What is Multimin®?

Multimin® is an injectable source of selenium, zinc and manganese (+/- copper) that significantly increases the trace mineral status of cattle and sheep at critical times. Critical times are defined as periods of increased trace mineral demand such as before parturition, before joining, at dry off (dairy), after transport and at marking and weaning.

During these critical times, supplementation with oral trace minerals is often not enough to meet the increased demands of the reproductive and immune systems. The absorption of trace minerals through the gastrointestinal tract is poor and antagonism by other minerals (eg. Ca, S, Mo and Fe) can also affect absorption. Multimin Injection utilises patented technology that presents the copper, zinc and manganese in a chelated form via disodium EDTA. The chelated minerals are highly bio-available and as an injection, Multimin avoids the antagonism and absorption issues of oral supplements.

<table>
<thead>
<tr>
<th>SPECIES</th>
<th>TIME TO USE MULTIMIN</th>
<th>BENEFIT</th>
<th>EVIDENCE</th>
</tr>
</thead>
</table>
| Beef    | One month before joining | • Improved conception  
|         |                      | • Tighter calving interval  
|         |                      | • Improved embryo survival | Mundell et al 2012  
|         | At marking and weaning | • Improved immune function  
|         |                      | • Improved disease resistance  
|         |                      | • Stronger, healthier calves | Arthington and Havenga 2012  
|         | At induction to feedlots | • Improved disease resistance  
|         |                      | • Reduced requirement for antibiotic treatment  
|         |                      | • Improved growth after transport stress  
|         |                      | • Improved carcass characteristics | Richeson et al 2011  
| Dairy   | At dry off, one month before calving and one month before joining | • Reduced somatic cell count  
|         |                      | • Reduced sub-clinical and clinical mastitis  
|         |                      | • Reduced endometritis  
|         |                      | • Reduced still born calves  
|         |                      | • Benefits are particularly evident in multiparous cows  
|         |                      | • Increased conception  
|         |                      | • Reduced days open | Machado et al 2012  
|         |                      | | Machado et al 2013  
|         |                      | | Hawkins 2007 |
| Sheep   | One month before joining | • Improved conception | Virbac (data on file) |

**MULTIMIN INJECTION FOR CATTLE**

<table>
<thead>
<tr>
<th>COMPOSITION</th>
<th>5 mg/ml</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium selenite</td>
<td></td>
</tr>
<tr>
<td>Disodium manganese EDTA</td>
<td>10 mg/ml</td>
</tr>
<tr>
<td>Disodium zinc EDTA</td>
<td>40 mg/ml</td>
</tr>
<tr>
<td>Disodium copper EDTA</td>
<td>15 mg/ml</td>
</tr>
</tbody>
</table>

**MULTIMIN COPPER-FREE INJECTION FOR SHEEP AND CATTLE**

<table>
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<tr>
<th>COMPOSITION</th>
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<tr>
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<td>10 mg/ml</td>
</tr>
<tr>
<td>Disodium zinc EDTA</td>
<td>40 mg/ml</td>
</tr>
</tbody>
</table>

- Aqueous injection
- Nil meat and milk withholding periods
- Nil ESI
- 9 month broached vial claim
List of Published Articles on Multimin®


For more information on these products, contact your Area Sales Manager who can be found at [www.virbac.com.au](http://www.virbac.com.au) or by calling Customer Support 1800 242 100.

Multimin® is a registered Trademark of Virbac (Australia) Pty Ltd

*Multimin used in these studies contained 20 mg/ml more zinc than Multimin registered in Australia.

† Multimin used in these studies contained 20 mg/ml less zinc, 10 mg/ml more manganese and 5mg/ml less copper than Multimin registered in Australia.