Underweight cow

History:
Age, stage of lactation, proximity to calving?
Is this a herd or individual problem?
Are there any recent changes in management or nutrition?
Blood sample - β-Hydroxybutyrate >1.2 mmol/L indicates subclinical ketosis and active fat metabolism

Weight loss

Poor rumen fill

Can't eat

- Unpalatable feed
  - Feed should be fresh (replaced twice daily). Leftover feed should be removed daily. Spoiled feed should not be fed. Diets high in unpalatable anionic salts shouldn't be fed
- Social
  - Lack of feed, feedspace or bullying
    - Dairy cows should always have feed available, target 75-80cm/cow (Cooper 2017). Reduce bullying by having enough feedspace, several escape routes, 95% cubicle occupancy, minimise group changes
- Physical
  - 1. Teeth problems
    2. Mandibular fractures
  - 1. Lumpy jaw
    2. Wooden tongue
    - Systemic antimicrobials or potassium iodide (off license) and NSAIDs. Consider euthanasia if unable to prehend food

Won't eat – primary disease - causing reduced feed intake

- Infectious
  - For example Pneumonia, Mastitis, Metritis, Peritonitis
- Non-infectious
  - Lameness
  - Physical blockage
    - For example Left displaced abomasum, Right displaced abomasum, Intussusception, Caecal dilation +/- volvulus, Impaction
      - Surgical correction

Good rumen fill

- Malutilization
  - Liver disease
    - For example Fluke, Ketosis and Fatty Liver, Hepatitis, Subclinical copper toxicity
- Malabsorption
  - Small intestinal disease
    - Enteritis
      1. Salmonellosis
      2. Winter dysentery
    - Clinical Johne's
      - Diagnosis: faecal PCR or culture
        Treatment: cull on humane grounds
    - Coccidiosis
      - Diagnosis: Faecal egg counts and speciation
        Treatment: ionophores
    - Parasitic gastroenteritis
      - Diagnosis: Faecal egg counts
        Treatment: class I, II or III anthelmintic. There is less reported anthelmintic resistance in cattle than sheep (Sutherland and Leathwick 2011)
- Maldigestion
  - Rumen dysfunction
    - Sub-Acute Ruminal Acidosis (SARA)
      - Diagnosis: Often present with diarrhoea, reduced milk yield and fat. Ruminocentesis - pH <6.0.
        Treatment: Don't feed more than 4kg concentrate in one go, ensure adequate dietary fiber
    - Traumatic reticulitis
      - Diagnosis: Withers pinch test, bar test, Eric William's test, cardiac ultrasound.
        Treatment: Place a magnet, often euthanasia

Failure to gain

- Mineral deficiency
  1. Copper
  2. Selenium
  3. Cobalt
  4. Iodine
- Is there chronic disease?
  1. BVD – persistent infection
  2. Chronic pneumonia
  3. Congenital heart disease
  4. Parasitic gastroenteritis
  5. Coccidiosis
- Ration analysis
  1. Dry Matter - typically 30-40%
  2. Energy - typically 200-300 MJ Metabolizable Energy/day
  3. Protein (Crude Protein - target 15-17%)
  4. Rumen degradable protein - typically 70-80% of CP
  5. Rumen undegradable protein - typically 20-30% of CP
  6. Fiber - measure of digestibility
  7. Fat (oils) - Target <5%

References

- LeBlanc S (2010) **Monitoring Metabolic Health of Dairy Cattle in the Transition Period Introduction-Metabolic Challenges in Peripartum Dairy Cows and Their Associations with Reproduction.** J Repro Develop **56.** Website: www.jstage.jst.go.jp (pdf download).
- Sutherland I A & Leathwick D M (2010) **Anthelmintic resistance in nematode parasites of cattle: a global issue?** *Trends Parasitol* **27** (4), 176-181 PubMed.
- Cooper R (2009) **Nutrition of Dairy Herds Part 1 - Maximising Dry Matter Intake.** In: *NADIS Animal Health Skills.* Website: www.nadis.org.uk.