

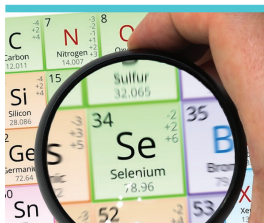
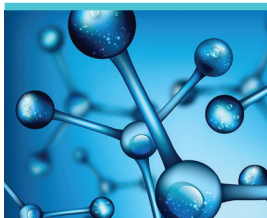


serval

# ADVICE SHEET

Infection  
Immunity  
Bioavailability  
Growth  
**Selenium**  
Organic  
Antioxidant  
Storage

## | SELENIUM



# DEFINITION

Selenium is a **trace element** required for proper growth of young animals. They cannot synthesize it. It is therefore **provided by the mother during gestation and through their diet**.

# BIOLOGICAL ROLES

ANTIOXIDANT  
ACTION

PASSIVE IMMUNITY  
FUNCTION  
THYROID  
FUNCTION

ACTIVE IMMUNITY  
HUMORAL  
AND CELLULAR  
IMMUNITY

# DEFICIENCIES

Certain manifestations are specific to a lack of selenium (such as muscular dystrophy), others are non-specific (immune deficiency) therefore more difficult to link to a deficiency in this trace element.

## Muscular dystrophy

Acute form  
(myocardium dystrophy):

It is mostly encountered in calves and lambs less than one month old of which the mother was highly deficient in selenium and is characterised by acute heart failure and respiratory distress, then rapid death of the animal.

Subacute form  
(skeletal muscle dystrophy – white muscle disease):

It is characterised by weakness or lameness and inability to stand up. If the animal is capable of standing up, it trembles and can only remain in standing position only for a few minutes.

## Sensitivity to infections

Selenium, thanks to its role in **humoral-mediated** (antibody responses) and cell-mediated (phagocytic and lymphocytic host response) immunity, improves resistance to infectious diseases.

## Growth

As selenium plays an important role in the **thyroid function**, it is also involved in the growth of the young animal (basal metabolism).

The impact of selenium on the average daily gain and the weight of the calf has been studied. During the first stages of growth (up to 230 kg), selenium supplementation in calves with a low selenium status makes it possible **to improve zootechnical performance** (CASTELLAN et al., 1999).

# INTAKES

Selenium is one of the trace elements that play a fundamental role in the survival of calves, lambs and kid goats.  
On farms, deficiencies are increasingly frequent due to soil and plants with a low selenium content.

In deficient farms, intake of selenium at the end of gestation limits health problems. Although supplementation of mothers ensures good correction for the first days in the life of the young animal, it is not enough to guarantee its future. It is therefore **imperative to repeat the intake of selenium for calves, lambs and kid goats.**

**The traditional source for Selenium supplementation is the inorganic source (sodium selenite) but there is also an organic form that has many advantages.**

# NEEDS

**Needs vary according to the type of animals and according to its age.** Some animals are more or less sensitive to selenium deficiencies. This is the case with Belgian Blue calves for example and kid goats.



calves



lambs



kid goats

Dairy cattle Daily needs in mg/ kg of DM*	0,3
Beef cattle Daily needs in mg/ kg of DM*	0,1-0,3

Ovine Daily needs in mg/kg of DM*	0,1
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Ovine Daily needs in mg/kg of DM*	0,1
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\* DM: Dry Matter

# INTEREST OF ORGANIC SELENIUM

- Improvement of the immune status
- Improvement in resistance to infections: diarrhea, arthritis, respiratory infections
- Improvement in performance for better profitability: growth
- Antioxidant role (contrary to sodium selenite)
- Reduction of deficiencies
- Availability and storage (improvement in absorption, and increase of reserves) of this selenium (contrary to sodium selenite)
- Usage according to the needs of the animal thanks to storage in the tissues
- **Bioavailability 5 times higher than inorganic selenium**

# SERVAL PRODUCTS

Serval has chosen to enrich most of its formulas with **selenium in organic form**, because this makes it possible to:

- offer a source of this trace element in a **natural form**.
- improve its **bioavailability** (absorption and assimilation).
- render this trace element available at any time: thanks to **possible storage**.
- have a **stable form** in the intestinal environment.

