

STATION #8: REPRODUCTION

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STATION PURPOSE:

To provide team members with a sound understanding of cattle reproduction. Students will be able to identify and demonstrate, when needed, calving management practices such as pre-calving preparation, process of parturition, dystocia, equipment involved in reproductive practices, synchronization techniques, artificial insemination, embryo transfer and other technologies in this field.

STATION STRUCTURE:

This station will be a classroom situation. Teams will complete a written test. There will be various props and equipment for students to use for "hands on" questions. The examination may include but is not limited to the following areas:

- Equipment identification and explanation of its use
- Pre-calving management practices
- Describing the phases and signs of parturition 12 hours prior to and 5 hours past parturition
- Describe the process of mechanically extracting a calf using correct terms
- Determine the expected calving difficulty use a pelvis, Rice pelvimeter, calf foot and calf scale
- Given scenarios, determine position of a calf in the uterus
- Describe synchronization programs
- Female reproductive tract identification
- Spermatozoa identification

AREAS OF STUDY:

- Calving Equipment:
 - Restraint
 - Disinfectant
 - Shoulder length OB sleeves
 - 60 inch OB chain
 - OB handler for chain
 - Calf puller
- Pre-Calving Management:
 - Immunization schedule
 - 6 and 3 weeks prior to parturition – first calf heifers
 - 3 weeks – mature cows
 - Start on Koneful afternoon or evening feeding schedule two weeks before first due date.
 - Get a supply of colostrum or powdered colostrix.
 - Be able to measure pelvic areas of first calf heifers, second-calf cows, and any new mature cow.
 - Understand how to use a Rice Pelvicmeter or Krautman Pelvicmeter.
 - minimum height in centimeters from spine to pubic spine
 - maximum width in centimeters between the two iliac shafts
- Process of Parturition:
 - Recognize signs that a cow is beginning to calve.
 - Nervousness
 - Isolation from herd
 - Excessive discharge from vulva
 - Presentation of placental membranes
 - Presentation of feet or other parts of the calf
 - Expulsion of the calf
 - Licking and cleaning of the calf
 - Calf should nurse with the first five hours of birth or should be started nursing – force fed
- Calving Difficulty:
 - Understand equipment needed.

- What needs to be determined when preparing to assist in calving? How do you calculate a calving score? What is the range of calving scores that will determine whether no assistance, some assistance, a mechanical calf puller or C-section is required?
- What is the correct position to place a calf puller? What is the correct procedure for pulling a calf?
- What needs to be done once the calf is finally born?
- What are signs of abnormal presentation, twins, or a large calf?
 - Prolonged labor > 1 ½ hours
 - Cow has one contraction and immediately gets up without making progress
 - Yellowish color to amnionic fluids
 - Hoof appears with toe pointed downward, feet crossed or one foot presented ahead of the other
- Calculate Potential Calving Ease
 - Measure hoof of the calf around the coronary band to the nearest one tenth of a centimeter
 - Calculate, using pelvic measurements, a calving score

$$\text{Actual Calving Score} = \frac{(\text{Hoof circumference} - \text{Pelvic height} + 3.5) + (\text{Hoof circumference} - \text{Pelvic width} + 3.5)}{2}$$

Actual Calving Score	(0. – 4.0)	(4.01 – 5.5)	(5.51 – 6.5)	(6.51 - >)
Predicted Calving Score	1	2	3	4
	Unassisted	Assistance	Mechanical	C-Section

- With calving scores between 1-3 and the calf is the normal forward position proceed with calving chains on the front feet using a half-hitch.
- If you are confident with your ability, straighten the calf to a normal forward presentation if not call your veterinarian.
- When using a calf puller, place the butt plate under the vulva and shorten the chains before applying pulling pressure. Take your time pulling until the front shoulders appear then rotate the calf ¼ turn counter clockwise and proceed to pull hips of calf out.
- Sit the calf in a normal lying position. Use a piece of straw or finger to stimulate breathing and coughing to clear lungs.
- Synchronization, Artificial Insemination (AI) and Embryo Transfer (ET)
 - Understand synchronization protocol.
 - Understand what the correct procedure for Artificial Insemination is, along with the equipment used.
 - Understand procedures for Embryo Transfer, as well as the equipment used.
- Anatomy identification of the female reproductive tract
- Identify normal and abnormal spermatozoa cells

AVAILABLE RESOURCES:

Video: “Calving Time Management” available through Iowa State University Extension Media Services (515-294-1540) or Iowa State University Film/Video Library, 112 Pearson Hall