

**By Alwyn Jones, SAC Veterinary Services**

## **Calving cows and resuscitation of the newborn calf**

### **Main preventative measures**

- Select sire with a high Calving Ease (Direct) EBV
- Select dam whose sire has a high Calving Ease (Direct) EBV and a high Calving Ease Daughter/Maternal EBV
- Supplement with extra Magnesium (30g/day) and Digestible Undegradable Protein (DUP) (0.5kg soya bean meal/day) two weeks before calving
- Body condition score (BCS) target:
  - Spring calving: Target of 2 ¼-2 ½ at calving, aim for BCS 3 at weaning
  - Autumn calving: Target of 2 ¾ - 3 at calving, aim for BCS 2 at turn-out

### **Normal stages of calving**

#### **Stage 1**

Lasts 2-6 hours but sometimes up to 24 hours in heifers. Signs may be scant or absent in mature cows. The end of stage 1 is usually marked by the rupture of the first water sac (chorioallantois).

#### **Signs of stage 1:**

- Seeking isolation
- Vaginal discharges increase and the cervical plug is expelled
- Signs of uneasiness and pain, kicking at the underside
- Contractions may cause the cow to arch her back and strain slightly
- Extended tail

#### **Stage 2**

This is when the calf is delivered which can last from 0.5-4 hours. May be longer in heifers.

#### **Stage 3**

The afterbirth is expelled. This should happen within 12 hours of birth.

### **Intervention**

#### **When should I intervene at calving?**

As a general rule of thumb, intervention is advised if:

- First stage labour exceeds 8 hours
- The second water sac has been visible for 2 hours but cow not trying to calve
- Straining for over 30 mins but making no progress
- Stopped trying for 15-20 mins after a period of progress
- Signs of excessive fatigue, swollen tongue in the calf, severe bleeding in the cow

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### **Best practice during intervention**

- Be as clean as possible
- Use plenty of lubrication before pulling
- Do not burst the second water sac until it is time to apply calving ropes
- Assess the situation first before applying traction:
  - Assess the birth canal and pelvis for any abnormalities
  - Is the cervix fully dilated?
  - Is the calf coming head and front feet first or hind feet first?
  - Is the calf the correct side up or upside down?
  - Is it positioned correctly?
  - Determine if the calf is dead or alive

If the cervix is not dilated enough to allow passage of the calf, the cow may need more time. In this situation it is best to re-assess in half an hour to determine if there has been a change. If no change occurs, there may be a narrow cervix that is unlikely to allow passage of the calf. A caesarean section is indicated in this situation. A narrow cervix could be confused with a uterine torsion.

### **Good chance of successful delivery if:**

- Head has already been brought into the birth canal by the cow herself
- Fetlock joints have been delivered beyond the vulva by the cow herself
- The hooves glide back and forth from the vulva during straining
- Can fit hand above the head when the head and shoulders are in the pelvic canal

### **Poor chance of a successful delivery if:**

- The head of the calf not in the birth canal after a prolonged period of labour
- The forelimbs are crossed in the birth canal
- The foetus is in the birth canal but does not move when the cow strains

### **Placement of ropes**

Place the ropes above the fetlock and if possible take a half hitch below the fetlock as well. This spreads the extractive forces over a greater area.

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#### **Delivery of calf coming head and front feet first**

Apply traction when cow is assisting with an abdominal press.

Alternate limb traction until the shoulders are in the birth canal.

*As a rough rule the head and shoulders are in the birth canal when the fetlocks are one hands breadth outside the vulva.*

#### **Delivery of calf coming hind feet first**

Umbilical cord ruptures early

Rotate calf before the hips pass through the pelvis

*As a rough rule, the hips are in the pelvis when the hocks are outside the vulva.*

Apply traction in a direction slightly up from horizontal first

#### **A note on using a calving jack responsibly**

When applying traction, the force of one person per leg should be sufficient. The pressure exerted by two people pulling is around 400 psi.

However on many farms, a calving jack is routinely used. Please remember that a calving jack can exert as much as 2000 psi and so if used incorrectly can cause damage to the cow and calf.

## **Resuscitation of the newborn calf**

Airway – Breathing – Circulation (ABC)

### **Airway**

Clear the airways by clearing mucus and membranes from the mouth and nose.

Hanging a calf over a gate is not recommended. The calving jack may be used instead to lift the calf upside down for a short period.

### **Breathing**

If the calf is not breathing within 30 seconds, the following methods may help to stimulate breathing.

- Straw up the nose
- Cold water into the ears or over the head can elicit the gasp reflex
- Massage chest with forelimb
- Rubbing the chest with clean straw

### **Circulation**

After a prolonged and difficult calving, a calf is often suffering from acidosis. Acidosis occurs when blood becomes too acidic.

Signs of acidosis:

- Erratic kicking movement in the uterus (pre birth)
- Irregular breathing

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- Delay of over five minutes in lifting head up and sitting upright ('dozy' calves)
- Lack of muscle tone, ie flaccid limbs
- Lack of foot withdrawal when pinched between the hooves

Severe acidosis has a detrimental effect on the lungs and heart. It also reduces calf vigour and strength of suck reflex. It also impairs absorption of antibodies and as a result lessens the chance of long term survival by increasing the risk of pneumonia and diarrhoea.

#### **Treatment of acidosis**

Bicarbonate solution administered into the vein can be successful in neutralising acidosis.

- Solution must be administered into the vein (bicarbonate administered under the skin or by mouth is not recommended)
- Solution must be sterile
- The solution should ideally be administered as soon as possible after birth to calves showing signs of acidosis
- Calves should be breathing before bicarbonate therapy is administered. Bicarbonate therapy should not be used in calves that are not breathing

A safe dose is 50-100mls of sterile 8.4% sodium bicarbonate solution administered into the vein over 30 seconds.

#### **Post calving care of the cow**

Administer pain relief using non steroidal anti-inflammatory drugs to the cow. Consult your vet about this. Leave the cow with the calf ideally in a clean, small pen to bond.

Too much intervention interferes with the maternal bond increasing the chance of rejection.

Treat the navel with iodine or chlorhexidine solution.

In total, it is recommended that a calf should receive 10% of its bodyweight in colostrum within the first six hours. This is about four litres for a 40kg calf. Ensure that at least two litres of colostrum is given within the first two hours after birth.

*Information from Alwyn Jones and Basil Lowman SAC Consulting Veterinary Services St Boswells*