation a physical and reproductive exam will be performed in addition to ultrasounding the uterus and ovaries to assess the mare’s reproductive health and a breeding plan will be discussed.
	3. If wanting to do a pre-breeding uterine culture/cytology and biopsy or if exam findings warrant them, we will perform these at this time or schedule a follow up appointment time for them.
	4. \*\*Please bring your stallion contract and the collection schedule to this appointment\*\*
	5. All mares should receive their yearly spring vaccines and dewormer +/- dental work prior to breeding. If needed we can do this for you at the initial exam or schedule another date prior to breeding.
3. If rebreeding post foaling:
	1. foal heat occurs ~7-10 days post foaling, you can breed on this heat, however this heat cycle does not always produce a good quality follicle to breed to as well as the uterine lining is still healing from foaling so pregnancy success rates are lower
	2. For best chances recommend breeding on the 2nd heat cycle post foaling (~28days post foaling)
4. Currently our office only offers artificial insemination using fresh or cooled shipped semen. \*\*We do not offer stallion collection\*\*
	1. For frozen semen AI we recommend referral to Walsh Quarter Horses in Delta with Dr. Sondergard
	2. Mares are welcome to board at the clinic for their breeding period or owners can bring in for appointments.
5. Breeding Options:
	1. Breeding on natural heat cycle
		1. Minimal Hormone therapy used
		2. Requires more ultrasound exams to track heat cycle progression
	2. Short cycling – mare is placed on hormone therapy to bring into heat at a certain time for a more predictable ovulation
		1. Useful in mares who do not show signs of heat or for mares with infertility issues
		2. General Protocol:
			1. Day 0 start on Progesterone supplement (Altren or Regumate) - 1mL/100lbs orally once per day for 9 days, give in AM \*\*\*WEAR GLOVES\*\*\*
			2. Day 9 give Prostaglandin injection (1mL Estrumate IM) in PM
			3. Day 11 bring mare in for ultrasound, 2 days post Estrumate inj.
	3. Once mare is getting close you can leave her at the clinic for daily ultrasound exams
	4. When the mare is in the pre-ovulatory phase on U/S exam (i.e. large follicle, uterine edema and active heat) we will order semen from the stud farm
	5. Once ordered, Semen is collected and shipped to the clinic the next day.
	6. We will inseminate the mare as soon as the semen arrives
		1. 3mls hCG is administered IV at time of insemination to induce ovulation
			1. Ovulation typically occurs w/in 48hrs
	7. 2mLs of Oxytocin will be administered IM ~8hrs post AI to help clear out excess fluid from uterus
	8. U/S evaluation will be performed ~24hrs post 1st AI to check for ovulation
		1. If ovulation has occurred and the uterus is clean on U/S the mare will be sent home
		2. If ovulation has occurred and fluid is still present in uterus another dose of oxytocin will be administered and mare will be sent home
		3. If ovulation has not occurred and 2 doses of semen were provided by the stud farm, a 2nd AI will be performed
			1. At this point the mare can be sent home with the owner to administer Oxytocin ~8hrs post AI
			2. Recommend the mare be brought back 2 or 3 days after the 2nd AI to confirm ovulation
	9. \*\*The owner is responsible for returning the semen shipping container back to stud farm\*\*
6. Once ovulation is confirmed:
	1. if the mare has poor vulvar conformation a temporary caslicks will be placed
	2. If mare has a history of needing Progesterone supplementation for first 110 days of pregnancy it should be started at this time
7. \*\*First pregnancy check (twin check) is performed at ~14 days post ovulation\*\*
	1. If twins are observed we can abort one using the U/S probe at the clinic prior to 18days gestation (the mare will need to stay at the clinic for this).
		1. After 18 days:
			1. we can wait to see if one or both embryos abort on their own prior to 60 days
			2. the owner may choose to abort both embryos and start over
			3. we can refer to CSU for more specialized abortion techniques to try to save one embryo while aborting the other
	2. Progesterone assay is performed at this time to ensure pregnancy is stable
		1. This is a blood test we send out to the lab
		2. If Progesterone is low, the mare will be placed on a Progesterone supplement (Altren or Regumate) for first 110 days of pregnancy \*\*\*WEAR GLOVES when administering\*\*\*
	3. Permanent caslicks will be placed at this time in mares with poor vulvar conformation
8. The Second pregnancy exam is performed at ~24-30days to check for a fetal heart beat
9. The 3rd pregnancy exam is performed at ~60days
	1. May or may not be able to sex fetus at this time
10. The last pregnancy exam is performed at ~90 days.
	1. We might not be able to visualize the fetus at this time as it starts to sink low into the abdomen however we want to check that the mare is still pregnant and that the placenta looks healthy
	2. Mares are most likely to have an early pregnancy loss prior to 90 days gestation
11. Hereafter no further pregnancy checks are required but we can perform follow up exams at any time if the owner desires or if abnormal signs are observed
12. Gestation length is ~340 days/11 mo (+/- 3 weeks is normal)
13. Pregnant mare vaccines:
	1. Equine Herpes virus 1 vaccination (Prodigy or Pneumabort) are recommended at at 5,7 and 9 mo gestation.
	2. Annual Spring vaccines should be given at 10 months gestation.
	3. Risk based vaccines for pregnant mares include:
		1. Clostridial vaccine – recommended if the farm has a history of clostridium outbreak in foals or calves, if foaling out in mud or dirty conditions or if foals will be in contact with cattle feces as a neonate
			1. Vaccinate mare at 6 and 3 weeks prior to foaling using a Clostridial C & D vaccine approved for cattle (no vaccine is approved for horses as of now)
		2. Rotavirus vaccine – recommended for mares on breeding farms with a high concentration of foals
			1. Vaccinate mares at 8, 9 and 10 months gestation
14. Deworming pregnant mares:
	1. Only use dewormers labeled safe for use in pregnant mares. Quest is not safe to use during pregnancy.
	2. Wait to deworm until after 90 days gestation.
	3. Deworm at 10 months gestation.
	4. In general Ivermectin is an effective and safe dewormer to use in our area during pregnancy
15. All fescue grass should be removed from the diet by 7-9mo gestation
16. If mare has a caslicks it needs to be removed ~4 weeks prior to foaling date
17. Refer to our foaling protocol for what to look for as foaling date draws close.