



## IFAS Dairy Unit

### STANDARD OPERATING PROCEDURES (SOP) July 01, 2011

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***This manuscript has been prepared exclusively for the Dairy Unit of the University of Florida. It is not intended to be used as generic operating procedures for dairy farms. In accordance to the veterinary practice act of the state of Florida, this SOP has been modified and does not contain antibiotic or hormone treatment recommendations .***

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# UF DAIRY UNIT

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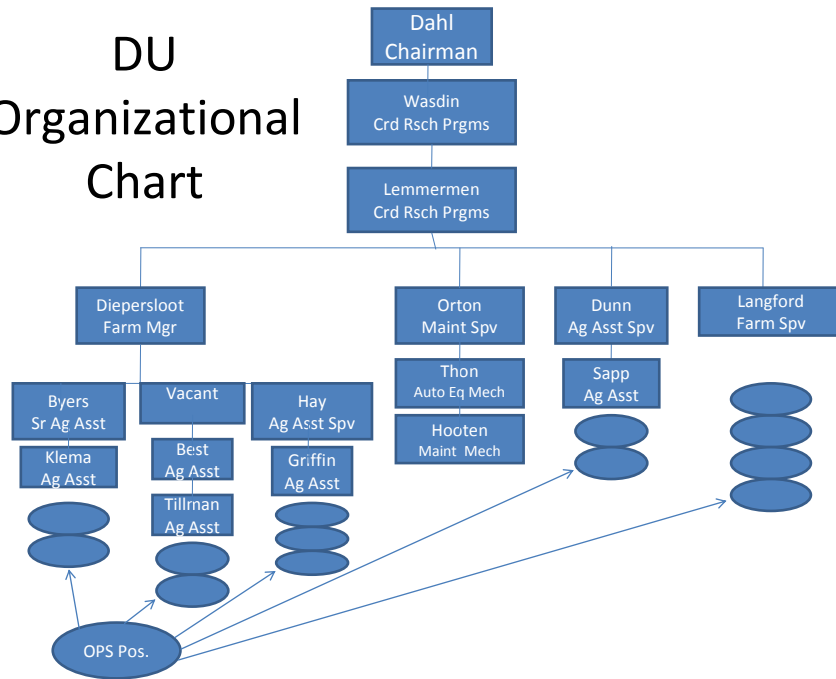
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## A - DAIRY UNIT ORGANIZATIONAL CHART

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### DU Organizational Chart



**UF DAIRY UNIT**

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**B - HERD HEALTH MANAGEMENT SOP  
GENERAL HERD HEALTH MANAGEMENT**

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## **GENERAL HERD HEALTH MANAGEMENT**

### **General Principles and Guidelines**

The emphasis of the herd health management program at the UF Dairy Unit is to balance and maximize the triple goals of 1) production of high quality milk, 2) maintenance of individual animal and herd health and 3) focusing on animal welfare. These goals are to be achieved by emphasizing disease prevention through nutrition, preventive and planned procedures, early disease detection and effective treatment of diseased animals. Cow and calf comfort must be emphasized and implemented, and animals will be handled in a gentle and humane manner at all times.

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### **ANIMAL HANDLING**

The following guidelines set forth by W.D. Hoard over 100 years ago shall be the overriding principles behind all animal handling at the Dairy Unit.

**“The rule to be observed in this stable at all times,  
toward the cattle, young and old,  
is that of patience and kindness.**

**A man's usefulness in a herd ceases at once  
when he loses his temper and bestows rough usage.**

**Men must be patient.  
Cattle are not reasoning beings.**

**Remember that this is the Home of Mothers.  
Treat each cow as a Mother should be treated.  
The giving of milk is a function of Motherhood;  
rough treatment lessens the flow.  
That injures me as well as the cow.**

**Always keep these ideas in mind in dealing with my cattle."**

## GENERAL HERD HEALTH MANAGEMENT

### Injections and Antibiotics

**INJECTION SITES** (These recommendations are those made by the Dairy Beef Quality Assurance Program and are intended to minimize post-injection complications and to improve the quality of beef in market cattle [cull cows].)

- Intramuscular injections (IM)  
All IM injections should be given in the muscle on the side of the neck.  
**No** IM injections should be given in the muscles of the legs.
- Subcutaneous injections (SC)  
>2 ml - under the skin on the side of the neck or behind the elbow.  
#2 ml - on the side of the neck or, alternatively, under the skin to the left or right side of the tail head (where BST had previously been administered).  
**Exception:** Excede<sup>®</sup> is to be given according to label directions behind ear.
- Intravenous injections (IV)  
>5 ml – jugular vein  
#5 ml – tail vein  
**NEVER administer anything in the milk vein !!**
- Oral administration (PO)

## ANTIBIOTIC DRUGS AND TREATMENTS

Antibiotics and hormones are commonly used in lactating and non-lactating dairy cattle. Dairy producers should consult with their veterinarian on the judicious use of these drugs following the suggestions below:

- Establish a valid veterinarian – client – patient relationship
- Have written protocols for proper drug administration; injection sites considering beef sales.
- Use drugs according to label recommendations and veterinarian advice.
- Follow acceptable practices for animal health treatment.
- Strict adherence to protocols for drug residue avoidance in both milk and meat .
- Maintain herd health and individual cow treatment records.
- Periodic training and supervision of personnel for diagnosis and treatment of cattle diseases.

## GENERAL HERD HEALTH MANAGEMENT

### Herd Vaccination Schedule

Disclaimer: We recommend that the producer consult with their veterinarian and for product options and use. . The Dairy Unit utilizes products from pharmaceutical companies that participate in the Veterinary School Program. Application of all products must follow label recommendations because products may change according to pharmaceutical company.

#### Milking Herd

<b><i>Time</i></b>	<b><i>Product</i></b>	<b><i>Dose &amp; Administration</i></b>
All Drys	Escherichia coli vaccine  Intramammary Antibiotic Treatment  Clostridial vaccine	Label Recommendation
Springer	Escherichia coli vaccine  Rotavirus (serotypes G6 & G10), coronavirus and a K99 Escherichia coli bacterin combined vaccine	Label Recommendation
21-28 DIM	Escherichia coli  Modified live IBR, BVD, BRSV and PI3 + 5 way Leptospira combined vaccine.	Label Recommendation
40 -47 DIM	Leptospira hardjo – bovis vaccine	Label Recommendation
57-63 DIM	Leptospira hardjo – bovis vaccine	Label Recommendation
75-85d preg (reconfirm)	5 way Leptospira vaccine	Label Recommendation
Open Cows > 250 d	Modified live IBR, BVD, BRSV and PI3 viruses + 5 way Leptospira vaccine with Leptospira hardjo-bovis	Label Recommendation

**Purchased Heifers**

<b><i>When</i></b>	<b><i>Product</i></b>	<b><i>Dose &amp; Administration</i></b>
Arrival (within 2 days of arrival)	Killed IBR, BVD, BRSV and PI3 vaccine.  5 way Leptospira vaccine including Leptospira hardjo-bovis .  Deworm	Label Recommendation
3-4 weeks later	Killed IBR, BVD, BRSV and PI3 vaccine.  5 way Leptospira vaccine including Leptospira hardjo-bovis	Label Recommendation

Purchased replacement heifers will also be given two new eartags with their new number, one RFID tag in the left ear. These numbers will be recorded and referenced to their state ID metal tags and logged into the computer systems to keep track of all their information.

Home raised replacement heifers are tagged at birth and given an RFID tag as soon as they arrive at the calf unit.



## GENERAL HERD HEALTH MANAGEMENT Herd Vaccination Schedule

### Replacements

<b>Age</b>	<b>Product</b>	<b>Dose &amp; Administration</b>
Day 0	Colostrum	
Day 1 - 5	<ul style="list-style-type: none"> <li>• Vitamin E and Selenium Supplement (Injection)</li> <li>• Intranasal IBR + PI3 vaccine</li> </ul>	Follow Label
3 weeks	<ul style="list-style-type: none"> <li>• Modified live BVD (types 1 and 2), IBR, BRSV and PI3 viral vaccine</li> </ul>	Follow Label
4 weeks	Dehorn	
5 weeks	<ul style="list-style-type: none"> <li>• Modified live BVD (types 1 and 2), IBR and PI3 viral vaccine</li> <li>• 7 - way clostridial vaccine</li> </ul>	Follow Label
7 weeks	<ul style="list-style-type: none"> <li>• Pinkeye vaccine</li> <li>• 7 – way clostridial vaccine</li> </ul>	Follow Label
8 - 9 weeks	Physical Exam and turn-out	
3 months	<ul style="list-style-type: none"> <li>• Pinkeye vaccine</li> <li>• Leptospira hardjo – bovis vaccine</li> </ul>	Follow Label
4 months	<ul style="list-style-type: none"> <li>• Deworm</li> <li>• Leptospira hardjo – bovis vaccine</li> </ul>	Follow Label
5 months	<ul style="list-style-type: none"> <li>• 7 – way clostridial vaccine</li> </ul>	Follow Label
6 months	<ul style="list-style-type: none"> <li>• Brucella vaccination , extra teat removal</li> <li>• Deworm</li> <li>• 5 way Leptospira vaccine</li> </ul>	Follow Label
11 - months	<ul style="list-style-type: none"> <li>• Modified live BVD (types 1 and 2), IBR and PI3 viral vaccine + 5 way Leptospira vaccine that contains Leptospira hardjo-bovis.</li> <li>• Deworm</li> </ul>	Follow Label
12-14 months	<ul style="list-style-type: none"> <li>• Pinkeye Vaccine</li> </ul>	Follow Label
Pregnancy Check	<ul style="list-style-type: none"> <li>• Deworm</li> <li>• 5 – way Leptospira vaccine</li> </ul>	Follow Label

Heavy Pregnant (7 m)	<ul style="list-style-type: none"> <li>• Escherichia coli vaccine</li> <li>• Rotavirus (serotypes G6 &amp; G10), coronavirus and a K99 Escherichia colibacterin combined vaccine</li> <li>• Deworm</li> </ul>	Follow Label
Springers (-4 to -3 w)	<ul style="list-style-type: none"> <li>• Escherichia coli vaccine</li> <li>• Rotavirus (serotypes G6 &amp; G10), coronavirus and a K99 Escherichia colibacterin combined vaccine7-way clostridial vaccine</li> </ul>	Follow Label

## **GENERAL HERD HEALTH MANAGEMENT**

### **Health Recording, Reporting and SOP Development**

#### **Weekly Reporting**

Health events are entered into the AfiFarm Dairy Records system daily. A summary of all health events, deaths and culling event for the previous week is printed weekly and provided to management and the attending veterinarians.

#### **Farm Management Meeting and SOP Development**

Monthly, a meeting of Animal Science faculty, FARMS faculty and the Dairy Unit management team is held at the Animal Science Building on the UF campus. The purpose of this meeting is to present all events relevant to dairy farm management (cows calving, cows culled, milk production, feed management, health events, crop production, research activities, etc), so that all interested parties are made aware of activities at the Dairy Unit. It is at this meeting that management and research activities and plans are developed and discussed. The results from these meetings are used to update this document on July 1 of each year.

#### **Herd Record Availability**

Health, production, genetic and treatment records of all of the animals in the Dairy Unit are available through the AFI-Farm Herd Management System. To access the system you go to any of the computers connected to the main dairy computer, type in a number in the "Type Animal to Find" box and the animal's record will appear. At that point click on "Events" and everything that has happened to that animal this lactation is listed in chronological order, including all treatments, movements, vaccinations etc.

If you need information from a previous lactation there is a box where you can designate a particular lactation or click "All" and all the events in the animal's life the last 5 years since the system was installed, are listed.

## **GENERAL HERD HEALTH MANAGEMENT**

### **Isolation of Cows Receiving Antibiotics**

Cows requiring treatment with antibiotics for infection are also milked as a separate group in order to prevent antibiotics from entering the bulk tank per antibiotic label. After meeting this legal requirement, cows are returned to the milking herd.

### **Euthanasia Guidelines**

The decision to humanely euthanize an animal should be made by management in conjunction with a herd veterinarian and should be carried out in a timely manner if the animal is perceived to be in pain or distress. Animals are euthanized according to guidelines established in 2007 by the American Veterinary Medical Association ([www.avma.org/issues/animal\\_welfare/euthanasia.pdf](http://www.avma.org/issues/animal_welfare/euthanasia.pdf)) and the American Association of Bovine Practitioners ([www.aabp.org/Resources/euth.pdf](http://www.aabp.org/Resources/euth.pdf)). Gunshot method will use a 22 caliber bullet applied to the center of the forehead at the intersection of two imaginary lines drawn from the inside corner of the eye to the base of the opposite horn (or a point slightly above the opposite ear in a cow without horns) and is to be applied ONLY by a trained individual from the rendering company. Barbiturate method can ONLY be applied by a herd veterinarian. If the renderer cannot arrive in a timely manner to euthanize an animal in pain or distress, a university veterinarian will be called to carry out euthanasia.

### **Cleanliness of Handling Facilities/Equipment/Work Areas**

The Dairy Unit has state-of-the-art animal handling equipment and facilities that are used by numerous people for numerous reasons. It is not only courteous, but also required, that people that use facilities clean up after themselves. All handling equipment is to be cleaned after every use. All organic matter is to be removed and the floor and surrounding area cleaned appropriately.

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**UF DAIRY UNIT**

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**B - HERD HEALTH MANAGEMENT SOP**  
**ADULT COW HERD HEALTH MANAGEMENT**

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## **ADULT COW HERD HEALTH MANAGEMENT**

### **Fresh Cow Processing and Colostrum Collection**

#### First check (1<sup>st</sup> 12 hrs)

Check udder for mastitis and edema.

Rectally palpate cow and determine if fresh, look for a second calf and at uterine discharge.

- If normal, leave cow alone.
- Do not code as retained. Recheck in 12-16 hrs.

Check cow identification.

- Cow should have two readable plastic flap tags and two metal tags.
- Attach transponder

Record

- Body weight
- Body condition score

#### Recheck (24 hrs)

Rectally palpate cow

- If retained, mark retained cow with RFM to right of tailhead using paintstick.
- See Page 23 for treatment and management recommendations.

#### First & Second Milking

Check udder for mastitis.

Catch colostrum in buckets (AFI code 8) for first two milkings.

At end of Pot Herd milking, pour colostrum into 2 quart jugs and put in refrigerator in break room ASAP. Colostrum storage jug is to be labeled with date, cow number and colostrum score.

Calf unit personnel will pick up colostrum twice a day.

Calf unit personnel will score colostrum in one of two ways.

Cold – score with colostrometer then subtract 15 to get true score.

Room temperature – score directly from colostrometer.

Colostrum is used immediately or frozen for later use.

Colostrum that is stored in the refrigerator should be used within 96 hrs; discard after 96 hrs. Frozen/thawed colostrum should be used within 48 hrs of thawing.

## **ADULT COW HERD HEALTH MANAGEMENT**

### **Postpartum Health Monitoring**

Each animal will be evaluated on days 4, 7, and 12 post-calving for the following:

- Attitude
- Rectal temperature taken and written down
- Uterine health assessed by rectal palpation and observation of uterine discharge
- Udder exam – check milk for evidence of mastitis
- Milk deviation
- Urinary ketone evaluation
- Displaced abomasum – cows will be ‘pinged’ to detect LDA
- In a clinically abnormal cow in which a uterine discharge cannot be obtained, a vaginal exam may be performed AFTER thorough cleaning of the vulva with soap and water.

At any other day postpartum, cows that have a milk deviation (default according to AfiFarm) will undergo a complete physical examination for health problems, diagnosis made, and proper treatment administered (or herd veterinarian on call notified) if necessary.

## ADULT COW HERD HEALTH MANAGEMENT

### Physical Examination - Adult Cow

**Performed by DRU personnel trained in the conduction of a physical examination on cows that appear sick or have a drop in milk production (milk deviation)**

#### Normal Data

	<u>Winter</u>	<u>Summer</u>
Temperature	101 - 103	102 - 104
Heart rate	60 - 80	70 - 90
Respiratory Rate	20 - 40	30 - 70
Rumen contractions	1 - 3 per minute	
Urine ketones	Negative	

#### Preliminary Data

- The cow
  - Lactation number
  - Days in milk and daily milk yield for last 7 days
  - Reproductive status
  - Other information important for that cow or group of cows
- History
  - Previous health problems and treatment
  - Current clinical signs and duration

#### Physical Exam - **"A Routine Must Be Developed"**

##### 1) Overview

- Look at the whole cow → her attitude, stance/posture, how she holds her head, her manure, etc.

##### 2) Take temperature

- Attempt to get urine sample by stroking cow just below vulva with pressure applied on upward stroke. Check for ketones.
- Check color of mucus membranes by parting vulvar lips.

##### 3) Left Side

- Proceed up left side of cow.
- Check pre-femoral lymph nodes located on flank just in front of and 2-3" above point of stifle (Normal → cigar shaped 4-5" long).
- Listen to rumen by placing stethoscope on left paralumber fossa (that part of flank bound by ribs in front, short ribs on top & leg in back). Should sound like rumbling of "distant thunder" & should feel rumen contraction.
- Auscultate and percuss left flank (ping the cow). Most LDA's can be found by pressing stethoscope head deep in paralumber fossa and aim it at elbow on the other side of cow. Thump over last 5-6 ribs. Remember, check for 'low' DA's.
- Chest - listen to heart and lungs; get heart (HR) & respiratory rate (RR). Heart should have distinct 'lub-dub' sound; lungs have soft, difficult to hear sounds.
- Check prescapular lymph node located in front of shoulder blade & 2-3" above point of shoulder. Same shape, slightly larger than pre-femoral lymph node.

##### 3) Right Side

- Check prefemoral and prescapular lymph nodes.
- 'Ping' right flank - pings can originate from RDA (between 8th & 13th rib), gas in large intestine (ping usually farther back and in paralumber fossa). If the cow pings over entire right side, probable RDA with torsion - not good.



## ADULT COW HERD HEALTH MANAGEMENT

### Physical Examination - Adult Cow

#### 3) Right Side (continued)

- Listen to heart and lungs.
- Withers pinch test → pinch skin over withers by grabbing top line of cow over withers and pulling up on skin. Normal cow will 'skooch' or drop down a bit. If cow does not skooch, she may have hardware disease.

#### 4) Udder

- Thoroughly evaluate secretion from all 4 teats using a flat, black surface. Watery milk from toxic mastitis can be missed by milking cow on the floor.

#### 5) Head & Mouth

- Check head and for visible signs of dehydration (sunken eyes), oral, ocular or nasal discharge, swelling.
- Check mouth for ulcers, odor of breath (necrotic or ketotic), missing teeth, etc.

#### 6) Rectal Palpation

- Lastly, palpate the cow using the following routine:
  - a) Manure → assess fecal volume, consistency, odor, etc.
  - b) Birth canal and internal lymph nodes → check for gross changes in birth canal that could be caused by severe vaginitis or birth trauma, abscesses or tumors. Located at 4:00 & 8:00 on bony pelvic brim are the internal iliac lymph nodes; normally small biscuit size and shape. Enlargement can indicate pelvic inflammation, mastitis or tumors.
  - c) Rumen → rumen is located in left quadrant & normally is full and has a doughy consistency. Abnormalities include no rumen fill, gas-filled, excessive fill.
  - d) Kidney → the back of the left kidney is palpable high up on the midline and feels lobulated and firm, about the size of 2 fists together. Abnormal is usually much larger or soft and mushy.
  - e) Right quadrant → the right side of the abdomen normally has no palpable structures in it. Gas-filled bowel, tumors or infection/adhesions are the most common abnormalities.
  - f) Reproductive tract (uterus) → the size of the uterus should be related to days since calving. The early post-calving uterus (<15 days) should be toned and have a discharge that varies in color but always has a mucus consistency. An abnormal uterus lacks tone and feels 'thin-walled'. Abnormal discharge smells foul and is watery (variable color, usually red-black).

#### Diagnosis and Treatment

- Put your findings together and come up with a probable cause of the cow's ailment. See next section, 'Health Disorders', for disease description and treatment.

## ADULT COW HERD HEALTH MANAGEMENT

### Health Disorders

#### ABSCESS

Condition: Abscess

Treatment: Drain abscess on bottom-most part . If no 'soft' spot is obvious, wait 4-5 days and recheck. **Performed by veterinarian only.**

#### BLOAT

Condition: Gas-filled swelling left flank.

Treatment: Minor nutritional bloat - No treatment.

Vagal indigestion - No ruminal sounds. See Veterinarian.

Ruminal indigestion - 2-4 MagOx boluses orally for max. of 2 treatments.

If no improvement, transfaunate with 1-2 liters of rumen fluid orally and/or see Veterinarian.

Acute: pass esophageal tube to relieve gas distention and administer one gallon of mineral oil. If no improvement within 15 minutes consult with veterinarian.

#### DIARRHEA

Condition: Watery scours due to many disease and nutritional disorders.

Treatment: Scours with continued appetite and production - No Treatment.

Scours with history of nutritional disorder - Give 2-4 MagOx boluses orally once daily for a total of 2 treatments only.

If diarrhea continues, give 2-4 Astringent boluses once daily for 2 days and/or see Veterinarian.

If rumen stasis develops - transfaunate with 1-2 liters of rumen fluid.

Treat dehydration as needed.

Chronic untreatable scours with weight loss and production drop: Sample for Johnes and cull.

#### DISPLACED ABOMASUM

Condition: Off feed, scant pasty manure, ping in left or right flank, cow usually within 30 days since calving.

Treatment: Cows diagnosed with displaced abomasum will undergo surgical correction by a veterinarian. Post surgical treatment will be at the discretion of the veterinarian.

NOTE: Most LDA's are complicated with metritis and ketosis. Evaluate and treat appropriately!

## ADULT COW HERD HEALTH MANAGEMENT Health Disorders

### EYE CONDITIONS

#### Cancer eye

Condition: Small nodules on 3rd eyelid to extensive tumor infiltration around eye.

Treatment: Snip off small nodules from 3rd eyelid. (**Veterinarian only**)

Consult veterinarian for eye removal if tumor is extensive.

#### Pinkeye

Condition: Small white ulcer with or without red vessels and eye tearing. Cows in early stage show tears, squinting, and hold head high.

Treatment: Follow veterinarian recommendations.

### FLUID THERAPY

Condition: Dehydration as a result of any disorder.

Treatment:

**Oral therapy** - 5-10 gals of water in addition to mineral and energy supplements according to veterinarian recommendations.

**IV therapy** - Hypertonic saline or volume replacement.

**Hypertonic saline** - 2 liters warmed to body temperature and given IV followed with oral fluid therapy as described above. Allow access to fresh water. DO NOT GIVE to severely depressed or down cow unless followed with 10 gals. of water orally.

**Volume replacement** - add the following to 2.5 gals sterile water (grocery store distilled water is ok). Administer IV over 1 hr.

- 81.3 g NaCl (table salt)
- 2.8 g KCl (salt substitute)
- Xx g CaCl<sub>2</sub>
- 500 ml Dextrose (50% solution)

## ADULT COW HERD HEALTH MANAGEMENT

### Health Disorders

#### FOOT CONDITIONS

**Prelude:** Lameness is the biggest welfare issue on dairy farms worldwide. A severely lame cow should be considered a veterinary emergency! Severely lame cows should be administered pain management and put in the Hospital Pen. A veterinarian should be contacted for a visit the next day, unless the foot trimmer is scheduled for the next day. Moderately lame cows should be administered pain management and seen promptly by a veterinarian or the foot trimmer.

#### Foot Rot

Condition: Infected, swollen, break in the interdigital skin

Treatment: Minor case (no swelling above hoof):

Clean skin between toes, apply KoperTox<sup>®</sup> once daily for 3 days.

Major case (swelling above the hoof or around heels):

Clean and apply KoperTox<sup>®</sup>. Antibiotic and pain management according to veterinarian recommendation.

**NOTE:** Simple case of Foot Rot will clear by the 3<sup>rd</sup> to 4<sup>th</sup> day. If cow is still lame after the 4<sup>th</sup> day, examine for abscess and/or submit for veterinary or hoof trimmer examination. Cows with simple foot rot are also negative to hoof tester.

#### Heel Warts (Digital Dermatitis)

Condition: Painful raw lesion at bulbs of heel. May have wart-like growths.

Treatment: Clean wart lesion and apply gauze sponges soaked in tetracycline or oxytetracycline<sup>5</sup> as foot wrap. Repeat in 3 days if necessary.

Herd Treatment: Mix 1 package of Terramycin-323<sup>®1</sup> in 1 gallon of distilled water. Use as topical spray at a rate of 10-20 ml per foot; apply to heel and between toes plus on any visible lesions.

Wk 1: Apply once daily to all feet of all cows.

Wk 2+: Continue daily topical treatment of all cows with visible lesions.

Wk 8: Repeat Wk 1 treatment if lesions persist.

#### Laminitis

Condition: Acute: Sensitivity in all 4 feet, arched back, reluctance to walk (rare condition)

Chronic: Abnormal horn growth and/or poor quality horn that results in conditions that follow.

Treatment: Antibiotic and pain management follow veterinarian recommendations.

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<sup>1</sup> EXTRALABEL DRUG USE - No milk withholding times required; observe established meat withholding times..

## ADULT COW HERD HEALTH MANAGEMENT Health Disorders

### FOOT CONDITIONS (continued)

#### Subsolar Abscess (White Line Disease)

Condition: Draining tract along white line that is black in color. Positive to hoof tester.

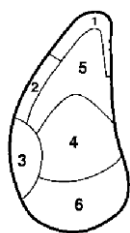
Treatment: Drain abscess, trim foot and block if possible. Cows with large amounts of heel swelling and pain should be treated with antibiotics and receive pain management according to veterinarian recommendations.

**NOTE:** Some cases may require extended therapy; consult veterinarian.

#### Sole Ulcer

Condition: Defect in horn growth on sole near heel of claw (Zone 4 in figure to left).

Treatment: Trim foot removing all loose horn around ulcer site. Block good claw if possible. Cows with large amounts of heel swelling and pain should be treated with antibiotics and receive pain management according to veterinarian recommendations



Soak foot in epsom salt ( $MgSO_4$ ) solution 20-30 min/day.

**NOTE:** Some cases may require extended therapy; consult veterinarian.

#### Upper Limb Trauma (Waterbed Syndrome [WBS])

Condition: Primarily hock and carpal (knee) hygroma, erosions, abscesses due to chronic exposure to rough and/or abrasive surfaces (water beds)

Treatment: Remove cow from freestall housing and place in Hospital Pen

Consider early dry-oof for late pregnant cows

Abscess: drain and flush with dilute iodine solution

Pain management follow veterinarian recommendations.

### HARDWARE

Condition: Milk deviation, moderate to severe depression, diarrhea, dehydration, shallow respiration, positive withers pinch test.

Treatment: Give magnet, follow veterinarian recommendations for antibiotic treatment.

## ADULT COW HERD HEALTH MANAGEMENT Health Disorders

### INDIGESTION

Condition: Milk deviation, diarrhea, ↓ rumen motility, normal temp, ketone negative, +/- bloat.

Treatment: 2-4 MagOx boluses PO SID for a total of 2 treatments **only**.  
If rumen stasis develops - transfaunate with 1-2 liters of rumen fluid.

## KETOSIS

Condition: Milk deviation, off milk, licking pipes, unsteady, nervous attitude, violet color in the keto-stick test.

Procedures: Urine sample keto-stick; complete physical exam

Treatment: All cows diagnosed with moderate or severe Ketosis will receive **Dextrose** (500 ml) and Vitamin B Complex (10-20 ml) intravenously and are to be drenched with 5 to 7 gallons of FCD<sup>®</sup>.

Cows with mild Ketosis can be treated with 500 ml (~1 pint) propylene glycol.

Cows with moderate or severe Ketosis on the third day, follow veterinarian recommendations.

## MILK FEVER

Condition: Down cow or cow unsteady prior to calving to 1 or 2 days after calving No other abnormal physical exam findings (especially mastitis or metritis).

Treatment: 1-1½ bottles Calcium injectable product IV<sup>2</sup>. Retreat with 1 bottle IV after 2 hrs if cow is still unable to rise

**OR**

1 bottle Calcium injectable product IV and 1 tube Calcium gel orally

**NOTE:** GIVE IV SLOWLY using 14g needle - 10 minutes per bottle.

<sup>2</sup> Calnate<sup>®</sup>, CalDextro<sup>®</sup>, CMPK<sup>®</sup>, etc

## **ADULT COW HERD HEALTH MANAGEMENT**

### **Health Disorders**

#### **POST-ABDOMINAL SURGERY**

Condition: DA surgery, C-section (Veterinarian discretion)

Treatment: Antibiotic treatment and pain management follow veterinarian recommendations. Watch and treat for ketosis and dehydration as needed.

---

#### **RESPIRATORY**

Condition: Acute- Elevated temperature 104-107

Cough and rapid respiratory rates. Nose not cleaned.

Treatment: Antibiotic and anti-inflammatory drug treatment follow veterinarian recommendations.

---

#### **THERAPY FAILURE, SEVERE ACCIDENT or ACUTE DEATH**

**In the event of total therapy failure, severe injury, untreatable condition or acute collapse and death; that is, the animal is going to die or needs to be euthanized:**

- **Call veterinarians to determine if a necropsy is indicated.**
- **If no necropsy is needed, call the dead cow removal service (renderer) ASAP and try to arrange for him to dispatch and dispose of the animal.**
- **If the animal is suffering, it should be euthanized ASAP (see pages 9 & 20).**

## **ADULT COW HERD HEALTH MANAGEMENT**

### **Adult Cow Culling Procedures**

Cows may be identified as culls for a variety of reasons. Low production combined with a lack of reproductive efficiency is a prime reason another may be lameness or a predilection to mastitis or another disease or condition. These cows when identified are no longer eligible to be inseminated and when they are no longer profitable they will be sold.

Every effort will be made to maximize the income from the sale of these animals, whether saving enough of them to make a load for buyers to bid on or removing them as soon as we have a trailer load.

Sometimes there is a research project or training requiring the use of cull cows and as these requests are made we will try to save cows for that use. However if there is no such request it is usually better to move them as soon as possible after they are pulled from the production herd to prevent a disabling injury that would make the sale of them impossible.



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**UF DAIRY UNIT**


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**B - HERD HEALTH MANAGEMENT SOP  
REPRODUCTION MANAGEMENT**


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## REPRODUCTION MANAGEMENT Reproductive Therapy

### ANESTRUS

Condition: Cow without significant ovarian structures.

Treatment: Cows in anestrus condition will be enrolled in a Ov-synch56 protocol according to days in milk (see page 26).

### CYSTIC OVARY

Condition: Anestrus, follicle >15 mm, no CL, no uterine tone (per veterinarian)  
Cows may show abnormal heat cycles.

Treatment: Enroll in Ov-synch56 protocol and TAI (see page 26).

### INTRAPELVIC INFLAMMATION

Condition: Vaginal canal swelling extending to the vulva. Can lead to nerve paralysis and downer cow conditions.

Predispositions: Calving difficulties.

Treatment: Antibiotic and pain management according to veterinarian recommendations.

## REPRODUCTION MANAGEMENT Reproductive Therapy

### METRITIS

#### U4 - Toxic Metritis (Acute Puerperal Metritis)

Condition: Off feed (determined by daily milk deviation), +/- Ketosis.  
Cows show signs of sickness - depressed attitude, moves slowly.  
Temperatures abnormally - High or Low.  
Dehydration (+/-).  
Uterine discharge watery and fetid; uterus enlarged over the pelvic brim.

Predisposition: Retained placenta, calving difficulties, prolapse, fetotomy.  
Usually within 3-10 days after calving.

Procedures: Complete physical examination (see page 8).

Treatment: Antibiotic and anti-inflammatory drug treatment according to veterinarian recommendations.

**U3 - Nontoxic Metritis** -Uterus over pelvic brim.

- Condition: Watery, non-fetid vaginal discharge. Dark red to brown in color.  
No systemic illness
- Predisposition: RFM, Calving Difficulties, U4, Fetotomy.  
Usually 3-20 days postpartum.
- Procedure: Palpate uterus for size and discharges.
- Treatment: **None. Monitor.**

**U2 - Late Postpartum Endometritis**

- Condition: 20-26 DIM, enlarged cervix (<7.5 cm) with or without non-fetid vaginal purulent discharge.
- Predisposition: Retained placenta, U4, U3
- Treatment: None – make sure cow is enrolled in Presynch protocol (see page 26).

**U1 - Late Postpartum Metritis** – or veterinarian

- Condition: >26 DIM, mucopurulent vaginal discharge
- Predisposition: Retained placenta, U4, U3
- Treatment: None – make sure cow is enrolled in Presynch protocol (see page 26).

## REPRODUCTION MANAGEMENT

### Reproductive Therapy

**PROLAPSE**

- Condition: Uterus follows calf. This is an emergency call the veterinarian on call as soon as possible.
- Procedures: Cow Down. Extend rear legs to rear so that hocks are pointed up and top of foot is facing the ground extended behind cows hock. This places the cow back up straight and tilts pelvis down. Place a board (plywood section) under vulva and rest on the point of hocks with uterus supported here. Clean uterus with soap and water. An epidural anesthetic should be administered. Replace starting with the tip of the horn and using a closed fist and well lubricated arm. Use slow steady pressure **NO FORCE (This procedure will be performed by a Veterinarian).**
- Treatment: Calcium injectable product<sup>3</sup> - 1½ bottles IV, OR 1 tube Calcium gel PO.  
Oxytocin 2-3 ml IM

Antibiotic and anti-inflammatory drug treatment according to veterinarian recommendations

Watch for U4 conditions

<sup>3</sup> CalNate, CalDextro, CMPK, etc.

**PYOMETRA**

Condition: Uterine infection (pus in uterus), presence of a CL and cow is not cycling.  
Treatment: PGF 5 ml IM. Repeat second dose 12 hrs later.  
Follow up as instructed by reproductive exams.

---

**RETAINED PLACENTA**

Condition: Fetal membranes retained longer than 24 hrs.  
Treatment: Do not remove external membranes manually from the cow at any time. If cow had an unassisted delivery of calf, monitor for metritis and LDA according to the postpartum monitoring and physical examination (pages 8 & 11).  
If the cow had an assisted delivery, check for significant tears in the reproductive tract. Antibiotic treatment should be based on veterinarian recommendations.

Monitor cow for metritis and treat accordingly (page 20).

**NOTE:** Cows that do not pass RFM after day 5 should be left alone to pass membranes. Continue watching for signs of metritis/toxemia.

## REPRODUCTION MANAGEMENT

### Reproductive Therapy

#### POST SURGICAL CARE

Condition: Surgical C-section or Fetotomy.

Treatments: Antibiotic treatment and pain management follow veterinarian recommendations.  
Oxytocin 1 ml IM every 1-2 hrs for 3-4 treatments.  
Treat for dehydration (see page 13).  
Treat for ketosis (see page 15).

## REPRODUCTION MANAGEMENT

### Obstetrical Procedures

Conditions: Cows fail to make progress entering into or during labor. Failure to progress  
→ no change in labor status 45-60 min since last observation.

**STAGE 1: Cows entering into labor → positioning calf into birth canal.(1-4 hrs)**

**STAGE 2: Water breaks → calf in birth canal. Heifers (1-3 hrs); Cows (½-1 hrs)**

Symptoms: A> Failure to enter into labor. Cows are "nesting" and appear restless. Pacing and up and down. Cows are seen going down with no signs of contractions externally. Mucus plug has passed. Tails may be held out. Cows are usually not interested in feed and away from other cows. May see the first water break but not a consistent sign.

B> Cow in labor. Cows calve faster than heifers. Cows range from 1-2 hrs. Heifers range from 2-3 hrs. Progress should be made every 30-45 minutes once calf is in the birth canal. Once progress stops after 45-60 minutes the cow should be checked especially if breech or if a foot or nose is absent.

Procedures: **Thoroughly wash** cow before entering the vulva.

Use a well lubricated clean OB glove to check condition vaginally. If extraction is needed use the following guidelines:

Correct the problem: Notes on common presentations

- > *Head back:* Use of head snare greatly facilitates this problem.
- > *Front leg back:* Repel calf into uterus and reposition limb in pelvic canal. Take great care to avoid traumatizing the uterus by cupping hand over end of calf's foot as you retrieve the leg and position it in the pelvic canal.
- > *Upside down:* Rule out torsion. Attempt to 'flip' calf by repelling calf back into the uterus and twisting and rocking pushing and pulling on legs) the calf.
- > *Dog sitting:* Repel calf into uterus then push rear legs as far back into uterus as possible.
- > *Breech:* Repel calf into uterus as far as possible then reposition rear legs into pelvic canal. Take great care to avoid traumatizing the uterus by cupping hand over end of calf's foot as you retrieve the leg and position it in pelvic canal.
- > *Torsions:* Determine the direction of torsion by following the folds of the vagina. They will 'corkscrew one way or the other. Partial torsions (<90°) may be detorsed by twisting and rocking (alternately pushing and pulling on legs) the calf. More severe torsions will require experienced management or veterinary intervention.

**Call veterinarian on call for assistance if there is no progress in correcting the dystocia within 20 minutes.**

## REPRODUCTION MANAGEMENT

### Obstetrical Procedures

Treatments: A calving problem is not an EMERGENCY! Taking your time and doing things right will minimize trauma to the cow and the calf. Utilize the half hour rule!

***THE HALF HOUR RULE: If you have not made any progress in delivering the calf within ½ hour, STOP and get further assistance or call the veterinarian.***

Use **LUBE!**

Use **clean arms and clean cow.**

Use 2 chains -2 handles - pull alternately.

Use head chain or snare if needed.

**"RECHECK ALL COWS FOR TWINS"**

## REPRODUCTION MANAGEMENT

### General AI Procedures

#### ROUTINE AI SERVICE

- Procedures:
- \* Check OK to breed list or computer records for the absence of "C", "R" or "P" in repro code.
  - \* Check heat service interval. Allow to breed one abnormal interval.
  - \* Cows showing repeat abnormal intervals (3-15 days) should not be serviced. Mark record "R" with cystic health code (23-FC).
  - \* Record and evaluate the heat code condition.
  - \* Cows found in heat should be serviced at the next milking period.
  - \* Cows found in heat after service should be rebred.
  - \* Thaw semen properly - one straw at a time. Load no more than two guns at one time.

---

#### CULLS

- Procedures: Mark as a "C"  
Cows marked as a "C" should not be serviced.

Cows may be identified as culls for a variety of reasons. Low production combined with a lack of reproductive efficiency is a prime reason another may be lameness or a predilection to mastitis or another disease or condition. These cows when identified are no longer eligible to be inseminated and when they are no longer profitable they will be sold.

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## REPRODUCTION MANAGEMENT Timed Artificial Insemination

Population – All cows at first service cows with adequate BCS

Presynch / Ovsynch 56

<b>Day postpartum</b>	<b>Day of Week</b>	<b>Injections</b>	<b>Other</b>	<b>Responsibility</b>
38-44 (Presynch 1)	Thursday	PGF	BCS	DU
52-58 (Presynch 2)	Thursday	PGF		DU
64-70 (day 0 OvSynch56)	Tuesday	GnRH		Veterinarians
71-77 (Day 7 OvSynch56)	Tuesday	PGF		Veterinarians
2½ days (day 9.5 OvSynch56)	Thursday PM <sup>#</sup>	GnRH		DU
+16 hrs (Day 10 OvSynch56; day 0 of preg)	Friday		Inseminate	DU / Breeder
74+	Breed cows based on pedometers and visual estrus (very little)			DU
100-106 (33 days of preg)	Tuesday		Ultra-sound, if open re-synch	Veterinarians
Pregnant cows 47 days	Tuesday		Reconfirm	Veterinarians
Pregnant cows 75 days	Tuesday		Reconfirm	Veterinarians
Pregnant cows 214-220 days	Tuesday		Reconfirm	Veterinarians

- PGF : Prostaglandin
- GnRH: Gonadorelin
- Give injections while all cows are in barns
- Use 1.5 inch, 20 gauge needles for injections
- All injections and breeding in the AM unless indicated
- Use most economical product available for GnRH and PGF
- Breed all cows seen in estrus using pedometers. Use Afi software to identify and sort cows to be inseminated

<sup>#</sup> Give injection as close to 56 hours after PGF as possible. For example, if PGF injections are given at 8 AM Tuesday, the ideal interval for GnRH would be to give GnRH at 4 PM Thursday.

Cows that experience a 75% increase in walking activity determined by pedometer will be evaluated for estrus and suitability for breeding. Prior to breeding cows with an increase in pedometer activity (75%) breeding record, days in milk, pen movement and production will be evaluated and considered.

## REPRODUCTION MANAGEMENT

### Re-Synchronization Protocol for Lactating Cows

Population - Cows open on day of ultrasound or day of rectal palpation

<b>Day of Procedure</b>	<b>Day of Week</b>	<b>Injections</b>	<b>Other</b>	<b>Responsibility</b>
0	Tuesday	GnRH, (open cows)	Preg diagnosis	Veterinarians
7	Tuesday	PGF		DU
9	Thursday PM <sup>##</sup>	GnRH		DU
10	Friday		Inseminate	DU / Breeder
46	Tuesday		Preg diagnosis	Veterinarians

<sup>##</sup> Give injection as close to 56 hours after PGF as possible. For example, if PGF injections are given at 8 AM, the ideal interval for GnRH would be to give GnRH at 4 PM the next day.

## REPRODUCTION MANAGEMENT

### Timed Artificial Insemination (TAI) for Heifers

Population - heifers will be at least 50 inches tall and weigh greater than 800 lbs at the start of the synchronization protocols.

On the day of enrollment to breeding protocol (CIDR<sup>®</sup> – Co-Synch) information concerning body condition score (BCS; 1 to 5), ovarian structures and birth date will be recorded.

<b>Day of Procedure</b>	<b>Day of Week</b>	<b>Injections</b>	<b>Other</b>	<b>Responsibility</b>
0	Thursday	GnRH	CIDR <sup>®</sup> in	Veterinarians
5	Tuesday	PGF	CIDR <sup>®</sup> out	Veterinarians
6	Wednesday	PGF		DU
7	Thursday		If seen in heat, inseminate	DU / Breeder
8	Friday	GnRH	Inseminate	DU / Breeder
32-33	Tuesday		Preg diagnosis via ultrasound	Veterinarians
45	Tuesday		Preg confirmation	Veterinarians
74	Tuesday		Preg confirmation	Veterinarians

Heifers detected in estrus on Thursday will be 'cherry-picked' and inseminated on that day (DU).

Pregnancy status will be determined by ultrasound 32-33 d after TAI.

Heifers diagnosed pregnant will be reconfirmed by rectal palpation at 45 and 75 d.

---

### RE-SYNCHRONIZATION PROTOCOL

Heifers diagnosed non-pregnant at ultrasound or palpation will be re-enrolled in timed AI protocol described above.

Heifers that are open after 5 breedings will be evaluated for further breeding or culling.

## REPRODUCTION MANAGEMENT Records and Analyses

- Procedures: Weekly - Heat detection rate calculated from PPR  
Cows serviced weekly list  
Short cycle list  
Heat expectancy list  
Cows OK to breed list (printed weekly)
- Monthly - Conception rate summary (All and individual-AI techs)  
Conception rate summary (Heat techs)  
Conception rate summary (Sires)  
Short cycle evaluations  
Health summary by Repro codes  
PCDHI reviews  
Reproductive Economic Analysis

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**UF DAIRY UNIT**


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**B - HERD HEALTH MANAGEMENT SOP**  
**MILKING MANAGEMENT**


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## MILKING MANAGEMENT

### Milking Management Practices

#### A. MILKING PARLOR Setup:

BE PREPARED TO START AT THE SCHEDULED TIME.

1. Remove jettor cups from units.
2. Snap claws back on take-off ropes.
3. Re-hang jettors in bracket.
4. Switch transfer pump boxes to off position.
5. Replace long white plugs with short white plugs.
6. Go in milk room, turn milk/wash switch to milk.
7. Release cap under filter and install a new sock.
8. Replace cap under filter, make sure clamp is tight.
9. Hook milk line to proper tank.
10. Go back in parlor and enter "741" on one meter on each side to start milking
11. Close front and rear gates, roll the exit reel before allowing cows to enter.
12. Make sure cows are showered and dry.
13. Check milk room to make sure pipe is in tank and cooler is on, if the tank has milk in it.

#### B. MILKING PARLOR Loading:

1. Open one entrance gate and load one side of the parlor, then the other.  
**WHEN LOADING THE PARLOR:**
  - Do not run cows in both sides at once. Close back gate on one side and load the other using the crowd gate to encourage the cows to enter if necessary. If you have to enter the cow platform use a calm easy voice and gesture to get cows to enter. **DO NOT USE FORCE!!**
2. Once you have 12 cows in the parlor, shut the entrance gate on that side open the other side and start the milking procedure from the front of the parlor.

## MILKING MANAGEMENT

### Milking Management Practices

#### C. CURRENT MILKING PROCEDURE:

All milkers will wear gloves to facilitate hygiene.

FIRST FOUR COWS. Dip all the skin on every teat<sup>4</sup> with teat dip.

Strip 3-4 squirts out of each teat<sup>a</sup> to look for abnormal milk/mastitis<sup>b</sup>

RETURN TO THE FIRST COW. Wipe each teat carefully to remove any iodine or debris.

Hang the milking claw on the cow.

REPEAT FOR THE NEXT FOUR COWS AND SO ON

When this line is all milking, start on the other side repeating the previous steps.

Your goal should be to have a constant rhythm from one side to the other throughout the milking, not milk two lines at once.

When the cow is milked, dip all the skin on every teat<sup>a</sup> with teat dip.

When the whole line is dipped release them and begin the process again until all the cows are done.

Liner slips: Adjust machine as soon as possible. Folding liners over should be avoided unless liner slip can not be corrected with machine adjustment.

Hygiene: Keep machines clean and free of manure. Hose machines as needed between sides, not while hanging on cow. Rinse gloves frequently and avoid milk contact on gloves.

#### D. POT COWS:

Pot cows are cows that are treated with medication that makes their milk unmarketable. If they get milked in the tank the whole tank is contaminated and must be dumped. If this ever happens notify the appropriate person **IMMEDIATELY.**

Set up for pot cows before they enter the parlor.

1. Use the manual pump out switch to pump all the milk that is in the receiver to the tank.
2. Go in the milk room, release the clamp and cap under the filter tube remove filter change sock and replace cap and clamp.
3. Pull pipe out of tank and connect to lines to bypass milk tank. Plug hole in top of tank and place the pipe in chlorinated water in sink.
4. Clean any spilled milk off the tank, walls, filter pipes, wash vats(front, back, inside, and out) and floor with soap and water,-not just a rinse.
5. Hook up to catch enough pot milk to fill the buckets the calf units leaves.
6. You are now ready to milk the pot cows.
7. After the shift the supervisor or his designee will deliver the buckets of pot milk to the calf unit and put them in the freezer and load the milk in the freezer into the pasteurizer.

---

a **every teat..** each teat: Blind teats indicated by leg bands do not need to be dipped and stripped

## **MILKING MANAGEMENT**

### **Milking Management Practices**

#### **E. FINISHING UP:**

1. Pull jettor cups out of hangers.
2. Unhook the milking claw from take-off rope and hang it in the bracket.
3. Pump out the receivers.
4. Turn off vacuum pumps.
5. Replace short white plug with long white plugs located by the receiver.
6. Soak shot white plugs in chlorinated water in sink in milk room.
7. Connect pipes in wash vat.
8. Turn milk/wash switch to wash.
9. Turn the automatic CIP cleaner on.
10. Measure the amount of milk in the tank and record it in the parlor office on the proper form.
11. Make sure dip jugs are full for the next shift.

CLEAN THE PARLOR

BUTT BOARDS

MILK LINES

CLAWS

FLOORS

BREEZEWAY

WALLS BEHIND THE PIPELINES

12. You are expected to keep the parlor tidy when milking, no trash on the floor, and minimal amount of manure on floors, machines, and walls.
13. Along with the pusher you are to keep the exit reel, fans, crowd gate and shower area clean.

**Use only soap or acid foamer to clean with, no acid or sanitizer.**

**REPORT ANY PROBLEMS WITH COWS OR MACHINES TO YOUR SUPERVISOR**

**If you cannot be here for your scheduled shift, please notify your supervisor at least 8 hours before your scheduled time.**



## MILKING MANAGEMENT

### Parlor Checks and Maintenance Schedules

#### PARLOR CHECKS

##### Premilking

- Check: Check equipment before and at the beginning of each shift.
- \* General cleanliness
  - \* Supply check
  - \* Check liners and air tubes for holes
  - \* Check first line of cows for pulsator function and claw air vents
  - \* Refrigeration temperature and agitation
  - \* Milk socks

Maintenance Schedules (Parlor supervisor will maintain this schedule):

System Checks -----	Biweekly
Liner changes -----	per Manufacturer Recommendation (~3 wks)
Milk hose -----	Monthly
Pulsators -----	Biweekly
Air tubes -----	Weekly
Pulsator lines -----	Weekly
Regulator filters -----	Weekly
Vacuum pumps -----	Quarterly
Compressors -----	Monthly
Milk line gaskets -----	Monthly

## **MILKING MANAGEMENT Mastitis Monitoring**

### **BULK TANK**

- \* Samples tested for antibiotics residue after every shift.
- \* Samples taken monthly for complete bulk tank evaluation.

### **OTHER CULTURES**

- \* Samples will be taken on a periodic basis (as determined by management and vets) from new clinical cases of mastitis.

### **DELVO TEST**

- \* Delvo will be performed on all treated and fresh cows before returning to milking string.

## MILKING MANAGEMENT

### Dry-Off Procedures

1. Selected cows should be identified for the normal vet check day and pregnancy re-confirmed. After they are confirmed pregnant, vaccinate with appropriate vaccines listed in Herd Vaccination Protocol.
2. Selected cows should be pulled out of their barns and milked together. Each cow's number should be verified.
3. In parlor:
  - a. Cow's udder should be clean and dry!
  - b. The cow should be completely milked out and hand stripped if needed.
  - c. Wipe each teat with an alcohol pad using the following method:
    - Wipe two quarters furthest away first, then the two quarters closest to you next. Be careful not to touch any teat after it has been wiped or it will need to be re-done.
  - d. Infuse dry cow intramammary medication into each teat using the following method:
    - Infuse quarters closest to you first with both dry cow intramammary medication and Orbaseal<sup>®</sup> before treating quarters farthest from you.
    - Using only the very tip of the infusion tube for both products.
    - Immediately follow dry cow intramammary infusion into the near quarters, infuse Orbaseal<sup>®</sup> using the same tip of the tube technique
    - Do not massage Orbaseal<sup>®</sup> out of teat into the mammary gland.
    - CLARIFY! : That would be treat and Orbaseal<sup>®</sup> the two teats closest to you first then the two furthest away.
    - It is ok if you bump or touch the teats after they are quarter treated and Orbasealed.
  - e. Teat dip and let dry.
4. After udder treatment:
  - a. Remove transponder.
  - b. Trim tail switch.
  - c. Be sure each cow has two 'readable' ear-tags.
  - d. Give each cow one insecticide application for fly control in the dry pasture.
  - e. Body condition score.

## MILKING MANAGEMENT

### Mastitis Therapy

#### TOXIC MASTITIS (Hospital Barn Code 4)

Condition: Cow quarter hot, swollen, hard and painful with watery or serous secretion.

Cow shows systemic signs of illness:

- > Temperature - abnormal high or low
- > Rumen stasis (no rumen motility), off feed
- > Cow is depressed
- > Cow may have diarrhea
- > Fresh cows or springers may act like milk fever
- > Dehydration - variable in severity
  - 'sunken eyes'

Treatment: Systemic Treatment

- Oxytocin 2 ml IM- Hand strip quarters dry at milking.
- Fluid replacement therapy:
  - Hypertonic saline: 1-2 liters of hypertonic saline IV, followed with 5-10 gals. of water mixed with fresh cow drench as indicated by herd veterinarian.
  - Volume replacement: see page 11
- Antibiotic and non-steroidal treatment follow veterinarian recommendations.
- Intramammary Treatment : Not necessary.

## MILKING MANAGEMENT

### Mastitis Therapy

#### ROUTINE MASTITIS, Not Toxic

Condition: Presence of significant flakes and clumps in milk.  
Abnormal milk but cow is not sick.

Symptoms: Abnormal milk but cow continues to eat although less than normal.  
Milk production decreased 20-50%.  
Temperature - Normal to slightly elevated. 101.5 - 103 in AM.  
Udder - mild to moderate swelling.

Treatment: Antibiotic treatment and management follow veterinarian recommendations

Procedures: After milking hand strip quarter dry.  
Clean teat with 4x4 alcohol pad and exam teat end for dirt before treatment.  
Use only partial insertion (1 /8" max). Record quarter, treatment, date on day log for computer input. (of new case).  
If quarter fails to improve, discontinue antibiotics and have management make one of the following decisions:

- > Dry quarter off.
- > Dry cow off.
- > Mastitis cull (after appropriate antibiotic withdrawal)

**IMPORTANT: Prior to starting treatment**

- > **Review production**
- > **Prior health history and mastitis treatment history**
- > **Reproductive and Cull status**

## MILKING MANAGEMENT

### Mastitis Therapy

#### DRY COW MASTITIS

Condition: Swollen quarter, presence of significant flakes and clumps in milk of dry cow.

Symptoms: Abnormal milk in dry cow.

Temperature - Normal to slightly elevated. 101.5 - 103 in AM.

Udder - moderate to severe swelling.

Cow may or may not be sick

If cow is clinically ill (toxic mastitis), refer to toxic mastitis treatment (pg 40?).

Treatment: Antibiotic treatment follow veterinarian recommendations

Procedures: **STRIP AFFECTED QUARTER ONLY !!**

hand strip quarter dry.

Clean teat with 4x4 alcohol pad and exam teat end for dirt before treatment.

Use only partial insertion (1 /8" max). Record quarter, treatment, date on day log for computer input. (of new case).

**Action: If isolated event, no action required.**

**If pattern seen, review dry cow / springer environment and/or drying off procedures.**

## MILKING MANAGEMENT

### Mastitis Therapy

#### NO TREAT PROGRAM

Conditions: **NO** Strep. agalactiae in bulk tank samples.  
Bulk tank samples pulled 2-4 times monthly.

Procedures: Cows with mastitis that are not showing any systemic signs and the udder is not appreciably hard, hot painful or swollen.

Cows **NOT** eligible for the 'no treat' program are those with:

- > heat, pain and/or swelling of the affected quarter
- > early lactation cows
- > systemically affected cows - depression, dehydration, rumen stasis, etc

Herds: Daily identification of 'no treat' cows. These cows are followed daily for signs of improvement or deterioration.

Cows that do not clear within 48 hrs (4 shifts) should be considered for treatment, dry off or culling unless that quarter is designated as chronic.

Cows that show multiple infections or changing quarters should be cultured and treated.

---

#### NON-SALEABLE MILK FROM HOSPITAL PEN

Purpose: To provide high quality, low bacteria count non-saleable milk as feed for calves.

Procedure:

- Collect enough non-saleable, hospital milk on night shift to fill the buckets left by the calf unit to supply the needed milk for the next day's feeding.
- The night supervisor will deliver this milk to the calf unit and put it in the freezer for the next afternoon feeding.
- The night supervisor will take the buckets from the freezer (in the calf unit) left the previous afternoon and pour them into the pasteurizer to be ready to start the pasteurizing cycle at 3:30 A.M.
- The calf unit crew will pick up the hospital milk collected by the day shift and take it to the calf unit and put it in the freezer for the next morning.

## DAIRY HERD HEALTH PROGRAM

### DAIRY RESEARCH UNIT

#### B - HERD HEALTH MANAGEMENT SOP REPLACEMENT HERD HEALTH MANAGEMENT

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## REPLACEMENT HERD HEALTH MANAGEMENT

### Colostrum Management

Importance: Newborn calf has virtually no immunity at birth. Protection against diseases comes through feeding of high quality colostrum very early in life.

Procedure: First colostrum feeding

- Feed colostrum as soon as possible, no later than 1 hour, after birth.
- Feed the highest score possible for the first feeding (heifers at least 70, bulls 50-65).
- Feed 1 gallon (4 quarts).
- Attempt to feed colostrum with nipple bottle first. If calf does not drink 1 gallon or drinks none at all, tube feed the remaining amount so the calf receives 1 gallon at first feeding.

Second colostrum feeding

- Feed 2<sup>nd</sup> colostrum ( $\frac{1}{2}$  gallon) at next scheduled feeding after the 1<sup>st</sup> feeding (unless the 2<sup>nd</sup> feeding would be within 2 hrs of 1<sup>st</sup> feeding).

**Always** record these treatments on the colostrum sheet kept in the calf barn.

## REPLACEMENT HERD HEALTH MANAGEMENT Newborn Calf Procedures

### ***If the calf is a Holstein heifer that we intend to raise as a herd replacement:***

1. Dip navel with strong Iodine immediately.
2. Give 2 ml of Vitamin E and Selenium supplement (Injection) IM
3. Give 2 ml Vitamin A and D IM
4. Give a modified – live rota and coronavirus oral vaccine.
5. Give one vial of Intranasal IBR and PI3 viral vaccine divided between each nostril.
6. Tag with 2 legible ear tags noting the birthdate.
7. Tag with RFID in left ear.
8. Feed colostrum as soon as possible, no later than 1 hour after birth. Feed 1 gallon of the highest score possible for the first feeding. Attempt to feed colostrum with nipple bottle. If calf does not drink 1 gallon or drinks none at all, tube feed the remaining amount so the calf receives 1 gallon at first feeding.
9. Feed 2<sup>nd</sup> ½ gallon of colostrum at next scheduled feeding after the 1<sup>st</sup> feeding (unless the 2<sup>nd</sup> feeding would be within 2 hrs of 1<sup>st</sup> feeding).
10. Always record these treatments on the colostrum sheet kept in the calf barn.

### ***If the calf is a crossbreed or a bull or a freemartin (twin heifer to a bull)***

1. Dip the navel with strong Iodine immediately.
2. Tag with one yellow tag noting crossbreed, bull, or freemartin.
3. Give 2 ml of Vitamin E and Selenium supplement (Injection) IM
4. Give 2ml Vitamin A and D IM.
5. Give a modified – live rota and coronavirus oral vaccine.
6. Give one vial of intranasal IBR, PI3 virus vaccine dividing the dose between each nostril.
7. Feed Colostrum with a score of 50-65 or below as soon as possible. Feed these animals exactly as you would Holstein heifers.

## REPLACEMENT HERD HEALTH MANAGEMENT

### Calf / Heifer Feeding Management

#### BABY CALVES – Feeding Schedule by Age

1. First day, 1gallon (4 quarts) of colostrum 70 or better as soon as possible, preferably within the first one hour of birth. **Feed the highest score available.** Two quarts of colostrum at the next feeding (70 or better).  
**NOTE:** Normally the first feeding is dictated by when the calf is born and the second feeding is at the next appointed time followed by the third. If no high scored colostrum is available feed powdered colostrum.
2. Day 2 to day 30: 2 quarts of milk offered AM and PM. Also start calf starter and water on the second day. Amount fed is increased to 3 quarts AM and PM during cooler months.
3. Day 7 to day 21: Electrolytes are added to water if the calf has diarrhea.
4. Day 42 to day 48: 2 quarts of milk offered at the morning feeding only, we are beginning the weaning process. (This stimulates grain intake and provides a smooth transition into weaning.)
5. Day 49 to day 58: 3/4 bucket of fresh feed is offered every morning and is 'topped up' as needed in the afternoon.

**NOTE:** Day 49 is a weaning suggestion, it can happen earlier or later depending on the grain intake of the calf. A good rule to follow is if a calf is eating at least half of a bucket of grain daily for three consecutive days (2-3 lbs) **AND** is free of illness she can be weaned. Some calves wean at 42 days and some wean at 50 to 60 days.

6. Day 58 to day 60: calves can be turned out to group pens of 8 to 10 depending on pressure in the barn.

## REPLACEMENT HERD HEALTH MANAGEMENT

### Calf/Heifer Management

#### **BABY CALVES - Milk Feeding Procedures**

CALVES ARE OFFERED 2 QUARTS OF MILK TWICE A DAY, AT LEAST 8 HOURS APART.

1. Always start at the youngest calves first, (the youngest calves have a weak immune system and by feeding them first there is less chance of germs being spread.)
2. Feed calves that drink from a bucket first.
3. Go back and work with the ones that are still learning to drink from a bucket. Wash hands in between calves so that you will not be spreading germs.
4. Tend to any sick calves last.

**IT IS VERY IMPORTANT THAT EACH CALF DRINK AT LEAST 2 QUARTS OF MILK PER FEEDING.**

5. If any calves have serious scours, they can skip one feeding; give them a warm bottle of electrolytes instead of their milk.

#### **IF A CALF WILL NOT DRINK FROM A BUCKET:**

6. Work with the calf to see if you can get her to drink from a bucket--if not:
7. Offer the calf a bottle and physically work with the calf to get her to drink. Don't give the bottle more than 1 or 2 times as this will slow her learning to drink from a bucket, she will expect a bottle every time.
8. Inform the supervisor of a calf that is particularly stubborn about bucket training.

After each feeding wash each bucket with hot soapy water and turn upside down to drain. **NEVER** share buckets between calves.

**NOTE:** DO NOT leave milk in a calf pen longer than 15 to 30 minutes to prevent bacterial growth and ingestion by calf. The Supervisor will increase the milk at the appropriate time according to each calf.

## REPLACEMENT HERD HEALTH MANAGEMENT

### Calf / Heifer Feeding Management

#### POST-WEANING CALVES

1. Feeding day 90 to day 120: Calves are fed two different types of feed at a rate of 5 to 7 pounds per head per day of calf starter and 5 to 10 pounds per head per day of batch mix ration.

**\*\*\*\*NOTE:** Amount of calf starter stays constant from day 90 to day 120 but the amount of batch mix should be stepped up gradually from 5 to 10 pounds per head per day. (This allows for a very smooth transition onto a complete batch mix diet because it builds volume in the gut gradually.)\*\*\*\*

2. At about day 130, calves should easily consume 17 pounds of batch mix diet in a 24-hour period. At this time the calf starter can be stopped. At this point calves can be moved to larger pens (7 thru 10) in groups of 18 to 20 heifers and fed as follows on the current ration:

5 to 7 months	20 pounds per day
7 to 9 months	22 pounds per day
9 to 11 months	24 pounds per day
12 months	25 pounds per day per head

**NOTE:** The nutritionist may change the batch mix ration so we will adjust accordingly.

The smaller pens that are on batch mix need to be weighed weekly to gauge how well they are consuming the current ration.

**\*\*\*\* Management may change the ration so this schedule will be adjusted as needed \*\*\*\***

## REPLACEMENT HERD HEALTH MANAGEMENT

### Calf Barn Management

#### CALF BARN ROUTINES

1. CHECK ALL HEIFERS IN THE CALF BARN: Walk the barn and observe all calves. Look for any signs of an illness such as a running nose, scours, bloating, dehydrated, labored breathing, coughing or any other sign of distress.
2. CHECK BULLS AND PENS 1 THRU 6: Check the bulls for any signs of illness. If we intend on keeping them they are in order in the calf barn. Walk the lane and check for any signs of illness such as those listed above. Check answering machine at calf unit upon arrival at work. Any newborn calves should be picked up ASAP, also check refrigerator for colostrums and bring it back to the calf unit to score.
3. CHECK THE FLUIDS IN THE CALF TRUCK: Check the oil, water, power steering fluid, and the air in the tires. Record on the log sheet daily. This is kept inside of the truck.
4. BEGIN THE MORNING FEEDING: Warm any colostrum, heifers get three colostrum feedings and bulls get three. Feed the heifers a score of 70 or higher, preferably on the first feeding the highest score available. Dip navel with Tincture of Iodine all three feedings. Feed the bulls three Colostrum feeding's of a score of 65. Dip the navel with Tincture of Iodine.
5. PREPARING THE MILK TO BE PASTEURIZED: The supervisor on the night shift at the parlor will have delivered the pot cow milk in the buckets left at the parlor for today's feeding. He will pour it into the barrel for the pasteurizer. The pasteurizer is set to begin the pasteurizing process at 3:30 a.m. so the milk is ready to feed at 6:00 a.m. The calf unit personnel will set the pasteurizer each afternoon to be ready for the morning cycle. To set the pasteurizer: 1. Begin with the display stating "Idle". 2. Press start the panel will; display "Now". 3. Press the up button 2 times until "Delay 2" is displayed. 4. Press the start button once more "3:30" start time will be displayed. 5. Press the start button one more time until "Delay 2" is displayed, the pasteurizer is set to start at 3:30 a.m. The milk will be ready to feed at 6:00 a.m.

Re-pasteurize the milk for the afternoon feeding. Press start and the pasteurizer should begin the cycle. The cycle takes 30-45 minutes so start the pasteurizer early enough to be ready for the afternoon feeding.

CLEAN THE PASTEURIZER: Raise to coil from the drum using the hand crank. Rinse all the foam away until the water runs clear from the spout at the bottom of the tank. Close the spout and put at least a foot of clean water in the tank, add chlorinated foamer to the water and scrub with a brush. (Wear safety equipment for this, eye protection and gloves). Using a "Scrubby" clean all the coil tubing, the agitator, and the temperature probe, the underside of the top and the inside of the tank. Then take a bottle brush and clean the inside of the spout. Rinse thoroughly. Lower the top using the hand crank. Refer back to "Set the Pasteurizer" and begin. The pasteurizer is ready for the night shift supervisor to begin his duties.

## REPLACEMENT HERD HEALTH MANAGEMENT

### Calf Barn Management

#### CALF BARN ROUTINES (continued)

6. **PREPARE MILK:** Five gallons of milk will feed 8 calves. When mixing milk together add 8 teaspoons of Deccox<sup>®</sup> per 5 gallons of milk. A full tote will feed 24 calves (15 gallons). Put the tote that holds the milk under the spout, add the proper amount of milk and Deccox<sup>®</sup> and milk to fill the tote. Feed one scoop of milk to the black and green buckets, always remember to start at the youngest calves first. Add 2 scoops of Tri-Mic WD<sup>®</sup> to the top of milk for the calves with black buckets. This is a medicine (A Direct-Fed Microbial—DFM—for dairy and beef calves). Record all colostrum information in the heifer book. Use the blue buckets for milk only and do not share between calves. Feed any colostrum at this time. There will be milk left in the pasteurizer for the afternoon feeding. It will have to be pasteurized as noted above. The milk will increase in the winter months on the advice of the Calf Unit Supervisor. He/She will decide when the time is right to increase each individual calf.
7. **CLEAN AREA:** After feeding the morning milk and colostrum, pick up all blue buckets, if there is any milk in the bucket try to get the calf to drink by letting her suckle your finger submerged in milk. Do this as soon as possible. The milk does not need to sit for any length of time because all of the medicine goes to the bottom of the bucket. Wash the 5 gallon milk buckets in hot soapy water with sanitizer. Put all the blue buckets to soak in the sink making sure that every bucket has water in it. Clean all nursing bottles and esophageal tubers in the sink with the blue buckets.
8. **FEED GRAIN AND WATER:** Pick up all of the weigh back in the calf barn and put in 5 gallon buckets to feed outside. Any feed that is wet or has manure in it put in an empty feedbag to discard in the dumpster. Any bucket that is dirty replace with a clean one of the same color. Mix 50 pounds of grain in the wheel barrel along with one small bucket of Aureomycin<sup>®</sup> Crumbles. There is a bucket system for tracking the growth of the calves: Newborn to four weeks receive a black bucket and milk twice a day. Four to Five weeks receive a green bucket. Six weeks will have a white ring placed on the outside of the hutch to signal that they receive milk only in the afternoon. Seven to Eight weeks will receive a red bucket. This means no milk. They will be Vet checked and should be consuming three to four pounds of grain per day before turn out to pen one. All calves receive two red buckets for water. The bulls get milk twice a day either by nursing bottle or bucket; they receive grain and get a red bucket for water. Refill grain buckets: Black buckets depending on their age, a sprinkle of grain to a half of a scoop. This needs to be regulated to how well they are eating. Green buckets get from a half of a scoop to a whole scoop, regulate accordingly. Red buckets get a whole scoop to two scoops. Pen number one will receive calf starter. Empty all water buckets and scrub with a "Scrubby" to clean. Refill and add Electrolyte to buckets where scours are present in the pen. Any calves that look dehydrated give a warm bottle of Electrolyte at midday. Give any treatments at this time.

## REPLACEMENT HERD HEALTH MANAGEMENT

### Calf Barn Management

#### CALF BARN ROUTINES (continued)

9. CALF PICKUP: Calves are picked up from the Maternity Barn twice a day. Morning pickup occurs just after morning feeding. Afternoon pickup occurs just before leaving for the day. The calf transport vehicle is to be cleaned and sanitized after each use.
10. HOUSEKEEPING: After all of the calves are fed and watered use this time to do housekeeping chores. This includes cleaning beds for the calves, start at the worst ones and remove the top layer of sand that is dirty, spray with a sanitizer solution and sprinkle with lime. Clean beds every day to keep a clean barn. Sweep hallways and the inside of the storage area. Empty trash in the barn, the outside barn and in the restroom weekly. When time allows mow around the barn and pen areas. Think CLEANLINESS at all times.
10. AFTERNOON FEEDING: at 11:00 a.m. start the pasteurizer for the afternoon feeding. Take the number of buckets you will need for the following day's feedings to the parlor. Remember five gallons will feed eight calves. Check the refrigerator and freezer again for colostrum. Return to the calf unit and warm any colostrum for the afternoon feeding. Empty milk in the mixing container and add the proper amount of Deccox<sup>®</sup>. Feed the black and green buckets. Don't forget the green bucket's that have the white ring's, they only get milk in the afternoon. Feed the bull's; always start at the youngest calves first. Feed any colostrum and record in the heifer book. Wash all blue buckets; 5 gallon buckets, nursing bottles and tubers. Check grain so that there will be enough to last throughout the night, check and refill all water as necessary for the heifers and the bulls.
11. AFTERNOON CHORES: push up the feed for all outside pens. Check the water troughs make sure they are clean and full and not running over. Check any heifers that may be in the outside barn to be sure they have feed and water. Close the gate by pen 10. Close the main gate on your way home.



## REPLACEMENT HERD HEALTH MANAGEMENT

### Calf/Heifer Health Monitoring

#### ILLNESSES AND TREATMENTS

The following is an outline of common problems and suggested initial treatments. This list is not a complete diagnosis and treatment protocol that will take care of every problem, but it should act as a good guide for making decisions on most cases. If at any time there is an abnormality or a question about the diagnosis of a particular disorder, contact the Heifer Supervisor or another person experienced in Herd Health. Furthermore, the treatments listed below apply only to heifers we intend to raise as herd replacements. Bulls, crossbred calves, and freemartins will be dealt with on an individual basis.

---

#### ROUTINE CALF HEALTH MONITORING

- 1 Check the navel of ALL calves less than 3 weeks old daily.
- 2 Do all procedures with 'sick' calves, including physical exam, after finishing work with healthy calves.
- 3 Before treating a sick calf inform the supervisor whenever possible.
- 4 Be sure to keep an accurate record of **ALL** treatments on the daily treatment sheet, this includes all medications.

**If there is ever any doubt take the calf's temperature.**

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#### PHYSICAL EXAMINATION

- \* Do all procedures with 'sick' calves, including physical exam, after finishing work with healthy calves.
- \* Normal Temperature - 102.5 - 103.5 in AM
- \* Check for fecal consistency
- \* Check overall demeanor, ie. bright, depressed, weak, etc
- \* In young calf, check navel for evidence of infection
  - > Swelling - navel larger around that thumb and firm
  - > Discharge - any discharge is abnormal
  - > Raw-looking or bloody after first day is abnormal
- \* Check respiratory rate and effort; normal rate <40 bpm
- \* Stethoscope - lungs should be clear; if loud or raspy 6 abnormal
- \* Check for bloat, injury, etc

## REPLACEMENT HERD HEALTH MANAGEMENT

### Calf/Heifer Disease Therapy

#### POOR ATTITUDE (Depressed)

Condition: Calf is slow to drink, ears down, normal temperature, decrease in activity level, calf appears healthy.

Procedure: Perform full physical examination as noted above.

Treatment: 5 ml Vitamin B-12 IM  
If no improvement, schedule veterinary consult.

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#### ARTHRITIS

Condition: Swelling in one or more joints  
Showing pain when standing  
+/- weak calf

Treatment: See section on Septicemia

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#### BLOAT

Condition: Gaseous distension of left flank.  
At risk of dying from suffocation.  
Post-weaned calves often have respiratory disease associated with bloat.

Procedure: Check for respiratory disease and treat accordingly.

Treatment: Pass stomach tube and let off gas.  
Therabloat<sup>®</sup> orally (2-4 oz mixed in 16-32 oz water).  
Put on long stem hay for a few days.  
If condition occurs in calf under 6 wks-of-age, the calf may be a 'rumen drinker'; try feeding milk from nipple bottle.

Action: Review nutrition program.

## REPLACEMENT HERD HEALTH MANAGEMENT

### Calf/Heifer Disease Therapy

#### DEHYDRATION

Condition: Body fluid loss from diarrhea or septicemia

##### Early signs

- > dry hair coat
- > skin tent (grab a pinch of skin and twist it. Normally the twist disappears immediately after you let go of skin; in dehydration, skin tent (or twist) remains >2 seconds).
- > listless calf

##### Later signs

- > severely sunken eyes
- > very dry hair coat
- > skin tent remains indefinitely

Treatment: Oral fluids

- Follow label directions **exactly**
- Warm electrolytes to body temperature
- Feed with nipple bottle if calf off feed
- Use esophageal feeder only as last resort

##### IV Fluids

- Severe diarrhea/dehydration: isotonic saline solution with 15 g Na-bicarb and 60 ml 50% dextrose added per liter
- Warm fluids to body temperature
- Clip hair over jugular vein
- Scrub injection site with alcohol soaked gauze
- Use 16g needle or 16g catheter
- Administer 2-3 liters of solution per treatment

## REPLACEMENT HERD HEALTH MANAGEMENT

### Calf/Heifer Disease Therapy

#### DIARRRHEA

##### <24-36 hrs

- \* Probable cause: *E. coli* or clostridium
- \* Treatment: one tube of Ecolizer<sup>®</sup> or VCA antitoxin (15 ml SC)
- \* Action: Review sanitation in colostrum collection and colostrum feeding

##### First 3-5 days

- \* Probable cause: *E. coli*
- \* Yellow to white watery diarrhea
- \* Calf at risk of severe dehydration
- \* Be sure to check navel!
- \* Treatment
  - Oral electrolytes used exactly as label directions indicate
  - Gut protectants (Bismusol<sup>®</sup>)
  - Calf gel as needed (follow label directions)
  - If navel enlarged or temperature elevated, start on Septicemia treatment (see below)
  - If non-responsive, veterinary examination
- \* Action - check colostrum program
  - check sanitation in colostrum collection procedures
  - check vaccination program in dry cows and heifers

##### One-Three Weeks-of-Age

- \* Probable causes - Rotavirus, coronavirus, cryptosporidia
- \* Yellow to grey watery diarrhea +/- flecks of blood
- \* Often foul smelling
- \* Calf usually not at great risk of dehydration unless septicemic also
- \* Be sure to check navel!
- \* Treatment
  - Oral electrolytes used exactly as label directions indicate
  - Gut protectants (Bismusol<sup>®</sup>) per label directions
  - If navel enlarged or temperature elevated, start on Septicemia treatment (see below)
- \* Action - Upgrade sanitation if needed.
  - Monitor colostrum quality (colostrum bacterial counts)

## REPLACEMENT HERD HEALTH MANAGEMENT

### Calf/Heifer Disease Therapy

#### EAR INFECTIONS (Otitis Media)

Condition: Can be associated with respiratory problem or can occur by itself.  
Droopy ear +/- pus in ear canal.  
Pain in ear as indicated by scratching ear or headshaking.  
+/-facial paralysis (cannot blink).  
+/- fever (>103 F)

Treatment: Antibiotic treatment according to veterinarian recommendations.

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#### PINKEYE

- \* Early signs
  - > tearing of the eye(s)
  - > squinting
- \* Later signs
  - > severe tearing
  - > eye kept closed
  - > center of eye is white to pink in color
  - > blood vessels of eye bright red
    - \* Treatment: -Antibiotic treatment according to veterinarian recommendations.
- \* Action - Fly control.
  - Dust control.

## REPLACEMENT HERD HEALTH MANAGEMENT

### Calf/Heifer Disease Therapy

#### **PNEUMONIA (Respiratory)**

- \* Sick, weak calf usually greater than 2 weeks-of-age
- \* Snotty nose, increased respiratory rate
- \* Temperature > 104.0° F
- \* +/- bloat
  - \*Treatment -Antibiotic treatment according to veterinarian recommendations.
  
- \* Action
  - Check stocking rate of group pens.
  - Review feeding management.
  - Review vaccination and parasite control program.

---

#### **SALMONELLA**

- \* Sick, dull, weak calf less than 4 weeks-of-age
- \* Temperature variable, usually >104.0°F
- \* Navel +/- enlarged
- \* +/- diarrhea
- \* +/- swollen joints
- \* Treatment - Antibiotics as directed by veterinarians
  
- \* Action - Review colostrum management and Maternity sanitation.

## REPLACEMENT HERD HEALTH MANAGEMENT

### Calf/Heifer Disease Therapy

#### SAND IMPACTION

- \* Unthrifty calf less than 4 weeks-of-age
- \* Temperature variable
- \* Appetite variable
- \* +/- diarrhea
- \* Treatment
  - Mineral oil 60 ml BID for 7 days
  - Move to turf or place rubber mat under calf
  - Place salt 'donut' in pen
  - **Have veterinarian check at next available visit for further treatment recommendations.**

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#### SEPTICEMIA

- \* Sick, dull, weak calf less than 2 weeks-of-age
- \* Temperature variable, usually  $>104.0^{\circ}\text{F}$
- \* Navel +/- enlarged
- \* +/- diarrhea
- \* +/- swollen joints
- \* Treatment - Antibiotics as directed by veterinarians
  
- \* Action - Review colostrum management and Maternity sanitation.

## REPLACEMENT HERD HEALTH MANAGEMENT

### Calf/Heifer Management

#### GENERAL HOUSEKEEPING

1. Keep floor, equipment and utensils clean.
2. Avoid spilling or running water into the walkway or bedding areas inside the barn.
3. Keep bedding areas clean inside the barn.
4. Routinely collect unused/extra feed and/or water buckets, clean thoroughly and store upside down in the storage room.
5. Keep walkway swept and free of unnecessary utensils, material and debris.
6. Keep fans on in hot weather.
7. Keep shade structures on fresh ground and properly positioned to ensure maximum utilization by livestock.
8. Keep outside paddocks mowed to an appropriate level.
9. Use only **new** needles and **clean** syringes when administering treatments.
10. Check fluids, and lug nuts in all farm equipment prior to using and record on the log sheet.
11. Keep the restroom clean.
12. Do not pour left over milk onto the grass or sand areas.
13. Keep area around the calf barn clean, mowed and free of litter including cigarette butts.
14. Clean work pens and chutes after each use, scrape or hose down as necessary.
15. Clean out the Calf transport vehicle(Van/Trailer/Truck) after each use if possible, but at least once a day.
15. Calf barn beds will be cleaned out and new sand applied and pens cleaned and sanitized with chlorine after the calves in that group are removed from the barn, before new calves enter. (All in-All out).



## REPLACEMENT HERD HEALTH MANAGEMENT

### Replacement Performance Monitoring

#### MONTHLY MONITORS

- \* Colostrum absorption via Total Serum Protein
- \* Pasteurizer performance SPC's from morning and afternoon feedings
- \* Mortality rate via Weekly Report
- \* Morbidity rates via PCDART
- \* Weight gain 0-6 months
- \* Weight gain 6-13 months
- \* Body condition scores monthly
- \* Weight gain breeding to calving
- \* Conception rate and AI Conceptions on pregnancy checked heifers
- \* Conception rate for most recent months breedings
- \* List
  - Heifers > 15 months and not bred
  - Heifers > 18 months and not diagnosed pregnant

## REPLACEMENT HERD HEALTH MANAGEMENT

### Summary of Calf Procedures

#### **Start time is at 6:00 a.m.**

1. Walk the calf barn to look for any sick calves.
2. Check answering machine for newborn calves that need to be picked up
3. Pick up any newborn calves ASAP, while there Check the refrigerator at the parlor for any colostrum
4. Check the calf truck, and other power equipment for any problems.
5. Warm any colostrum that is needed.
6. Feed the calf milk.
7. Wash the pasteurizer.
8. Feed the colostrum.
9. Wash all milk utensils.
10. Pick up old grain.
11. Feed new grain.
12. Wash water buckets and refill. Add any electrolyte that is needed.
13. Give any medications that are needed.
14. Reload and start pasteurizer about 11:00 a.m. Take buckets to parlor to catch next day's required milk.
15. In the afternoon repeat steps 3 thru 8.
16. Push up feed in the afternoon.
17. Feed any animals that are in the outside barn.
18. Recheck feed and water and refill if necessary.
19. Clean out and wash the Calf transport vehicle.
20. Clean work area and make sure there is calf starter in the storage area for the next day. Storage area is to be swept and bags kept on pallets, not on the floor.

**If the Supervisor is absent:** Push off old feed for the outside pens and lock out the breeding groups early in the morning.

**Note: Please leave your children at home.**

## DAIRY HERD HEALTH PROGRAM

### UF DAIRY UNIT

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#### EMERGENCY CALL PROCEDURES

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The Food Animal Reproduction and Medicine Service (FARMS) of the University of Florida, College of Veterinary Medicine, provides emergency service to the Dairy Unit (DU) on a 24 hr basis. Clinical situations that warrant the assistance of a university veterinarian are discussed in this manuscript. All Dairy Unit personnel involved in health care procedures are encouraged to seek veterinary assistance when confronted with these situations.

***Telephone # between 8:00 AM to 5:00 PM: 352-294-4387:***

After hours, weekends and holidays: 352-294-4387, when instructed to do so choose “food animal case” and follow instructions. Answering service personnel will contact the veterinarian that is on call, transfer the call or transmit the message.

In the event that the veterinarian on-call cannot be reached, management also has the cellular phone of a designated FARMS (UF) veterinarian and they are encourage to call him/her directly.

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**UF DAIRY UNIT**

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**C - FEED CREW: STANDARD OPERATING PROCEDURES**

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1. **Check Equipment**
  - Fluids operating level
  - Filters clean
  - Tire inflation correct, Lug nuts tight
2. **Pick up Refusal (Weighback)**
3. **Check Batch Mix**
  - Enough to feed animals when refusal picked up
4. **Research Barn**
  - Deliver silage, TMR, etc. as required
5. **Feed**
  - Herd TMR 1<sup>st</sup> feeding
  - Calf unit non-pregnant heifers
  - Pregnant heifers
  - Springers
  - Dry cows, culls
6. **Break** (if time allows)
7. **Prepare to feed**
  - Make batch mixes, open hay bales, etc. if time allows
8. **Lunch break**
9. **Push up feed to herds**
10. **Prepare to feed**
  - Make batch mixes, research concentrates as needed
  - Clean area, silos, sweep in front of bays, remove trash to dumpster
11. **Break** (if time allows)
12. **Feed**
  - Herd TMR 2<sup>nd</sup> Feeding
13. **Preparing for next day**
  - Fuel equipment, clean air filters, grease machinery, etc.

## PART C - FEED CREW SOP

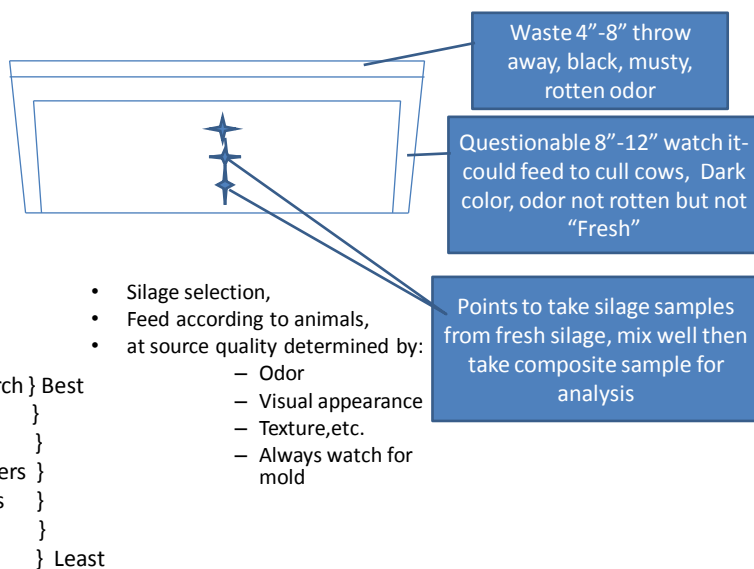
**Make every effort to prevent spilled feed from getting washed into the storm water run-off drain. Clean up spills as soon as they happen.**

Maintain proper refusal (weighback) amount to assure adequate feed available while minimizing waste. **Strive for 5% refusal rate.**

Check with Farm manager any time a particular herd refusal rate looks excessive before reducing amount delivered to that herd. Some day to day fluctuation is normal especially in our fresh herds and we don't want to get into a "yo-yo" situation where we are raising and lowering the feed offered every day.

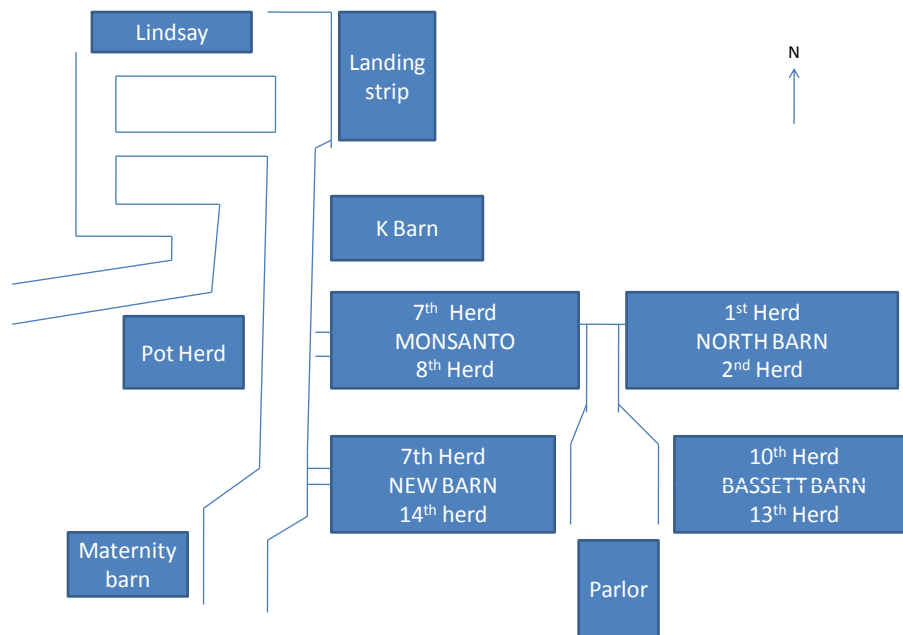
**NOTE: ANY CHANGES TO THE TMR WILL ONLY BE MADE BY OR IN CONSULTATION WITH THE NUTRITIONIST!**

### Silage Sampling Methods

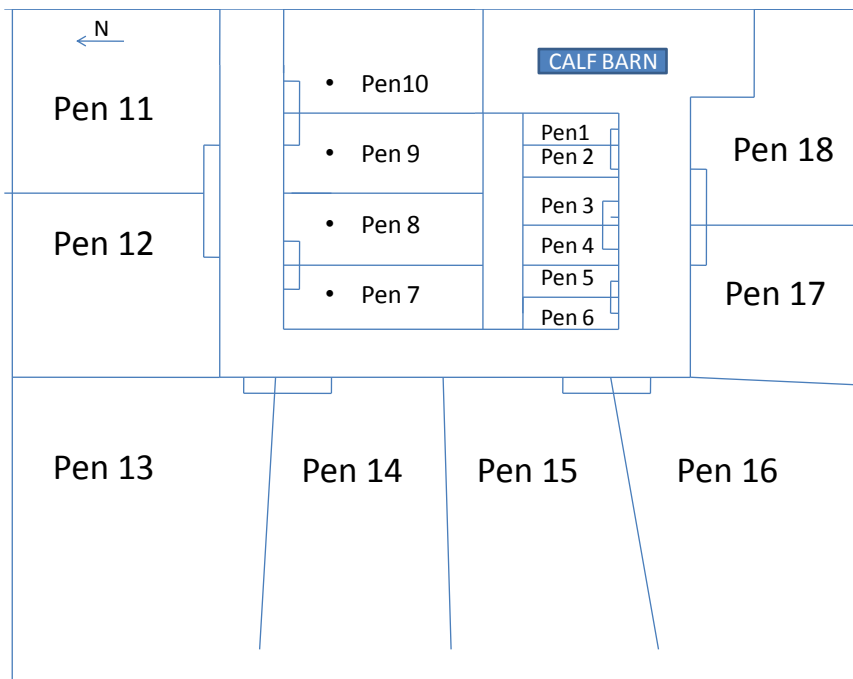


### PART C - FEED CREW SOP

#### HERD LOCATIONS



#### Pen Locations – Calf Unit



## UF DAIRY UNIT

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### PART D – AG CREW: STANDARD OPERATING PROCEDURES

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**PART D - AG CREW SOP**  
**Daily, Weekly and Seasonal Duties**

**Daily:**

Check and move or set irrigation, record on/off times, and meter readings.  
Check needed Waste Management SOP for duties and record keeping (see Waste Mgt SOP).  
Feed any nutrition research projects in progress.  
Haul away old feed, spoiled silage from commodity area.  
Clean up manure and sand in water flush area from west end of all barns to weir.  
Pick up/clean up as needed. Keep manure cleaned off top of retaining walls and walk-ways.  
Check fluid levels, air filters, lug nuts, and tire pressures in equipment before use.  
Clean air filters, check lug nuts, grease and clean equipment after use.

**Each Week:****Monday:**

Clean weir & Pot barn.  
Put out fresh hay to pot herd.

**Tuesday:**

Haul sand and manure from cement.  
Put out hay for dry cows and heifers.  
Check fences.  
Haul three loads of sand to calf unit and other areas as needed.

**Wednesday:**

Check maternity barn sand, clean out and replace sand at least weekly, clean the fans. Mow, entrance lanes, open areas, pastures, weed eat.

**Thursday:**

Clean landing strip and Lindsay Blvd.

**Friday:**

Clean weir and calf unit.  
Check fences.

**Saturday, Sunday:**

After daily chores, pick up /clean up, finish any projects left from the week.

**Seasonal:**

Assist in crop production from spreading solids to irrigation and harvesting, to include weighing trucks, sampling for analysis, hauling from the fields, and covering the pits.  
Put out hay to dry cow and heifer herds as requested.



## **PART D - AG CREW SOP Weir Cleaning SOP**

Timing: Weir needs to be cleaned at least two times a week to keep excessive solids out of first stage lagoon and pump station, more often in the winter.

Cleaning:

1. Put sand dam up in front of Monsanto barn at manure and sand wash wall.
2. Clean sand out of the ditch to the curve.
3. Cut off separator, open boards on west side of cement to let water into first stage lagoon.
4. Open weir gates and remove guards on west side to drain water into first stage lagoon.
5. Open decent basin boards to let water drain.
6. Build wall of dry manure at separator to let water drain.
7. Push solids out of weir basin to top of cement.
8. Clean out decent basins, (North and South).
9. Clean decent gates feed pump screen and wash bottom of separator.
10. Put all drain stops back in place and turn on separator.
11. Record in Manure Management Log: Estimated number of loads, check off tasks performed and time started and finished.

**NOTE: Do not wash sand into settling basin.**

**PART D – AG CREW SOP**  
**Waste Management SOP**  
**Permit Duties**

**KEEP ALL RECORDS FIVE YEARS FROM DATE GENERATED.**

**Daily:**

Inspect all water lines. Record when and by whom.

Record water table level before any land application of waste water.

**Note:** Water table must be 18 inches or deeper below the normal ground surface before any waste water may be applied to the land, except where land application from a waste water storage pond or lagoon is necessary to prevent waste water from overtopping the storage pond or lagoon embankment because of chronic or catastrophic rainfall events.

Record weather conditions 24 hours before and 24 hours after any land application of waste, either solid or liquid.

Record any manure solids transferred off the property. Include: name of person to whom it is transferred, address of person, and amount of manure being transferred. Provide a current nutrient analysis of the material taken prior to it being transferred, to the person receiving the material.

**Weekly:**

Inspect all storm water diversion devices, runoff diversion structures, and devices channeling contaminated storm water to the waste water and manure storage and containment structures. Record when and by whom.

Inspect all manure and process waste water impoundments, including liquid levels indicated by the staff gauge. Record when and by whom.

Inspect all land application equipment for leaks and mal-functions. Record when and by whom.

**Quarterly:**

Sample monitoring wells for analysis of ground water level; Ph; Nitrite, Nitrate as total N; Coliform, fecal.

Collect manure and process waste water samples for analysis. Effluent samples shall be taken at the overflow from the waste storage pond at I-001.

Submit monitoring well test results.

Report to DEP Waste water pumped, Waste solids spread, moved off property, where and to whom.

**Annually:**

Sample monitoring wells for analysis of Phosphate, ortho (asPO<sub>4</sub>).

Submit monitoring well test results.

Calibrate waste water pumps, irrigation output, solids spreader, check all vacuum breakers on water lines. Record when and by whom.

Submit ground water trend analysis within forty-five days of anniversary date.

Submit Annual Operations Report form for previous calendar year no later than April 1.

**Every Five Years:**

Apply for new permit 180 days before old one expires (October 2011).

Soil samples for Phosphorus content.

**For Each Crop:**

Representative plant tissue samples shall be collected and analyzed for each crop on each land application area. The results are to be used to determine the amount of nutrients taken up by the crop and to determine application rates for future crops.

**PART D – AG CREW SOP  
Waste Management SOP  
Record Keeping Requirements**

**KEEP ALL RECORDS FIVE YEARS FROM DATE GENERATED.**

1. Maintain on-site and available for inspection:
  - a. Records of all data, including reports and documents used to complete the application for the permit;
  - b. A copy of the current permit;
  - c. A copy of required record drawings;
  - d. A copy of the approved site-specific nutrient management plan.
  
2. For the production area, the permittee shall maintain on-site for a period of five years from the date they are created, a complete copy of all records and must make these records available to the Department for review upon request:
  - a. Records documenting the required daily and weekly visual inspections;
  - b. Weekly readings of the staff gauge reading in the liquid impoundments;
  - c. Records documenting any actions taken to correct deficiencies. Deficiencies not corrected within 30 days must be accompanied by an explanation of the factors preventing immediate correction;
  - d. Records of dead animal management and practices used;
  - e. Records documenting the current design of any manure or litter storage structures, including volume for solids accumulation, design treatment volume, total design volume, and approximate number of days of storage capacity; and
  - f. Records of date time and estimated volume of any overflow.

**Note:** In the event of a discharge to the surface waters of the State, the permittee shall make oral notification to the Department within 24 hours from the time the permittee becomes aware of the discharge. A written submission shall also be provided within five days of the time that the permittee becomes aware of the discharge. The permittee shall keep a copy of the written notification submitted to the Department together with the Nutrient Management Plan. The written submission shall contain a description of the discharge, and estimate of the amount discharged, its cause, and the period of discharge, including times and dates.

**PART D – AG CREW SOP**  
**Waste Management SOP**  
**Record Keeping Requirements**  
**(continued)**

3. For the land application area, the permittee shall maintain on-site for a period of five years from the date they were created, a complete copy of all records and must make these records available to the Department for review upon request:
  - a. Expected crop yields for each land application area;
  - b. Actual crop yields for each land application area;
  - c. The dates(s) manure litter or process waste water is applied to each land application area;  
Note: No additional applications of nitrogen or phosphorous are authorized to land application areas or pastures at this facility unless needed to obtain realistic crop yields as recommended by certified crop advisor or other qualified individual.
  - d. Weather conditions at the time of application and for the 24 hours prior to and following application
  - e. Test methods used to analyze the manure, litter, process waste water and soil;
  - f. Results from manure, litter, process waste water and soil sampling;
  - g. Explanation of the basis for determining manure application rates, as provided in the technical standards established in this document;
  - h. Calculations showing the total nitrogen and phosphorous to be applied to each field, including documentation of calculations for the total amount applied;
  - i. Total amount of nitrogen and phosphorous actually applied to each field, including documentation of calculations for the amount applied;
  - j. The method used to apply the manure, litter or process waste water; and
  - k. Dates of manure application equipment inspections and calibrations.
4. The permittee shall keep records of all manure, litter and process waste water transferred off-site and no longer under the control of the permittee. The permittee must maintain on-site, for a period of five years from the date they were created, a complete copy of the records for transferring manure, litter and process waste water off-site. The records must contain the following items:
  - a. Date;
  - b. Recipient name;
  - c. Recipient address; and
  - d. Amount of manure, litter and process waste water being transferred.
5. Prior to transferring any manure, litter and process waste water the permittee must provide the recipient with the most current nutrient analysis.

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## UF DAIRY UNIT

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### **PART E – MAINTENANCE DEPARTMENT SOP: Facilities Planning and Operations**

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Hours: Monday thru Friday 7:00 am to 3:30 pm  
Contact phone numbers: (352)494-8530 or (386)462-4367

- All requests for repairs to existing facilities that occur after hours should be written on a note pad located in the parlor office. Note pad will be checked by maintenance personnel between 7:00 am to 7:30 am Monday thru Friday.
- The maintenance supervisor will prioritize any repairs.
- Repairs needed during 7:00 am and 3:30 pm Monday thru Friday should be brought to the attention of the maintenance supervisor either by phone or coming to the shop office.
- Maintenance personnel will provide routine service and check on all equipment on scheduled bases.
- Maintenance personnel are responsible for all above ground non potable water. All cattle cooling systems. All cattle research facilities. Excluding milking equipment. All vehicles and farm equipment. Electrical and potable water repairs should be addressed to the maintenance supervisor and he will issue a work order to Facilities Operations Staff.
- New projects and long term repairs will be discussed and evaluated at weekly Wednesday meeting.
- Emergency repairs occurring during weekends and holidays should be evaluated by the shift supervisor as to severity of the situation and appropriate person to contact.

## **PART E – MAINTENANCE DEPARTMENT SOP**

### **Dairy Unit Maintenance**

**Plumbing:** - Whether it be repairs or project related any plumbing work will need to be directed through Facilities Planning and Operations. Our goal over time is to make sure the water supply is protected against cross-contamination. We will be responsible for any repairs made to domestic water lines up to and including any backflow protection. We will also be responsible for any potable water lines inside any buildings. The dairy maintenance personnel will be responsible for any water lines to the fields after the backflow protection. We will try to identify the locations of all water lines with the assistance of dairy personnel and make sure there are operable valves in an accessible location. In the event of an emergency during normal working hours FP&O will respond to the repair. In the event of an emergency after hours if there are DRU employees available and the water can be shut off until normal working hours this would be preferable. If the water cannot remain off for that period of time an emergency work order can be called in to Centrex who will in turn contact a FP&O supervisor who will arrange for the repair to be made.

**Electrical-** No electrical work is to be performed by DRU personnel. This is a safety issue and must be followed. All electrical work performed at the DRU needs to be performed by licensed electricians and inspected by Codes Enforcement when applicable. In the event of electrical problems DRU personnel may check and reset breakers if that appears to be the problem but in the event that does not work Facilities Planning & Operations needs to be contacted. If an after hours emergency occurs DRU personnel should contact Centrex Emergency Maintenance who will contact a FP&O supervisor who will arrange for the repairs to be made.

**HVAC-** IFAS Facilities Operations will provide all maintenance and repairs to all HVAC equipment at the DRU.

**Building Maintenance-** IFAS Facilities Operations will perform all interior and exterior building maintenance as needed at the DRU.

**CENTREX- 392-1139**

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## UF DAIRY UNIT

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### PART F – PUSHERS & MILKERS SOP

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This SOP pertains to ALL shifts!

#### **When you arrive:**

1. Bring the First Herd to the showers.
2. Make sure stalls in First Herd are raked.<sup>5</sup>
3. Set all gates to bring in next Herd at appropriate time<sup>6</sup>, so they are showered and ready to be milked.
4. Reset gates for First Herd to leave parlor and go back to their pen.
5. When First Herd is finished follow them back to their barn and lock them up.
6. Set gates for next Herd to return to their pen.
7. At the appropriate time set gates for the next Herd to enter the showers, make sure all the gates are set properly so they don't get mixed with the previous Herd.
8. Reset gates for the previous herd to return to their pen.
9. The last herd milked will be the Pot Herd. These are hospital cows and need special attention.
10. Check with the milker and the supervisor on duty to see that the line is out of the bulk tank when you bring the Pot Herd up.
11. Make sure all the Pot Herd cows are back in their pen and locked up when finished milking.<sup>7</sup>

#### **Throughout the shift (as time permits):**

1. Spray off butt boards and walls in the parlor.
2. Keep exit alleys and pipes clean.
3. Scrub slick spots on the concrete.
4. Dump and clean water troughs as you bring in a group Scrape crossovers by water troughs.
5. Coordinate with your supervisor; who will scrape and where, and who will push, depending on feed scraping schedule and their work load.

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<sup>5</sup> Rake each barn as the cows are leaving to enter the showers.

<sup>6</sup> Appropriate time means having cows in the barn, showered and dry by the time the milker needs them.

<sup>7</sup> When finished locking up the Pot Herd, the pusher is responsible for cleaning walls and butt boards in the parlor and the side pens. The pushers and the milkers are responsible for keeping the turn-out reels, all pipes behind the parlor and the fans in the holding area. Clean.

## PART F – PUSHERS & MILKERS

### All Herds:

1. Make sure the freestalls are raked and the aisles are squeegeed daily.
2. Sand will be added to the stalls as needed, but at least every 10-14 days.
3. Check the outside water troughs, make sure they are clean and full and not running over (outside water troughs are to be emptied and cleaned at least 1 time per month).
4. Follow the Herd out when it is finished and lock them up.



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## UF DAIRY UNIT

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### PART G – GENERAL INFORMATION

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#### **Emergency Procedures / Disaster Preparedness**

Depending on the nature of the emergency, all normal animal husbandry procedures will be performed when it is safe for animal care personnel to carry out these functions. The Dairy Unit has emergency generators to provide necessary power (i.e. water well and milking parlor), and all personnel scheduled to work that day are "Essential Personnel", no exceptions.

After a disaster, the guidelines outlined in the University of Florida IFAS Extension Service 'The Disaster handbook' will be followed. (<http://disaster.ifas.ufl.edu/>)

If a hurricane arrives, animals will remain in their respective housing units. Cows are housed in buildings constructed with nonflammable materials such as metal and concrete block so the risk of fire is minimal. The dairy is not in a "flood zone" so a flood disaster is highly unlikely.

#### **Bio-security Procedures**

Employees are provided with uniform shirts after one month of employment. They are required to wear these while at work. They are expected to come to work in clean clothes, and clean and sanitize their boots daily. Visitors are required to sign in and are not permitted to wander unescorted among the livestock. Those entering the animal housing areas are required to wear cleanable protective foot wear or disposable boots, NO EXCEPTIONS! Employees who must work at both the Calf Unit and in the adult cow herd should make every attempt to do their calf/heifer duties first. Employees must wash and sanitize their boots and remove any organic matter from clothing before returning to the Calf Unit. Visitors who will be at both the Calf Unit and at the adult animal housing areas MUST visit the Calf Unit first.

#### **Security Procedures**

Five employees live in houses on the premises and are responsible for watching for potentially disruptive activity.

#### **New Herd Additions**

Records of vaccinations and treatments of New Herd Additions are reviewed prior to purchase. Management and/or a herd veterinarian will contact the veterinarian(s) providing veterinary care to the herd(s) of origin to determine their health status. As required by state law, dairy cattle entering Florida must test negative for tuberculosis and brucellosis, or they must originate in certified/accredited herds/states free of these diseases (see [http://www.aphis.usda.gov/import\\_export/animals/animal\\_import/animal\\_imports\\_states.shtml](http://www.aphis.usda.gov/import_export/animals/animal_import/animal_imports_states.shtml) for additional information on State of Florida cattle import requirements). As required by federal law, animals will be inspected and an Official Certificate of Veterinary Inspection

issued by a USDA accredited veterinarian prior to loading for interstate delivery to the Dairy Unit.

Animals originating from within Florida will be required to have an Official Certificate of Veterinary Inspection issued by a USDA accredited veterinarian prior to loading for delivery to the Dairy Unit.

Upon arrival, New Herd Additions are quarantined for two weeks in a pen with greater than 10 foot buffer to any other animal holding pens. They are observed daily for any disease. Any animal exhibiting signs of disease are scheduled to be examined by one of the FARMS veterinarians and treated as prescribed. The decision to allow an animal treated for disease to be released from quarantine will be left to the discretion of the attending FARMS veterinarian.

New Herd Additions will be processed (see pg 6) within 2 days post-arrival. As they finish their quarantine period they will be moved as a group to the appropriate pen based on age, size or stage of gestation/lactation.

### **Medical Records**

Individual medical records are kept for each animal on the Unit. Daily treatment logs are kept for each animal treated and these are entered daily into the computerized farm management program (AfiFarm<sup>®</sup>). Data items recorded in this computer system include: Individual ID, clinical information, why the animal was treated, what was used, descriptions of any surgical procedures, follow-up exams/therapy, and documentation of disposal if the treatment failed.

### **Drug Storage and Monitoring**

Drugs are stored in the treatment areas in accordance with Pasteurized Milk Ordinance (PMO) requirements (lactating and non-lactating drugs are kept separate). Storage for refrigerated drugs is in a cooler remote to the treatment areas where the herdsman may retrieve necessary quantities of the drugs needed in the treatment areas for a week at a time. Drugs not requiring refrigeration are similarly kept locked in a storeroom accessible by the herdsman. It is his responsibility to keep track of what's on hand and monitoring the expiration dates as he replenishes the treatment areas and orders new supplies of drugs. Drugs are rotated by expiration date as they are received and put in storage.

### **Hazardous Materials**

Harmful chemicals used on the dairy are predominantly those used for the cleaning and sanitizing equipment. They are stored in a single area outside the barn, inaccessible to the livestock. MSDS 's are kept in the parlor office for reference as necessary. There are gloves and face shields available for personnel who must handle these materials and in case of accident there are eye wash stations and a shower close by to flush any material. If flushing is inadequate and burning persists for longer than 5 minutes the personnel affected will be transported to the emergency treatment facility for further care. The dairy is inspected regularly by EH&S.

## ADDENDUM 1 Pain Management

Some procedures and health conditions are either overtly painful or there may be a perception of pain involved. All efforts are made to prevent such situations from happening, or if they are part of a management routine, a plan is in place to control pain. Listed below are some examples of this and how pain is addressed.

Note: There are no FDA approved medications labeled for alleviation of pain! Therefore, all medications listed are being used in an extralabel fashion and established milk and meat withholding times must be observed.

### **Dehorning**

Age: 4 wks ( $\pm 4$  d); Restraint: calves are restrained manually (standing position, head held between the operators legs).

Analgesia: Give Meloxicam<sup>8</sup> (3 pills/100 lb) orally on morning of dehorning and on the morning after dehorning.

Anesthesia: Desensitize the entire horn area by injecting 2% lidocaine<sup>32</sup> (5 ml each side) over the auriculopalpebral nerve on each side of the head (done by veterinarians).

Procedure: Hair over the dehorning site is clipped with electric clippers. Fifteen to 20 minutes after injection of lidocaine, the animal is restrained as above and is dehorned by electrocautery (Barnhart electric dehorner) by applying the dehorner over the horn bud for 5-8 seconds per side.

NOTE: This procedure is performed in compliance with the AVMA guidelines ([http://www.avma.org/issues/policy/animal\\_welfare/dehorning\\_cattle.asp](http://www.avma.org/issues/policy/animal_welfare/dehorning_cattle.asp))

### **Castration**

Age: 6wks ( $\pm 4$ d)

Analgesia: Give Meloxicam<sup>32</sup> (3 pills/100 lb) orally on morning of, and on the morning after, castration.

Restraint: Calves are restrained manually by holding the head by trapping the neck of the calf between the restrainer's leg (thigh) and forearm while the other hand is used to grasp the tail near the base of tail and holding the tail straight up.

Anesthesia: 5ml lidocaine<sup>32</sup> is injected into each spermatic cord 1-1.5 in proximal to testicle; wait 15-20 minutes (done by veterinarians).

Procedure: The distal 1/3 of scrotum is removed with a scalpel blade; the spermatic cord is bluntly dissected from surrounding soft tissue; the testicle is removed by pulling it straight down. After removal of both testicles, any residual soft tissue is removed at the level of the scrotal incision by cutting with scalpel.

NOTE: This procedure is performed in compliance with the AVMA guidelines ([http://www.avma.org/issues/policy/animal\\_welfare/dehorning\\_cattle.asp](http://www.avma.org/issues/policy/animal_welfare/dehorning_cattle.asp))

### **Supranumary teat removal**

Age: 5-6 months

Anesthesia: None is used

Procedure: Supranumary teats are removed by grasping with fingers or Alice tissue forcep and they are cut off at the base (at hair line) with scissors. Wound spray is applied.

<sup>8</sup> EXTRALABE DRUG USE: Observe established milk/meat withholding times.

**Foot care**

Age: Variable. Routine foot care is performed by a professional bovine foot trimmer. Most therapeutic foot care is performed by herd veterinarians.

Anesthesia/Analgesia: Pain is managed on a case-by-case basis and may include systemic analgesia (aspirin<sup>32</sup>, meloxicam<sup>32</sup> or flunixin meglumine<sup>32</sup>) and/or local anesthesia (lidocaine<sup>32</sup>).

**Other painful procedures**

Other potentially painful procedures are performed by a herd veterinarian. Pain control is performed on a case-by-case basis and may include systemic analgesia and/or local anesthesia.

## **ADDENDUM 2 Employee Training**

### **New Employees**

All new employees must undergo formal training on selected topics related to their job duties prior to performing those duties. Employees sign and date forms verifying their training. A set of binders containing documentation of this training is kept in the Dairy Unit office. Available training modules include the following:

- Injection sites in dairy and beef cattle
- Handling and movement of dairy cattle
- Injection technique for Excede<sup>®</sup>
- Handling of hazardous materials
- Dairy SOP Manual
- Environmental Health & Safety handling of sharps (needles, etc)
- Zoonotic disease risks

New employees often work with an experienced employee to learn procedures. Employees are retrained when evidence indicates that the procedure is not being performed properly.

**New Employees also are required to participate in the “Animal Contact Medical Monitoring Program” provided by EH&S prior to being hired.**

### **Current Employees**

All employees will undergo yearly ‘refresher’ training on selected topics related to their job duties. If/when an employee’s job description changes, training in topics related to this change occurs at that time. A set of binders containing documentation of this training are kept in the Dairy Unit office.

**Current employees must renew their “Animal Contact Risk Assessment” every three years.**