

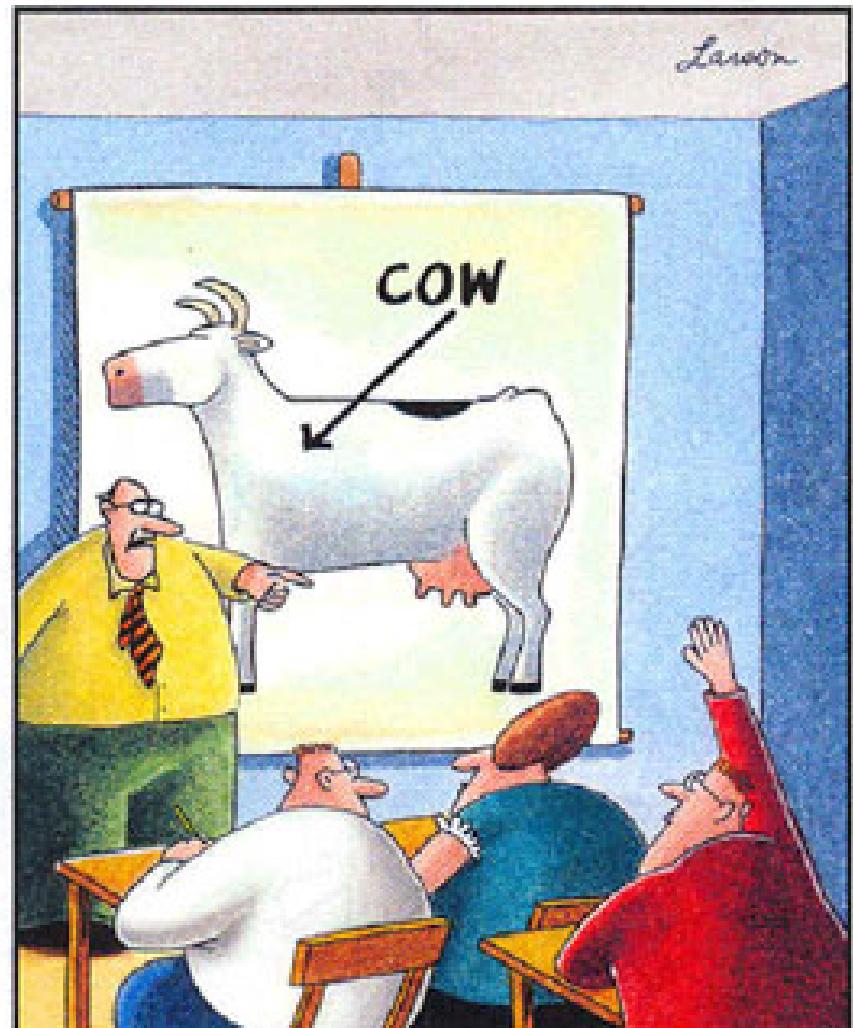
Dairy Industry Overview



Management Practices

Critical Control Points

Diseases

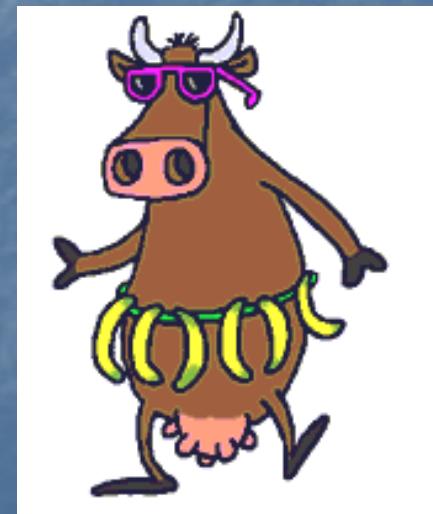


"Yes ... I believe there's a question in the back."

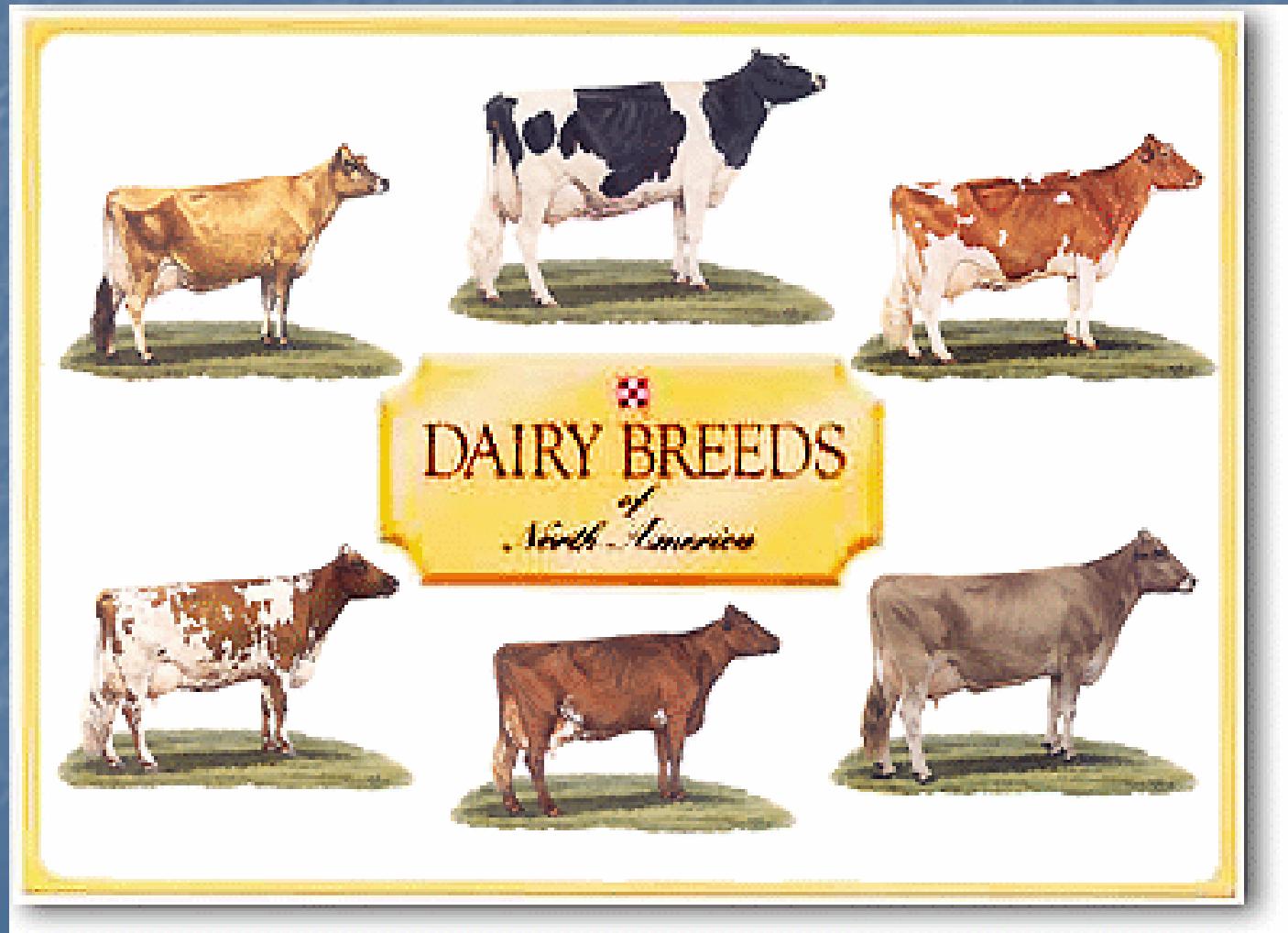
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Definitions

- **Lactation:** Period of time milk is produced
- **Dry Period:** Period between end of lactation and calving
- **Transition Period:** 30 days before calving to 30 days after calving
- **DIM:** Days in milk
- **DMI:** Dry matter Intake
- **Heat:** Estrus
- **AI:** Artificial Insemination
- **Services:** Matings (usually AI events)
- **Days Open:** Days not Pregnant
- **ADG:** Average Daily Gain
- **Fresh Cow:** Recently calved cow
- **TMR:** Total Mixed Ration

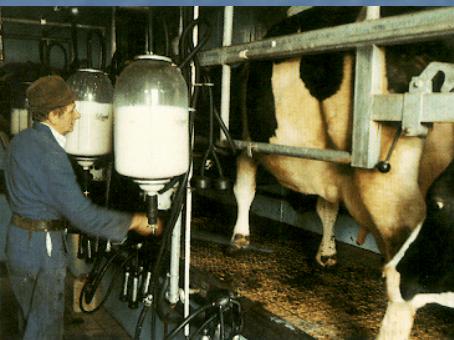


General Introduction



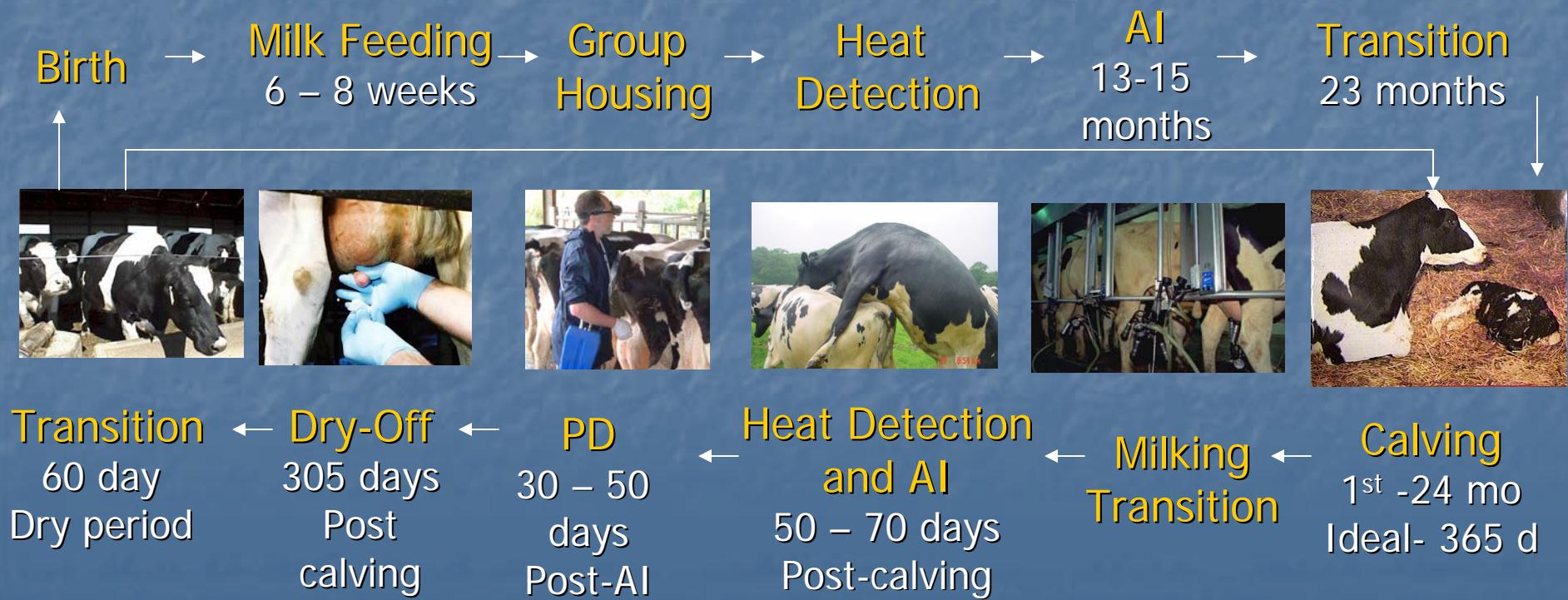
Beef vs Dairy



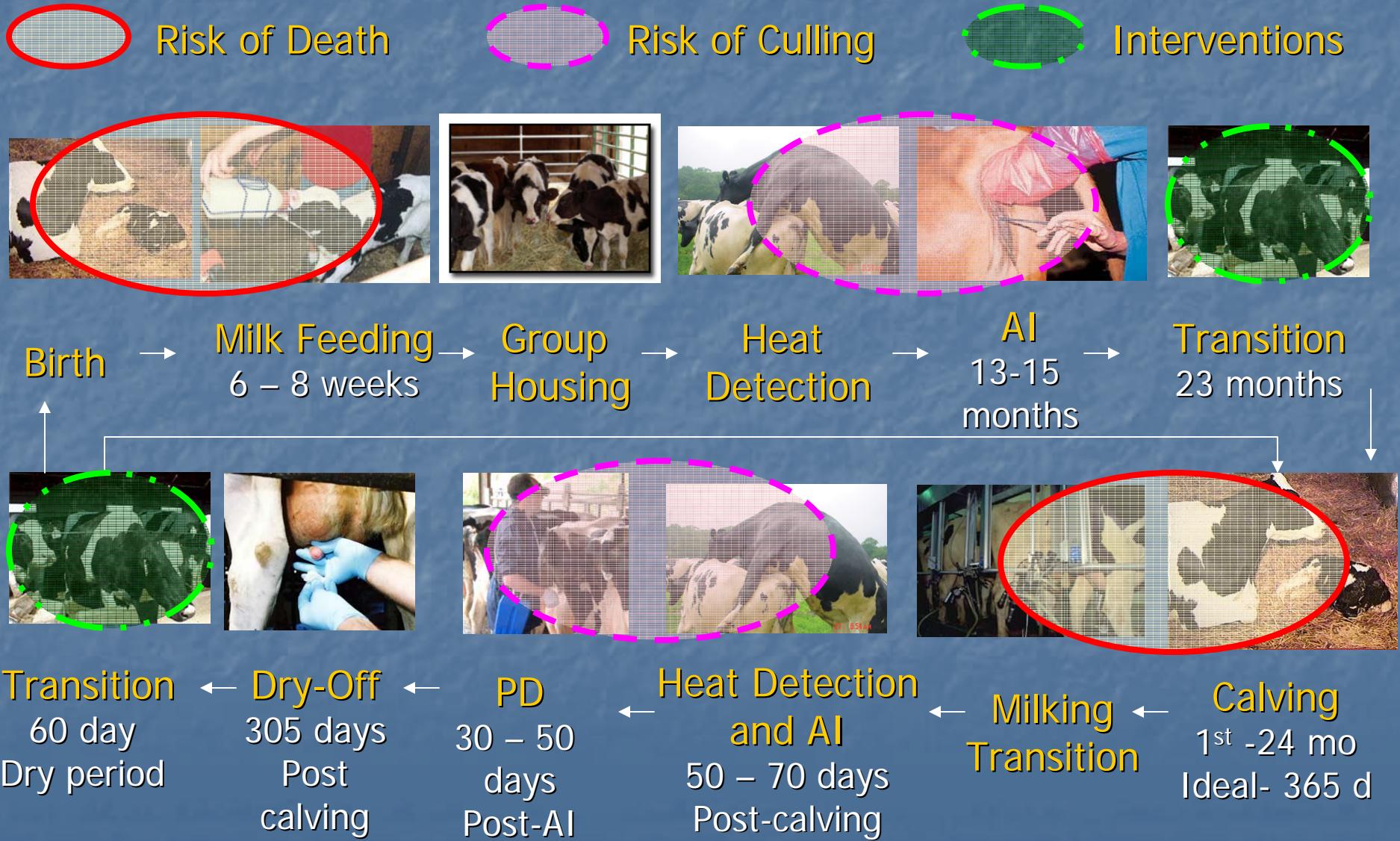




It's a Dairy Cow's Life



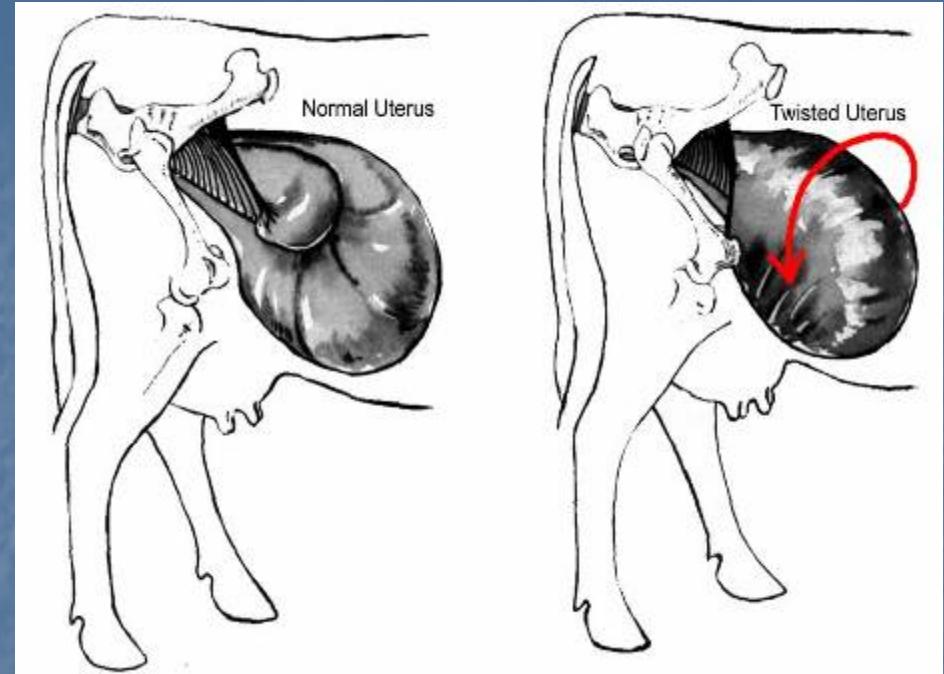
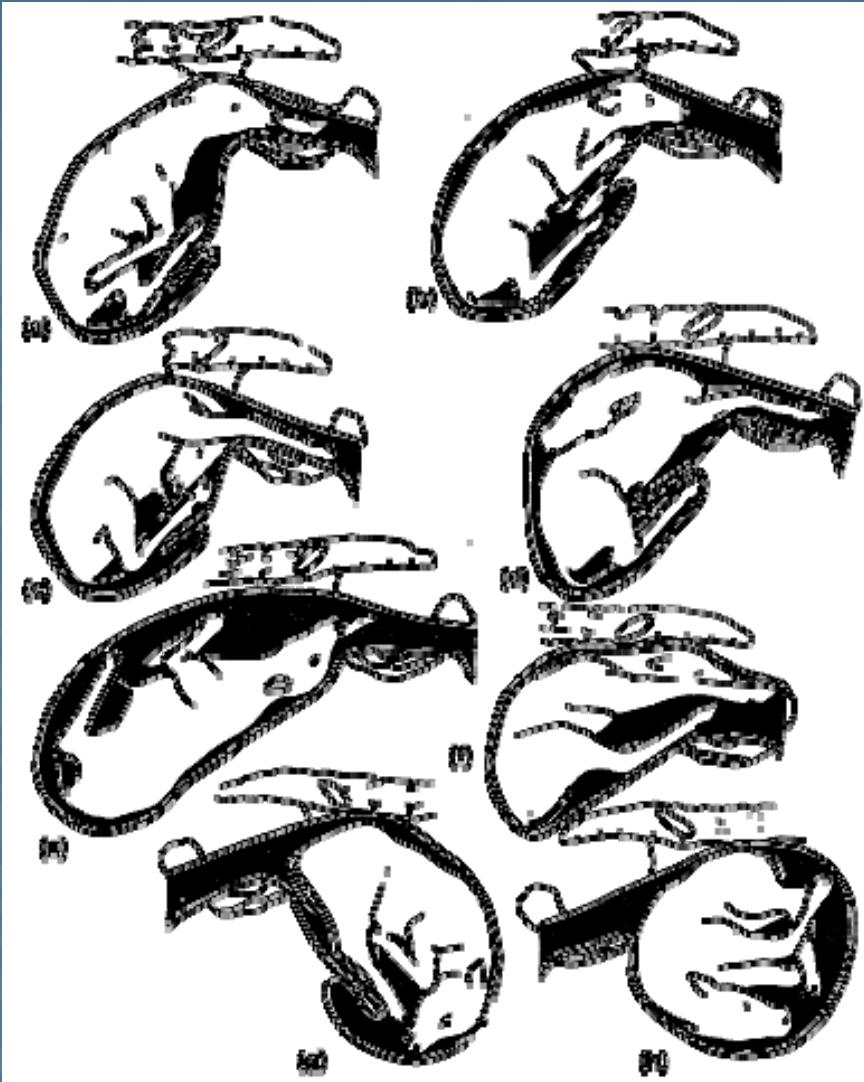
Critical Control Points



Birth



- Dystocia (difficult birth)
- Especially first calf heifers
- Fetal oversize (genetics)
- Fetal malpositions (next slide)
- Uterine inertia (Ca^{2+} deficiency)
- Obstructive dystocia (fat/ dilation/torsion)
- Dystocia impacts milk yield/ days open/ services per conception/ cow deaths
- Direct Cost up to \$380/ case
(Dematawena and Berger, JDS, 1996)



Critical Control Points



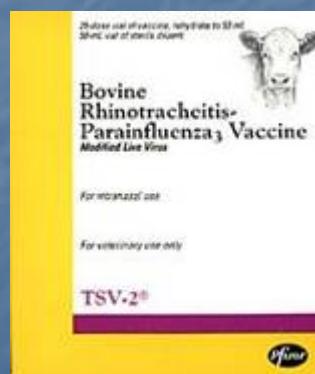
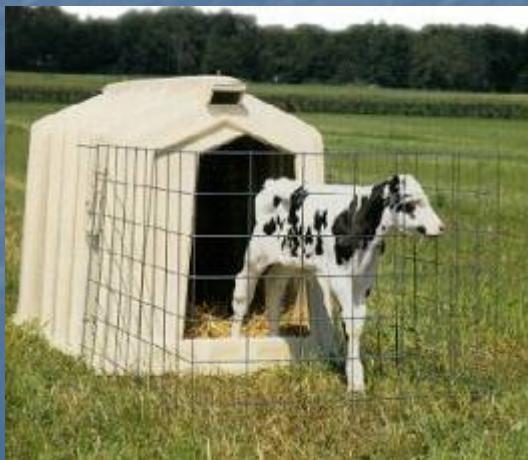
- Prevention:
 - GENETICS:
Calving ease sire for heifers
 - NUTRITION:
Heifers 60% of mature BW @ AI
Fat cows @ calving = milk fever
Fat cows = obstructive dystocia
- Intervention (Education):
 - Lack of progress
 - Fetal Malpositions
 - Distress: fetal/ maternal
 - Work Cleanly/ Use lube/
disinfectant
 - Know your limits

Birth to Weaning



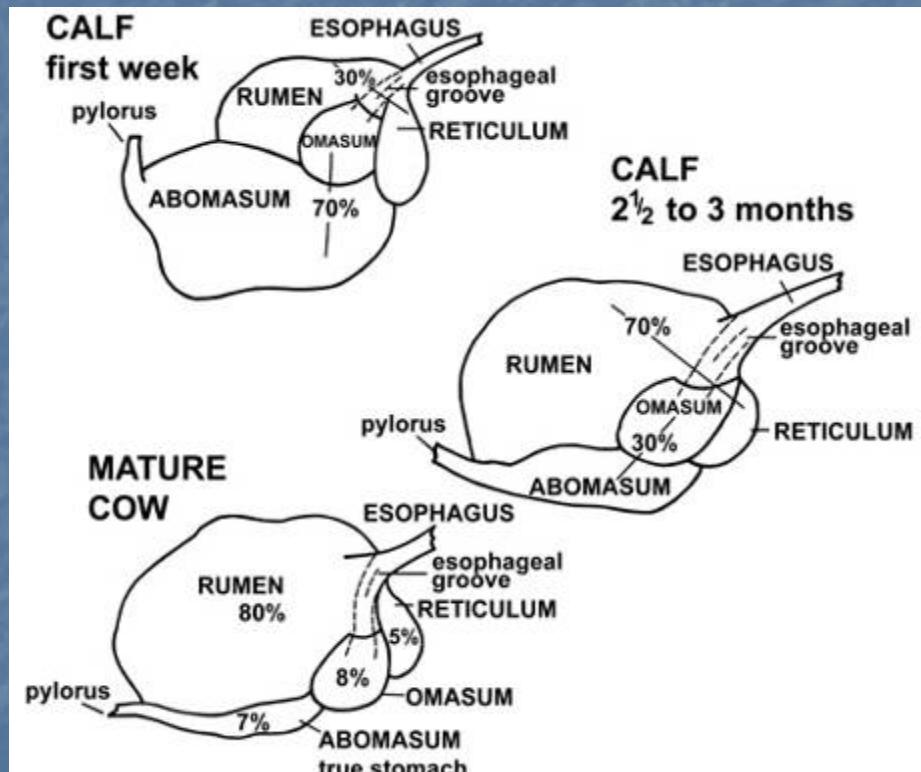
- 8 – 10% calves die before weaning (**Goal < 5%**)
 - Diarrhea = 60% of deaths
 - 25 – 30% Incidence
- Infection/ Nutrition/ Stress
- Rota Virus: 3 – 21 days
- Corona Virus: 5 – 21 days
- E. coli: < 5 days old
- Cryptosporidium: 1 – 3 weeks
- Cl. perfringens type C: < 2 weeks
- Salmonella: > 10 days
- Respiratory disease from poor ventilation

Critical Control Points



- **Colostrum Feeding (65%)**
 - > **1 gallon within first 6 hours**
 - Pooled Colostrum (colostrumeter)
→ older vaccinated cows
 - Pasteurized
→ Johnes/ Mycoplasma/ EBL
 - Serum TP > 5.2 mg/dl OR ZST test
 - FPT = 2X Mortality Rate
- **Hygiene (30%)**
 - Clean and Dry
 - Good Ventilation
- **Vaccination (5%)**
 - Respiratory D_x : IBR/ BRSV/ PI3
 - Intranasal- Maternal Ab/ Immature
 - DOES NOT SUBSTITUTE FPT

Weaning to Breeding



- Only 1-2 % expected deaths after weaning
- 50% of deaths due to respiratory disease
- Calves achieve 50% of adult height by 6 months of age
- Must ensure adequate rumen development: Roughage!
- Must ensure adequate growth rate: 1.8 lbs/day
- Breed at 55 – 60% mature BW
- Calve @ 85% mature BW

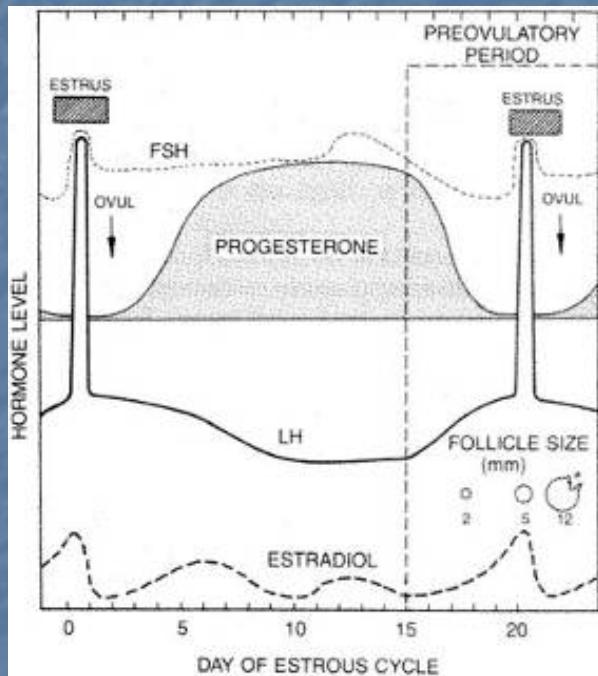
Critical Control Points



Management Practices for Dairy Replacement Heifers		
Practice	Age	Booster
Dehorning	4-10 days	
Removing extra teats	2-6 weeks	
Disinfect navel	immediately after birth	
Freeze brand	4-6 months	
Vaccinations: Decline in maternal Ab and maturing immune system		
Brucellosis	2-6 months	no
Clostridial Diseases	2-6 months	yes
Leptospirosis (5 strain)	9-12 months	annually
IBR	8-14 months	annually
PI-3	8-14 months	annually
BVD	8-14 months	annually
Breeding	13-15 months	



Heat Detection

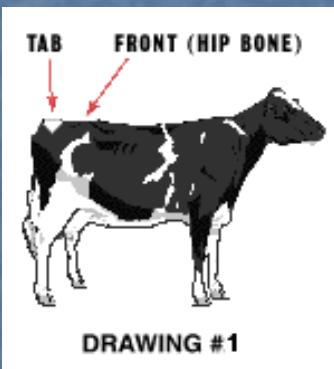
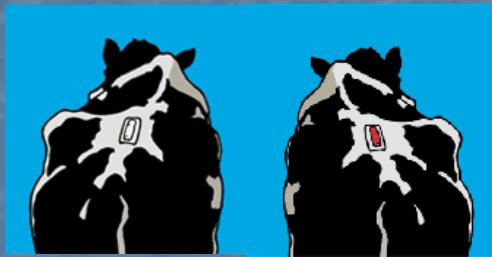
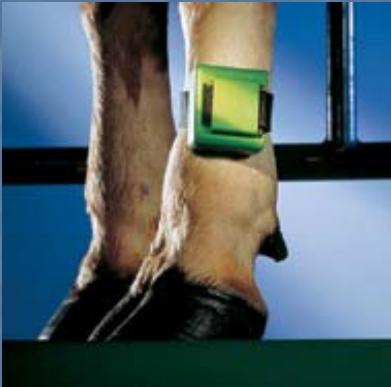


When to inseminate			
Coming into heat 8 hours (0-24 h)	Standing heat 16 hours (3-30 h)	Going off heat 8 hours (2-24 h)	
0	6	12	
Artificial Insemination:	Too Early Good Best	Good Too Late	
Natural Mating:	Too Early	Best	Too Late
	18	24 Hours	

BEHAVIOR: Alert, restless/ bawling/ shortened feeding time/ aggressive:- butting/ withholding milk/ increased urination/ mounting other cows/ chin pressing on other cows sniffing/ licking of vulva/ lip curling

EXTERNAL GENITALIA: swollen, reddened vulva/ mucus discharge

Critical Control Points



- Visual detection: 20 min
 - 1x/ day observation 60% heats
 - 2x / day observation 80% heats
 - 3x/day observation 90% heats
 - 4x/ day observation 100% heats
- Pedometers
→ Cows in estrus more active
- Tail Paint
- KAMAR ® Heat detector
- Bovine Beacon ®
- Teaser Bulls (Gomer Bull)

Estrus Synchronization

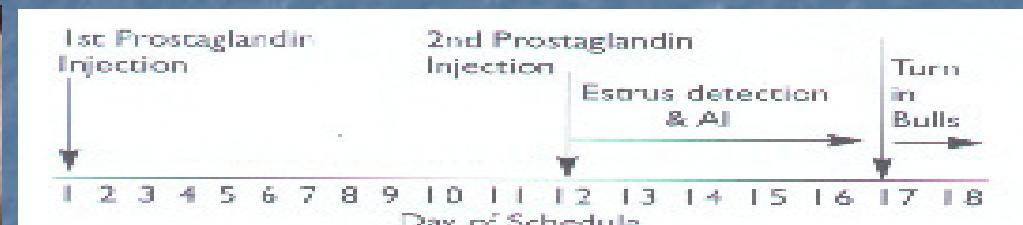
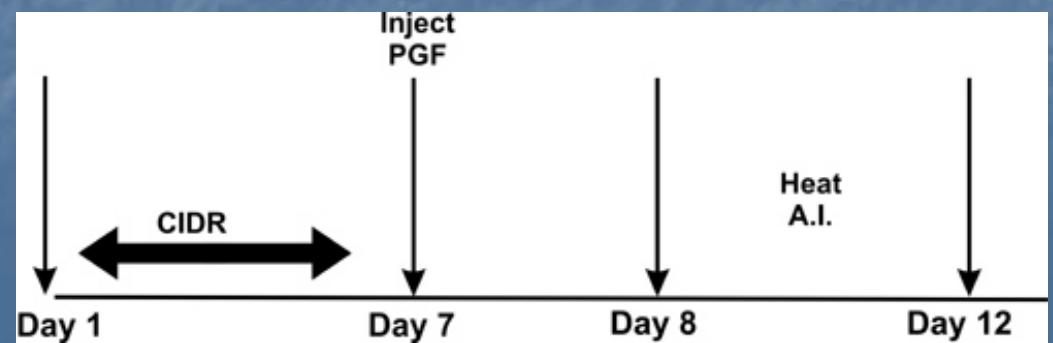


Figure 3. Double Prostaglandin Injection Program.

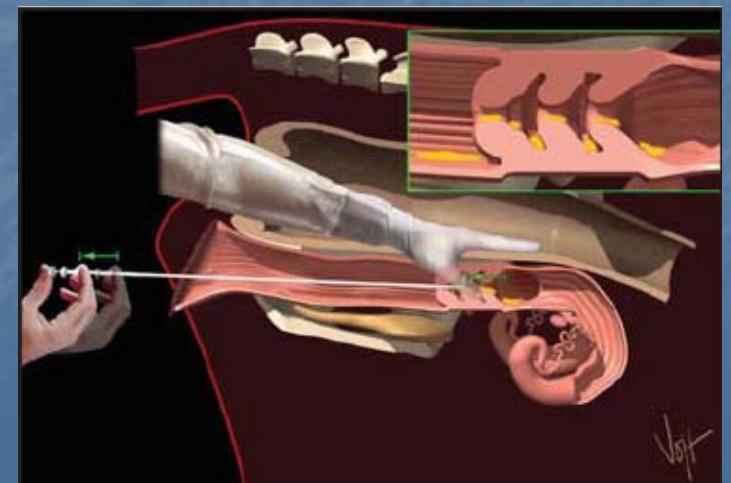
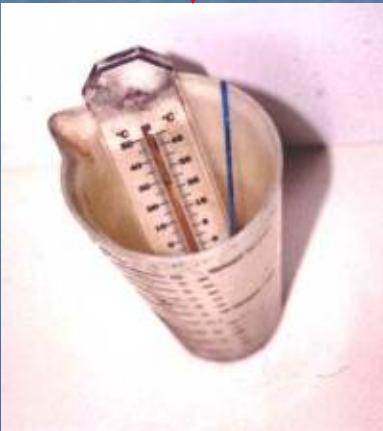
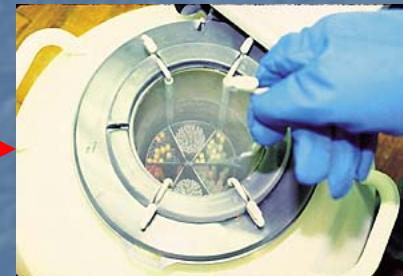


MGA-PGF System:

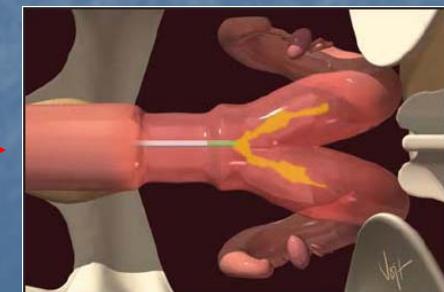
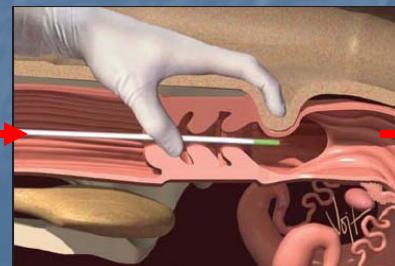
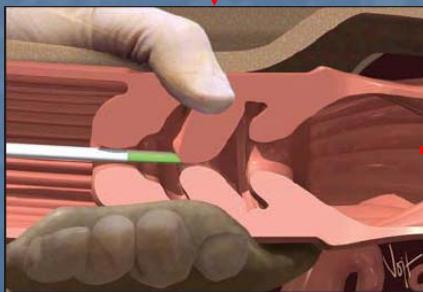
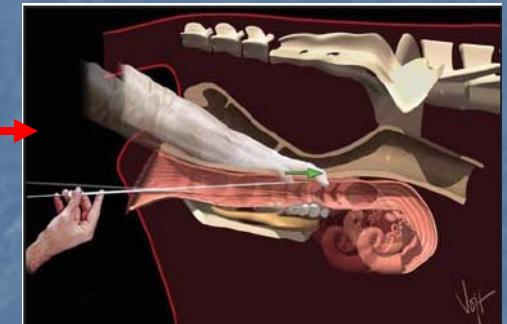
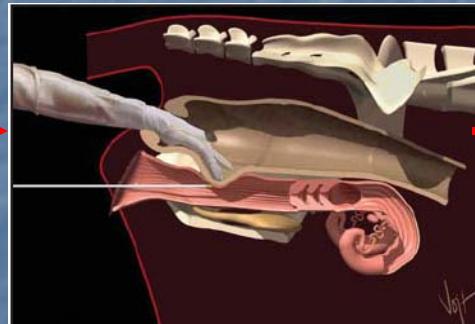




Artificial insemination



Artificial insemination



Critical Control Points



- Cow in estrus
- Reproductive Health
- Disease Free
- Optimal body weight



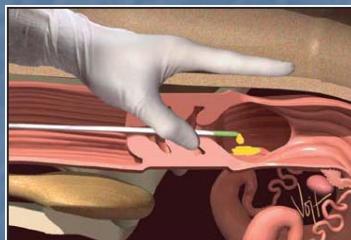
- Fertile Bull
- Calving Ease
- High Genetic Merit
- Disease Free



- Semen Storage
- Liquid Nitrogen (-196°C)
- Semen Identification
- Correct Handling



- Clean Equipment



- Training and practice!!
- Be Gentle: Avoid force
- 2-step process
- Deposit semen just through cervix



- Adequate restraint
- Work cleanly
- Work Gently
- Take your time

10 – 15 minutes



- Thaw Semen
- 33°C to 35°C (95°F)
- 45 – 60 s
- Avoid Cold Shock

Pregnancy Diagnosis



Days Post AI	Method
Day 21-24	<i>Milk Progesterone</i>
Day 26-30	<i>Ultrasound</i>
Day 40-60	<i>Rectal Palpation</i>
> Day 72	<i>Estrone Sulfate blood test</i>



Pregnancy Diagnosis



Day 37

Day 45

Day 50

Day 70

Transition



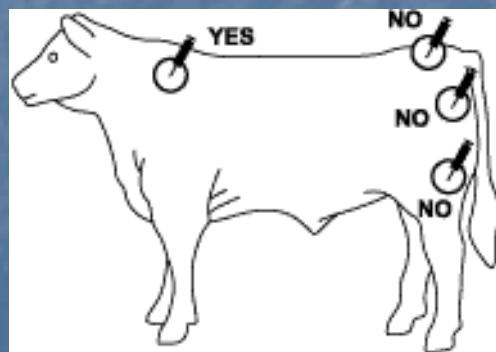
30 Days

30 Days



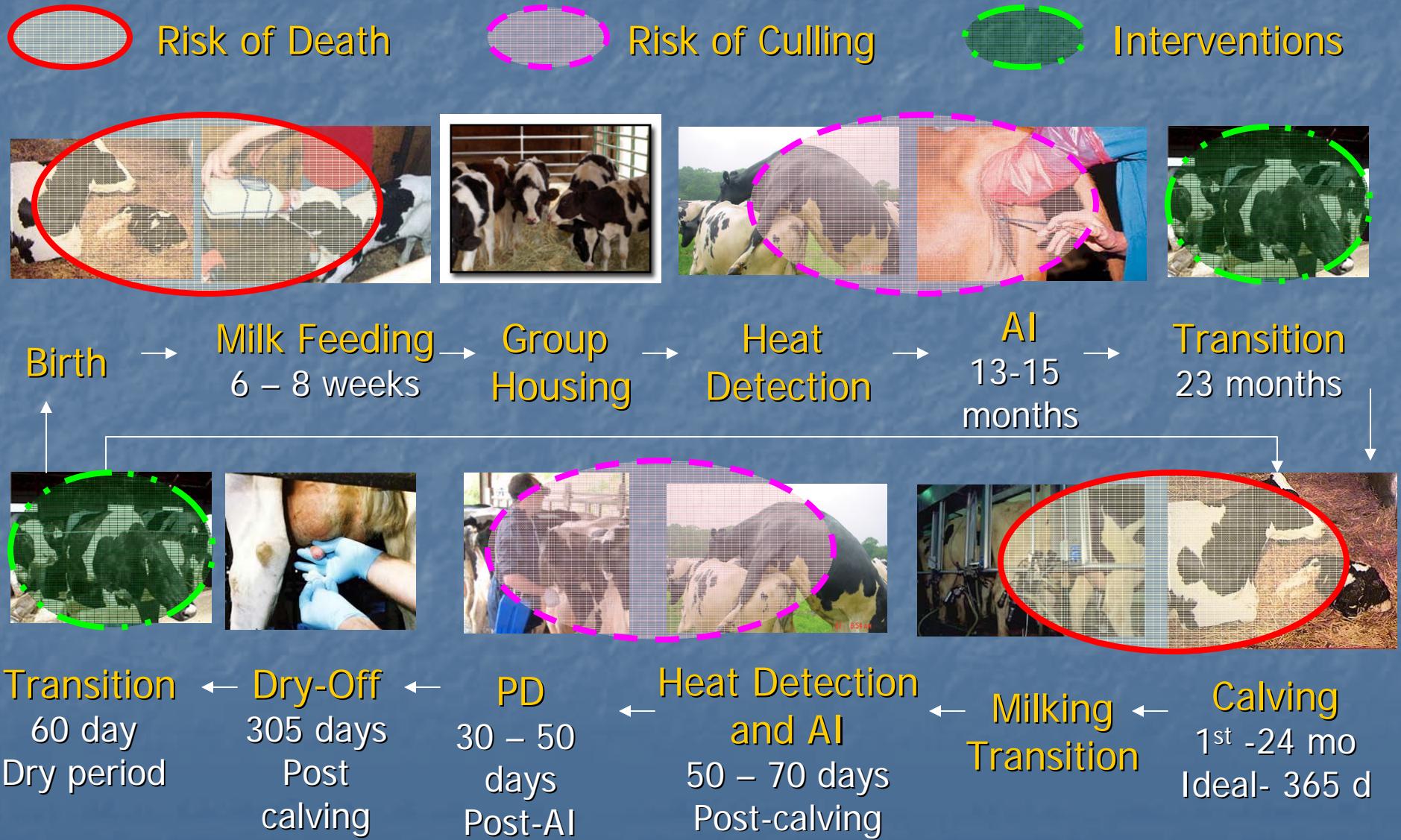
- Good transition essential for cow to reach potential
- **Crucial:** Minerals AND Intake (Energy)
- Impact disease prevention
 - Newborn calf
 - Fresh cow
- Vaccinations/ Foot Trimming/ Diet changes/ Udder Protection

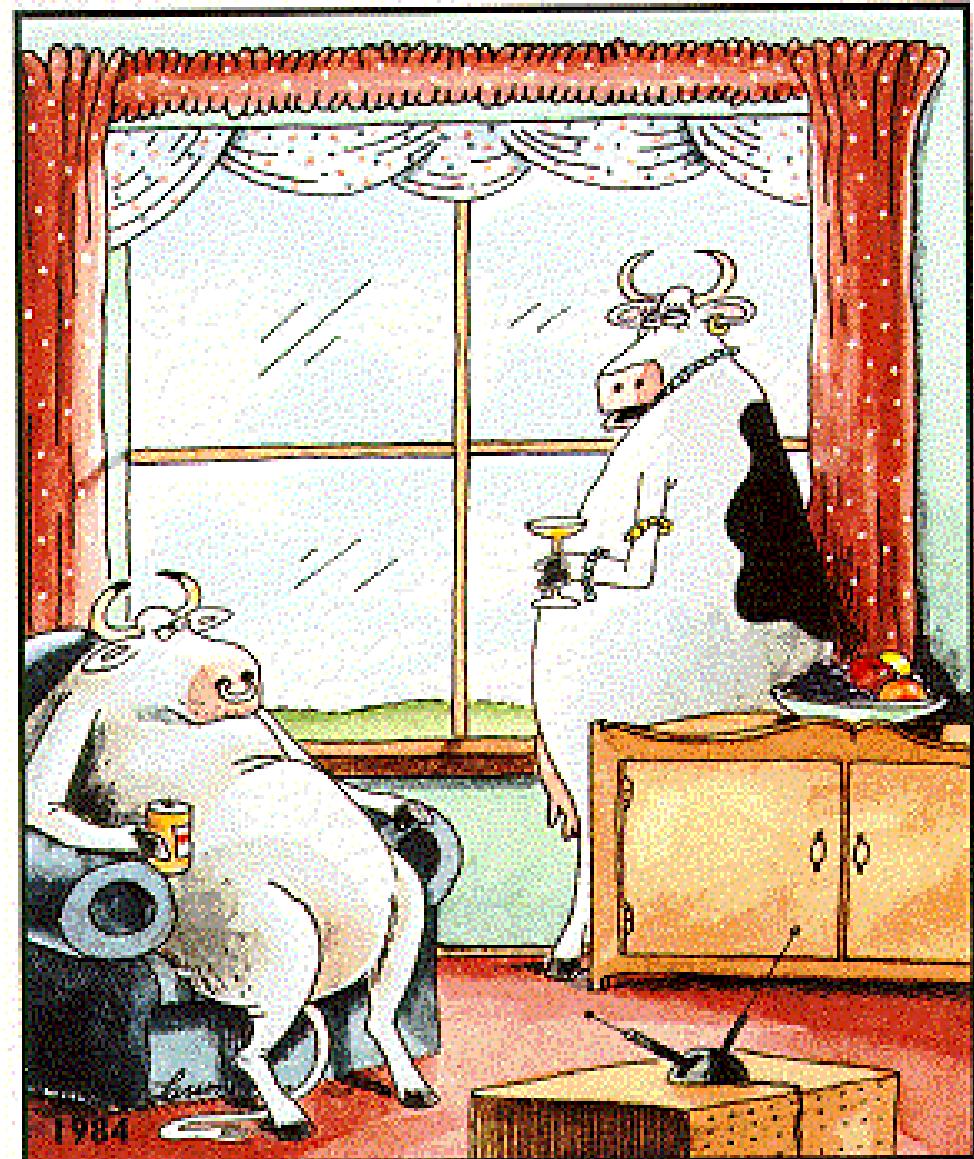
Critical Control Point: Newborn Calf Health



- Vaccinate pregnant cows
- 2 injections 2 weeks apart at least 2-3 weeks before calving
- Rota/ Corona/ *Clostridium perfringens*/ *E. coli*
- Ensure calves receive 1 gallon colostrum in first 6 hours
- Passive transfer of colostral antibodies and local gut protection
- Hygiene at calving:
→ Prevent Johne's Disease

Recap





"Wendell ... I'm not content."

