



Rochester Veterinary Practice, 72 Lowry Street Rochester 3561, Phone (03) 54842255 admin@rochyvet.com.au

## Ketosis/ Acetonaemia in Cattle

Ketosis/ acetonaemia is a metabolic disease of high producing cows associated with an inadequate supply of energy. Energy requirements of the dairy cow peak at 4 to 7 weeks post calving, whilst feed intake peaks at about 8 to 12 weeks after parturition; thus, the intervening period of milk production is sustained by mobilisation of the cow's fat and protein reserves. It is important to realize that the majority of dairy cattle are in negative energy balance (NEB) in early lactation, resulting in subclinical ketosis which has profound effects on cow health, productivity and future fertility.

Cows of any lactation can be affected and it most common occurs 2 weeks to 2 months after calving (90% of cases occur in this period).

Classification of ketosis:

- The term **clinical ketosis** describes the disease of ketosis that is accompanied by obvious clinical signs.
- **Subclinical ketosis** refers to the presence of ketone in the blood and urine in the cow showing no other clinical signs.
- **Secondary ketosis** can result from any disease that causes a reducing of feed intake during early lactation (such as LDA, metritis etc).
- **Tertiary ketosis** can result in excessive intakes of ketogenic food. eg. silage with high levels of butyric acid (not a clinical issue).

### Clinical Signs

There are two forms of clinical ketosis:

- Wasting form. This is the most common form, with the cow losing body condition over a period of days or weeks. There is a loss of appetite and a drop in milk production. The faeces are often dark and firm, with a "waxy" appearance (often described as "horse-like").
- Nervous form. A small number of cases of clinical ketosis will develop neurological signs (10%), due to a hypoglycaemic encephalopathy or production of isopropyl alcohol from Acetyl CoA. Signs vary from excitement to head pressing, circling, wandering, licking at any available object, teeth grinding, salivation and depressed appetite. May appear blind. Signs are intermittent.

Diagnosis of clinical ketosis

- Blood ketone levels over 1 mmol/l.
- Urine ketones detected
- Some vets and farmers can smell ketones in the urine or milk or even on the breath of affected cows.

**Treatment**

- Intravenous dextrose (for severe cases).
- Oral propylene glycol twice daily for 3 days.
- Vitamin B1 injection
- Vitamin B12 injection
- Treatment of any underlying disease such as metritis or mastitis.

**Prevention**

Prevention of ketosis requires good feeding management and good transitioning of the cow from pre-calving period to lactation. It is also important to ensure the body condition of cows are managed well throughout the lactation so that cows are neither too fat (>6 on a 1-8 scale) nor too skinny (<4) at calving.