

August 16, 2005

MILKING PROCEDURES

1. Currently the herd is being milked two times per day. The milking times are approximately 5:00 AM / 5:00 PM.
2. As cows enter the milking stall line, monitor ID system for cow ID pick-up. Correct if necessary.
3. Cow prep sequence
 - Cow 1
 - a. With your gloved hand, remove any external organic matter from the udder and teats.
 - b. Using udder dip wand with 1.0% I₂ (iodine), pre-dip cow taking care to ensure that the backside teats are covered.
Repeat steps a and b for cows 2-5. The goal is to get 10-12 seconds of contact time on the teats.
 - c. Return to cow 1 and strip*, wipe and attach milker.
 - d. Repeat step c for cows 2-5.

After a cow is done milking, only reattach the milker if it is an EXTREME case like when the animal is in heat and didn't let down her milk. When milked out, dip teats with pre/post dip wand, making sure backside teats are covered.

*Strip 2-3 squirts of milk from each teat on concrete. If mastitis is detected, run CMT (California Mastitis Test) test to determine severity. (see section titled: If Mastitis Detected)

STUDENTS: Please bring to the attention of a full time employee an inflamed quarter, discolored milk, clots, flakes, and bloody milk.

4. Observe milk meter operation. Record data in parlor log book and notify office of a problem.
5. Any quarter with a CMT ≥ 3 , collect a sterile milk sample from the positive quarter, inject 1 cc oxytocin IM, milk her in the can, place milk sample in the refrigerator. (see SOP "Collection of Milk Samples for Microbiological Culture")

August 16, 2005

IF MASTITIS IS DETECTED:

1. Fresh cows (day 1- 8):

- a. Prior to milking 8, CMT, culture, and treat only if milk looks abnormal or is stinky. Be sure to get culture before starting any Mastitis treatment.
- b. On the 8th milking, CMT all four quarters. Normal milk should be the same from all 4 quarters on the CMT.
- c. Any quarter with a CMT=3, culture and treat with the following product *Hetacin K. Use according to label directions. If milk from quarter(s) is not normal after following label directions, continue treatments for 1 or 2 milkings **or** treat one day longer from the day milk is determined normal.
- d. Take temperature according to fresh cow protocol.

2. Cows that are stressed (early lactation etc.) or have a previous mastitis history (greater than 3 cases in previous lactation):

- a. Taking temperatures is not warranted on these animals.
- b. If CMT<3 and if only flakes, fore strip and additionally massage udder. Make sure cow is milked out completely. Make note for the next milking crew to check this animal. Include her milk weight from that milking. Use 2 cc oxytocin IM if the animal is a slow milker, has edema, or has a tender quarter.
- c. If animal has flakes and
 - i. if CMT \geq 3, sample milk from infected quarter(s) and place in freezer. If you feel this is a "different" type of mastitis case, submit milk sample immediately for culture. If the cow does not respond to treatment after the recommended time period, submit sample for culture.
 - ii. if CMT \geq 3 and if this is her first case of mastitis, treat with *Hetacin K. Use according to label directions. If milk from quarter(s) is not normal after following label directions, continue treatments for 1 or 2 milkings **or** treat one day longer from the day milk is determined normal.
 - iii. if mastitis occurs again in this animal under 30 days from last mastitis case and the original milk sample was NOT sent in for culture, send that sample plus a current sample in for culture.
 - iv. milk samples can be thrown out after 60 days from sampling date for individual animals.
- d. If this is an animal's 2nd or greater mastitis incident in the same quarter, treat for 5 to 7 days with the following product:
 - i. Use Hetacin K.
 - ii. follow the same protocol under item 2C on milk sampling and culturing if CMT>3.

3. Normal cow (not sick, milk normal) but conductivity is + and/or CMT>3.

- a. Taking temperatures is not warranted on these animals.

- b. Sample milk from infected quarter(s) and place in freezer.
- c. Use 1- 2 cc oxytocin IM. Make note for next milking crew to check this animal. Include milk weight from that milking. Check Afifarm health report if animal is listed. Check Dairy Comp 305 for last treatment for clinical mastitis. CMT scores may remain elevated for weeks after treatment depending on the severity of damage and the causative organism. Staph aureus infections may cause elevated CMTs for several months.
- d. If animal's CMT is the same or worse at next milking, and/or the conductivity alarm goes off, treat this animal with * ***Hetacin K*** if this is her first mastitis incident this lactation. If milk from quarter(s) is not normal after following label directions, continue treatments for 1 or 2 milkings **or** treat one day longer from the day milk is determined normal.
- e. If this is the animal's second or greater mastitis incident in the same quarter and she has not recently been treated for clinical mastitis in the last 30 days, treat for 3 to 5 days with ***Hetacin K*** . Treat one day longer from the day milk is determined normal.

4. Acute mastitis: (watery, straw colored secretion; quarter very firm after milk out; cow may act like the quarter is tender)

- a. Sample milk from infected quarter(s) and place in refrigerator.
- b. Fore strip and additionally massage udder. Use 2 cc oxytocin IM. Make sure cow is milked out completely.
- c. Band and treat the animal with ***Hetacin K*** .
- d. Night Crew - If cow obviously in distress and further treatment may be necessary, make phone calls in this order – Assistant Manager, Straley Vet Services.
- e. Take animal's temperature and check quarter at first opportunity. If temperature is high (>104°F) in addition to the symptoms listed for acute mastitis, and/or the cow is obviously in distress, notify Straley Vet Services for possible systemic antibiotic treatment.

5. Chronic cows (greater than 3 mastitis cases in a lactation)

- a. Using Dairy Comp 305, print a list of cows each month that has more than 3 cases of mastitis and linear score > 4. Included on the list will be current linear score, previous linear score, milk, mtot, relv, and dim.
- b. If an animal has had more than 2 quarters infected when having mastitis and has had high somatic cell counts, seriously consider this animal a cull candidate.
- c. If an animal has had only one quarter infected, consider discarding the milk from the problem quarter with a quarter milker.
- d. In extreme cases, Nolvasan can be used to dry up the quarter. There is a 40 to 50% chance that the quarter will be normal in the following lactation.
 - i. Contact manager before initiating this treatment.
Considerations about the animal are:
Age, Repro status, Production (relv), SCC
 - ii. Use a sterile syringe (sterile infusion tips)

- iii. Insert 60 cc of Nolvasan (full strength) after the quarter has been completely milked out.
 - iv. If after 2 days there is still substantial milk in the quarter, milk the quarter out again and retreat. No more than 2 treatments total should be necessary.
 - v. Normally, milk does not need to be withheld, however to err on the safe side, withhold milk until quarter is dried up, screen her milk with the Delvo before adding to the bulk tank.
 - vi. No other treatment should be given to that quarter.
 - vii. Leg band the animal as 3-quartered.
6. All cows and heifers are quarter sampled within 24 hours post-partum. All animals that have a positive staph aureus culture are put on a **Hetacin K** protocol treatment: one treatment daily for two days in the AM, one treatment daily for two days in the PM, one day no treatment and finally one treatment for two days in the AM. All positive animals are re-cultured at four week intervals from the end of treatment and any animals having a positive culture are removed from the herd. If the second culture is negative, the animals are monitored for one additional negative culture before returning to their respective animal groups. (Need 3 negative cultures after treating with Pirsue – weeks 4, 8, 12)
 7. All treated cows are marked with a red or orange leg band on each of their rear legs. Their milk is dumped down the drain until they are negative on a Delvo test. Sometimes the sheep or beef barn will use this milk for the lambs or orphaned beef calves.
 8. Cows marked with green leg bands signify high somatic cell count or staph aureus infection and are milked last.
 9. All dry cows are marked with a yellow leg band and should NOT be milked.
 10. Cows marked with a white band are 3-quartered animals.

All research animals needing milk weights to be recorded manually as well as electronically are marked with a blue leg band.