Vitamin B12 2mg/mL as Hydroxocobalamin and 4mg/mL Selenium as sodium selenate

For the treatment and control of Vitamin B12 and Selenium deficiency in sheep and cattle

Roles of Vitamin B12 and Selenium:

**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.

**Selenium** is a trace element that is vital for normal metabolism; it is an essential anti-oxidant, and key component of proteins that have a role in muscle function, immune system and synthesis of thyroid hormones.

Cause of Vitamin B12/Selenium deficiency:

- Cobalt/Selenium 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 and Selenium 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
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 + Selenium 500 mL</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 + Selenium treatment programs:
Deficiency in Vitamin B12 and Selenium 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 and Selenium 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 and Selenium to their young to meet their daily requirements and improve weight gains.

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

Subcutaneous injection of Vitamin B12 and Selenium is the preferred method of preventing and correcting these deficiencies in livestock. Cobalife VB12 + Selenium contains Hydroxocobalamin, a longer acting Vitamin B12 form compared to cyanocobalamin. Cobalife VB12 + Selenium should be administered by subcutaneous injection high on the neck behind the ear.

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.

Do not exceed the stated dose or dose more frequently than recommended. Consult your veterinarian to determine your selenium status due to the risk of overdosing Selenium.

Symptoms of Vitamin B12 or Selenium deficiency:

<table>
<thead>
<tr>
<th>Cobalt deficiency</th>
<th>Selenium deficiency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anaemia</td>
<td>Stiff gait or lameness</td>
</tr>
<tr>
<td>Poor appetite and growth rates</td>
<td>Heart failure</td>
</tr>
<tr>
<td>Diarrhoea</td>
<td>White Muscle Disease</td>
</tr>
<tr>
<td>Ill thrift, lethargy and death</td>
<td>Still births and premature calving</td>
</tr>
<tr>
<td>Watery discharge from the eyes</td>
<td>Retained foetal membranes in cattle</td>
</tr>
<tr>
<td>Reduced resistance to parasite infection</td>
<td>Mastitis</td>
</tr>
<tr>
<td>Reduced wool and milk production</td>
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<td>Lower fertility</td>
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