Roles of Vitamin B12:

Vitamin B12 is a water soluble vitamin which acts as a coenzyme for various metabolic functions, including fat and carbohydrate metabolism and protein synthesis. It is vital for glucose production in ruminants which is essential to meet the high energy demands of growth and lactation. Cobalt is required by rumen microbes to synthesise Vitamin B12 – without a good source of Cobalt in pasture and grain, Vitamin B12 deficiency can result.

Cause of Vitamin B12 deficiency:

- Cobalt deficiency in soil and rations
- Weathering, leaching or intensive cropping
- Lush, rapidly growing pastures
- High superphosphate application
- Stress from lambing, calving, and high growing stages

Areas where Cobalt deficiencies occur:

- Coastal calcareous sands
- High rainfall granite soils
- Higher pH soils (limestone country)

Most at risk:

- Young growing stock
- Lambs are more susceptible than calves
Symptoms of Vitamin B12 deficiency:

- Anaemia
- Poor appetite and growth rates
- Diarrhoea
- Ill thrift, lethargy and death
- Watery discharge from the eyes
- Reduced resistance to parasite infection and disease
- Reduced wool and milk production
- Lower fertility

Cobalife® VB12 treats and controls Vitamin B12 deficiency in sheep and cattle:

Subcutaneous injection of Vitamin B12 is the preferred method of preventing and correcting Vitamin B12 deficiency in livestock. Cobalife VB12 contains Hydroxocobalamin, a longer acting Vitamin B12 form compared to cyanocobalamin.

Cobalife VB12 should be administered only by subcutaneous injection high on the neck behind the ear.

<table>
<thead>
<tr>
<th>Animal</th>
<th>Dose Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lambs</td>
<td>0.5 mL at marking or weaning</td>
</tr>
<tr>
<td>Sheep</td>
<td>1-1.5 mL pre-lambing</td>
</tr>
<tr>
<td>Calves</td>
<td>2-3 mL from 2 months of age</td>
</tr>
<tr>
<td>Cattle</td>
<td>4-6 mL pre-calving</td>
</tr>
</tbody>
</table>

The frequency of dosing should be related to the severity of the deficiency. For stock in extremely deficient areas, repeat dose every 2-3 months. In less deficient areas, repeat dose every 5-6 months or as found necessary.

Number of animals treated per pack

<table>
<thead>
<tr>
<th>Product</th>
<th>Calves</th>
<th>Cattle</th>
<th>Lambs</th>
<th>Sheep</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cobalife® VB12 500mL</td>
<td>Up to 250</td>
<td>Up to 125</td>
<td>Up to 1000</td>
<td>Up to 500</td>
</tr>
</tbody>
</table>

Withholding Periods:
Milk: 0 days
Meat: 0 days

Export Slaughter Interval:
0 days

Suggested Cobalife® VB12 treatment programs:

Deficiency in Vitamin B12 may occur at any stage of the year, but is more likely to happen at the following times:

1. When animals are under prolonged periods of stress due to adverse weather or when intake of feed is low or lacking nutritional value
2. During stress from calving/lambing or transportation
3. During growing periods of stock

There are 2 strategic treatment times that supplementation with Vitamin B12 can optimise your production response.

1. Prior to mating to help improve feed utilisation, especially when livestock are stressed from high production demands or adverse weather. Improved feed utilisation may lead to improved body condition and fertility.
2. Before calving/lambing time when stock are under high stress. This will assist ewes and cows during the rigours of gestation and early lactation, and supply a dietary source of Vitamin B12 to their young to meet their daily requirements and improve weight gains.

For more information contact Bayer Animal Health 1800 678 368