Passionate about animal health

MULTIMIN®
Injection for Sheep

Top-up your sheep for performance
Trace minerals play an important role in the production cycle of all sheep (ewes, lambs, rams and wethers). They influence growth rates and development, fertility (both ewes and rams), reproduction, lactation and general health of livestock. Supplementation of trace minerals can significantly impact productivity if deficiencies are present. There are a number of factors that can lead to reduced trace mineral uptake in livestock. These factors include soil composition, pasture mix and seasonal influences. For example:

- Sandy soils are usually low in trace minerals.
- Clover plants are less efficient in taking up selenium from the soil than grasses are.
- Rapid pasture growth in spring can reduce trace mineral concentration in plants.
- High rainfall can leach minerals out of the topsoil layer.

Trace mineral requirements in livestock vary throughout the year. Supplementation prior to joining and times of stress such as lambing and weaning can aid in lifting productivity at critical times in the production cycle.
Selenium supplementation in sheep has a role in:

- Growth, immunocompetance and fertility
- Prevention of white muscle disease (WMD) – “stiff lamb disease”
- Fighting infectious disease, especially in cold climates

Selenium deficiency causes:

- Reduced growth (meat and wool)
- Poor reproductive performance in older animals.
  eg Retained foetal membranes

“Survivability of new born lambs can be increased following selenium supplementation of ewes pre-lambing.”

Zinc supplementation in sheep has a role in:

- Growth and metabolism
- Wool growth
- Bone and cartilage development
- General health and immunity
- Reproduction
- Sperm production

Manganese supplementation in sheep has a role in:

- Growth
- Reproduction
- Embryo development
- Ovulation
- Bone, cartilage and connective tissue development
- Carbohydrate and lipid metabolism
- Sperm production
- Lactation

LONG TERM SUPPLEMENTATION

Long term supplementation delivers trace minerals over an extended period of time and involves the absorption of a small amount of minerals each day. Delivered orally, long term supplementation products are subject to differing levels of absorption by the gastro-intestinal tract and often do not allow for differing requirements throughout the production cycle. A failure to meet increased requirements at particular times can result in deficiency, which can reduce the productivity of your livestock and expose them to infections.

Long term supplementation products may aid in the correction of permanent deficiencies or where a specific mineral deficiency in known as a result of soil type or pasture composition.

Long term supplementation products include:

- Trace mineral rumen boluses
- Long acting “depot” type injections
- Minerals administered via water and feed medication (such as Virbac’s Maxi-Min™)
- Lick blocks and loose licks
CRITICAL EVENTS IN THE SHEEP PRODUCTION CYCLE

1. Joining

Trace minerals play an important role in the fertility of both ewes and rams. An animal’s failure to reach the optimal trace mineral status could result in failure to conceive which reduces your potential lambing percentage.

Why is topping up prior to joining important?

Ewes

Trace minerals assist in conception and can affect the fertility of the ewe. They support ovulation, oestrus and the conception process.

Rams

Trace minerals assist in sperm production and affect semen count and quality. Approximately 60 days prior to joining rams will be producing the semen used during joining and they must therefore be in optimal condition at this time.

2. Lambing

Why is topping up pre-lambing important?

Lamb survivability

Lamb survival is critical to the profitability of any sheep enterprise. Trace minerals are vital to ewe health, and a healthy ewe has a greater chance of producing a strong, healthy lamb. The presence of essential trace minerals prior to lambing allows for mineral transfer from the ewe to the lamb which aids in increasing the mineral status of the lamb at birth.\(^{10}\)
Ewe recovery after lambing

Ewe recovery after lambing is critical to ensuring they reach their target fat score for subsequent joining. Trace minerals aid in the immune system which in turn limits post lambing problems such as retained afterbirths, mastitis, metritis (uterine infection), and lameness which can have a negative effect on conception rates.

3. Weaning

Why is topping up at weaning important?

Weaning is a stressful time for young lambs. They are removed from their mothers and left to look after themselves, and the feed may not be sufficient to supply their nutritional requirements. Increasing their trace mineral status at this time can assist in their ability to convert feed into energy and thus continue to grow.

Growth rates in young lambs

Trace minerals are essential for growth and bone development and mineralization in young stock. A deficiency in trace minerals can lead to slowed growth resulting in a longer tail in your lambs. Topping-up the lamb’s trace mineral status at weaning can help prevent any slowed growth as a result of deficiencies of trace minerals.

Increased immunity - immunocompetence

Young stock are most susceptible to infection with a wide range of disease causing organisms. Trace minerals aid in the young lamb’s ability to maintain good health and help their immune system fight infections and disease.
TRACE MINERALS AND THEIR ROLE IN THE PRODUCTION CYCLE

**KEY**
- Zinc (Zn)
- Manganese (Mn)
- Selenium (Se)

**TRACE MINERAL RESPONSIVE CONDITIONS**
- Skin: Zn
- Footrot: Zn
- Wool Quality: Zn

**FOETUS**
- Development: Zn
- Transfer of Immunity: Zn, Se
- Embryo Survival: Se, Mn

**BREEDING**
- Female Ovulation/Oestrus: Se, Mn
- Male Sperm (Count and Quality): Zn, Se, Mn

**EWE**

**LACTATION**
- Mastitis/SCC: Zn, Se

**LAMB**

**GROWTH**
- Appetite: Zn
- Cartilage and Bone Form: Zn, Mn
- White Muscle Disease: Se
- Cell Division: Zn

**BIRTH**
- Survival: Se, Mn
- Retained Placenta: Zn, Se
Indications
Chelated Trace Mineral Injection for sheep and beef and dairy cattle deficient in and/or responsive to manganese, zinc and/or selenium supplementation.

Active Constituents
- Zinc – 40 g/L as Disodium Zinc EDTA
- Manganese – 10 g/L Manganese as Disodium Manganese EDTA
- Selenium – 5 g/L Selenium as Sodium Selenite

Dose Rate
Use in sheep by subcutaneous injection
Dose rate: 0.2 mL/10 kg (1 mL/50 kg)

Liveweight

<table>
<thead>
<tr>
<th>(kg)</th>
<th>Dose (mL)</th>
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<tbody>
<tr>
<td>20-25</td>
<td>0.5</td>
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<tr>
<td>26-30</td>
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<tr>
<td>31-40</td>
<td>0.8</td>
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<tr>
<td>41-50</td>
<td>1.0</td>
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<td>51-60</td>
<td>1.2</td>
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<tr>
<td>61-70</td>
<td>1.4</td>
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<tr>
<td>70+</td>
<td>0.2 mL/10 kg</td>
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Withholding periods
Meat – nil
Milk – nil
ESI – nil

Injection technique
Inject subcutaneously high on the neck. Inject in a downward motion to avoid loss of product at the injection site.
References

MULTIMIN®
Injection for Sheep

Selenium - Zinc - Manganese

✓ Easy subcutaneous injection
✓ Increases trace mineral status in sheep
✓ Balanced ratio of three essential trace minerals
✓ Bioavailable formulation

Trace mineral supplementation can help maximise growth and development, reproduction and general health of livestock.

MULTIMIN Copper-Free Injection for Sheep and Cattle.
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