***Recommendations to Host and Farms: GENERAL PROTOCOLS***

*Below are a number of step by step protocols that should be shared with farmers as guidelines to improve cow health, reproduction and production:*

**CALVING MANAGEMENT**

Prepared by Dr. Roger G. Ellis

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Volunteer: Farmer to Farmer Program: ACDI/VOCA, Land O’Lakes

Heifer International

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1. Move heifer or cow into an individual 4 X 4 meter box pen dedicated to calving. (Don’t allow sick cows into these “maternity pens”). Be sure these pens are cleaned, disinfected, limed and rebedded after each calving.
2. If no box pen put lime on floor and extra bedding behind cow.
3. Move into pen at first signs of calving such as pushing, fluid or water sack protruding.
4. Leave cow to be not disturbed and relax but observe closely and note time.
5. For heifers having first calf , give the heifer around 4 hours unless pushing is very hard or if all pushing stops for 30 minutes
6. For cows give the cow a couple of hours unless pushing is very hard or if all pushing stops for 30 minutes
7. Watch cow for early signs of Parturient Paresis or Milk Fever
8. If ears are cold or cow is depressed give Calcium intravenously.
9. If it is necessary to examine cow inside for calf position tie tail to front leg of cow (Never to the stall or anything stationary)
10. Wash area 5 centimeters around the (vulva) birth canal opening with soap and disinfectant
11. Put on a clean shoulder length plastic sleeve
12. Put powdered lubricant (J-Lube) with water, other sterile lubricant or clean soap and water all over sleeve.
13. Examine in birth canal for position of calf
14. If water sack has not broken work carefully to try not to break it.
15. If calf is in the proper position coming frontward with nose, head and 2 feet in place or backward with 2 legs and tail.
16. Give the heifer or cow more quiet undisturbed time to continue pushing.
17. If calf is not in the correct position or feels to large contact the Veterinarian immediately for help.
18. If the water sack is coming through the vulva use your hand in a clean lubricated plastic sleeve between the water sack and tissue around birth canal opening to stretch it. Try not to break the water sack to soon. It helps to open (stretch) the birth canal.
19. If the head is coming through the vulva use your hand in a clean lubricated plastic sleeve to gently stretch between calf’s head and birth canal opening.
20. When nose and most of head is out of the birth canal break water sack (if it has not already broken) and be sure to remove all membranes from the nostrils. If cow is lying down try not to get her up.
21. Gently pull on legs of calf when cow pushes, relax when cow relaxes
22. Do everything as clean as possible.
23. Do NOT put anything in the uterus after calf is born
24. If calf is small and it is possible there is a second calf. Put on new clean shoulder length sleeve, lubricate it with sterile lubricant and examine cow uterus for a second calf.
25. If cow is down get cow up if no sign of Milk Fever.
26. If signs of Milk Fever such as cold ears or S shape to neck give the cow intravenous Calcium before you try to get her up.
27. After cow has been up for a few minutes give an injection of Oxytocin (40 – 100 IU). NEVER GIVE THE OXYTOCIN BEFORE THE COW GET TO HER FEET BECAUSE THIS MAY CAUSE HER TO PROLAPSE HER UTERUS

**NEW BORN CALF MANAGEMENT**

Prepared by Dr. Roger G. Ellis

Volunteer: ACDI/VOCA, Farmer to Farmer

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1. Do Not allow calf to nurse mother
2. Allow cow to lick off and stimulate the calf for about 1 hour
3. Remove calf from cow within 1 hour of birth
4. Dip navel of calf with strong solution of Iodine (7%) or disinfectant
5. Dry off calf by vigorously rubbing with a towel if needed
6. Place calf in a clean and disinfected dry stall
7. Wash the teats of the mother (if necessary) avoiding wetting the udder
8. Dry teats and udder with a clean towel or disposable paper towel
9. Dip teats with a Teat Dip and allow it to stay on teats for 30 seconds
10. Wipe teat dip off teats and check milk of each quarter for mastitis.
11. Milk cow out completely into a clean milking machine.
12. Prepare 2 nipple bottles that hold 2 liters of Colostrum (1st milk)
13. Feed calf as much as it will drink
14. If calf drinks more than 3 liters that is good, better if drinks 4 liters
15. If calf does not drink at least 3 liters use a stomach tube to give all
16. In 8 -12 hours offer the calf 2 liters of mothers Colostrum
17. Do Not be concerned if calf does not eat all or any Colostrum
18. If calf drinks colostrum at the second feeding start feeding milk replacer, pasteurized whole milk or whole milk (if all available) at next feeding
19. If calf does not drink colostrum at the second feeding offer calf 2 liters at the 3rd feeding and start feeding milk replacer, pasteurized whole milk or whole milk (if all available) at next feeding
20. Feed calf 2 times daily with 2 liters of milk replacer, pasteurized whole milk or whole milk (if all available) at next feeding
21. In very cold weather (Temperatures below -5 C) it is good to feed and additional 1 – 2 liters of milk during the day.
22. Always have fresh clean water available to calf between feedings.
23. Always have fresh calf starter (24% protein) available for calf to eat
24. Amount of milk per feeding maybe increased up to 3 liters 2 times per day. However if water and calf starter is available this may not be necessary. This can save use of milk which can be sold
25. Be sure calf or heifer is not exposed to adult manure until 18 months old by:
    1. Feeding Whole milk
    2. Feeding adult cow refusal
    3. Housing with adults
    4. Adult manure contaminated equipment

**AFTER (POST) - CALVING MANAGEMENT**

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1. Leave heifer or cow in maternity pen for a few hours after her calf is removed or until she is stable on her feet.
2. Dip cows teats with 1% Iodine Teat Dip and leave on Teats for about 1 minute. Wipe teats dry.
3. If cow’s udder is dirty wash the teats with water and soap with an individual towel avoiding getting water up onto the udder. Dry the teats with another individual towel and dip teats as in number 2 above.
4. Check the cow’s milk for any signs of mastitis.
5. Milk cow into a clean milker to collect Colostrum for the Calf.
6. If heifer or cow is unstable or weak after calving leave her in the maternity pen until she is strong.
7. If cow shows any signs of milk fever such as low body temperature, cold ears, weakness, dilated pupils or S curve to the neck give her 500 ml of Calcium slowly intravenously.
8. Give cow 40 - 100 IU of Oxytocin in the muscle when cow is up.
9. Move heifer or cow to Fresh Group for close daily monitoring.
10. Provide a fresh cow diet with adequate fiber mixed in ration.
11. If cow does not pass her placenta by the next milking repeat the injection of Oxytocin
12. DO NOT put anything into the uterus through the vagina.
13. A gentle pull on the placenta daily can be used to see if the placenta will come out.
14. Take the rectal temperature and measure urine Ketones daily.
15. Evaluate the cow’s attitude and appetite daily.
16. If the cow’s temperature goes over 39.5 C watch very closely. If cow is off feed start cow on antibiotics systemically, not in the uterus.
17. If cow is off feed evaluate cow’s urine ketones and digestive tract. If an animal is ketotic treat with intravenous glucose and possibly steroids if no signs of infection.
18. Watch closely for signs of Rumen stasis and Displaced Abomasum (twisted stomach) and. Treat by stomach drenching and surgery.
19. 14 and 24 days after calving give prostaglandin to induce estrus (heat)
20. Move heifer or cow to High Group as soon as doing well at about 14 – 21 days in milk.
21. Examine uterus through the rectum at 30 days to evaluate involution.

**BREEDING MANAGEMENT PROTOCOL**

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1. Observe heifer or cow transition to high lactation group and ration.
2. Watch and record signs of uterine discharge or animal sickness.
3. Exam cows rectally if any signs of uterine infection.
4. If cow has poor attitude, is off feed or loosing body condition do a complete physical exam and treat accordingly.
5. Watch cow for signs of heat and record to help predict next heat.
6. Have and established Voluntary Waiting Period (VWP)
7. Do not breed cow before the established VWP
8. Decide if the farm is going to utilize visual heat detection or a synchronization program or a combination of both.
9. If using visual heat detection be sure breeding group is observed at least 3 – 4 times daily when cows are resting including 1 time in the late evening.
10. Record all signs of heat from secondary signs such as mucus to strong signs such as standing to be mounted.
11. Inseminate based on Standing heat using AM/PM rule. Cows observed in heat in morning inseminated in the afternoon and if observed in the afternoon inseminate in the morning.
12. Or inseminate at the time of observed heat and inseminate again in 24 hours. This may be beneficial for cows being inseminated multiple times (Repeat Breeders)
13. If cows are not showing heat their Body Score, ration and housing should be evaluated
14. Cows which don’t show signs of heat in 14 – 21 days after VWP may be started on a synchronization program.

**Prostaglandin**

**Synchronization Program**

Dr. Roger G. Ellis

Volunteer: ACDI/VOCA, Farmer to Farmer

Prostaglandin, PGF2a

1. Be sure heifer or cow is in good Body Condition and healthy.
2. Give appropriate dose of PGF2a deep in muscle with a clean needle. Ideally early in morning when cow is cool.
3. Observe for heat for the next 10 – 14 days.
4. If heat is shown inseminate cow following the AM/PM rule
5. If no heat by 10 – 14 days inject PGF2a as above.
6. Inseminate at 72 hours or when cow shows heat following the AM/PM rule.

You must be sure the correct drugs and doses are administered at the right time, to healthy cows that are not suffering from heat stress!

**Ov-Sync**

**Synchronization Program**

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GNRH and Prostaglandin, PGF2a

1. Be sure heifer or cow is in good Body Condition and healthy.
2. Give appropriate dose of GNRH by deep in muscle (IM) injection with sterile needle in the early morning when cow is cool.
3. 7 days later Give appropriate dose of PGF2a deep in muscle with a sterile needle early in morning when cow is cool.
4. 2 days later in the afternoon give GNRH again.
5. The next morning inseminate in the early morning when cow is cool.
6. Observe cow for heat. If occurs in 12 hours inseminate again 12 hours after heat.

Some programs use ½ dose of GNRH given in the vulva to reduce cost. This works on some farms and not on others.

If this program is being used to treat cystic ovarian disease do not use the reduced dose of GNRH

The dose of PGF2a should not be reduced.

You must be sure the correct drugs are administered at the right time, to healthy cows that are not suffering from heat stress!

**Pre Sync**

**Synchronization Program**

Dr. Roger G. Ellis

Volunteer: ACDI/VOCA, Farmer to Farmer

Prostaglandin, PGF2a and GNRH Ov Sync

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2. Give appropriate dose of PGF2a deep in muscle with a sterile needle. Ideally early in morning when cow is cool.
3. Observe for heat for the next 10 – 14 days.
4. If heat is shown inseminate cow following the AM/PM rule
5. If no heat by 10 – 14 days inject PGF2a as above.
6. If cow shows heat inseminate following the AM/PM rule.
7. Give appropriate dose of GNRH by deep in muscle (IM) injection with sterile needle in the early morning when cow is cool.
8. 7 days later Give appropriate dose of PGF2a deep in muscle with a sterile needle early in morning when cow is cool.
9. 2 days later in the afternoon give GNRH again.
10. The next morning inseminate in the early morning when cow is cool.
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