Nutrition For Health

The role of trace minerals in supporting immunity at calving

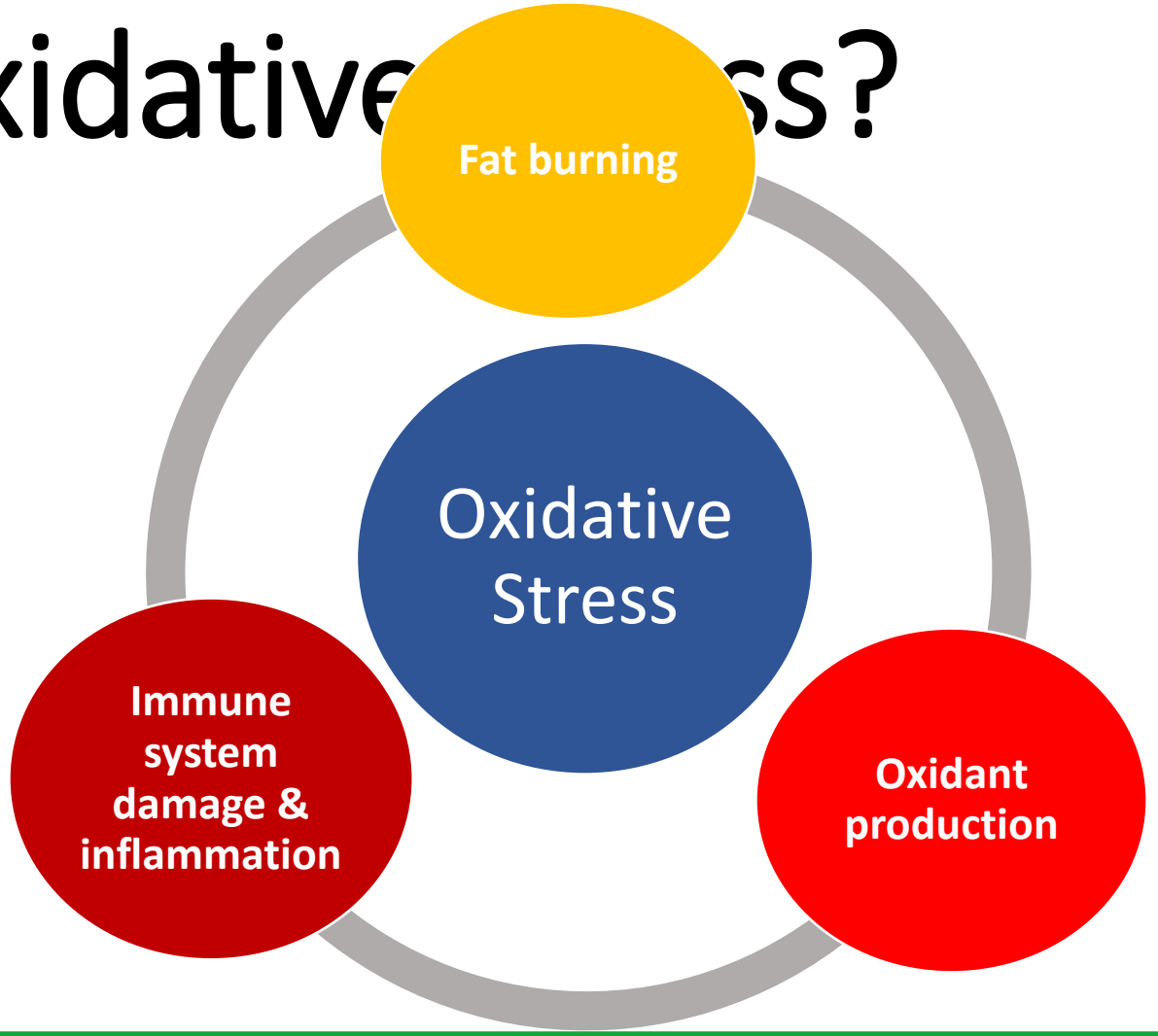
- What are the health impacts of poor nutrition around calving?
- What causes poor immune function – oxidative stress?
- How can nutrition support good immune system function?
- What is the role of trace minerals?
- How can trace minerals be effectively supplied?

Health Impacts of Nutrition at Calving

- Majority of disease occurs from calving to 4 weeks into lactation
- Metabolic diseases
  - Ketosis and fatty liver
  - Displaced abomasum
  - Milk fever
- Disease caused by infection
  - Mastitis
  - Metritis

What is Oxidative Stress?

- Demand for energy, protein and minerals rises
- Intake falls
- Body fat burned
- Excess of oxidants
- Direct immune system damage
- Trigger inflammation pathways
- Further fat burning

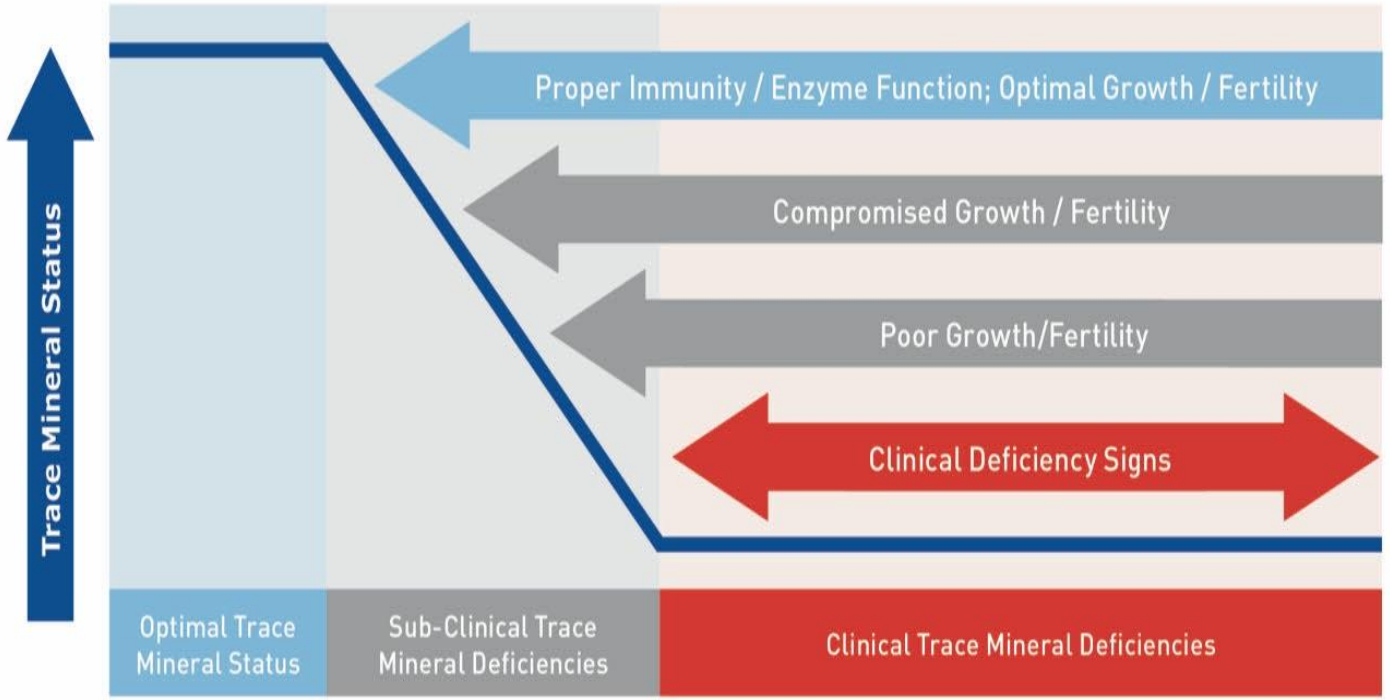


Nutrition To Support Immunity

- **Minimise body condition loss**
- Correct body condition into dry period
- Ration content for energy, protein, minerals
- Palatability and preservation
- Availability
- Social Stress

The Role of Trace Minerals

- Antioxidants: key defence against oxidants
- Trace minerals: Zinc, Copper, Manganese and Selenium are vital parts of these antioxidants
- Insufficient mineral levels: health and performance can be impaired
- Requirement is higher in periods when oxidant levels are higher



Methods of Mineral Supplementation

Oral

- Added to rations, blends or cakes or onto forage
- Boluses
- In water
- Licks and blocks

Provide a base level of supply **BUT are subject to:**

- Reduced appetite = poor intake
- Antagonism in the rumen
- Poor absorption = poor availability

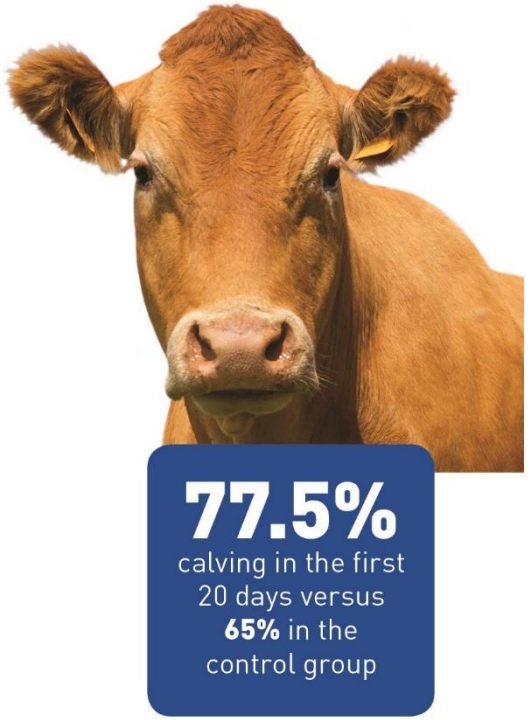
Argument for strategic supplementation at times of high demand – oxidative stress

MINERAL	ABSORPTION
30 Zn	10 - 20%
29 Cu	1 - 5%
25 Mn	0.15 - 1.2%
34 Se	34%

Methods of Mineral Supplementation

Injection

- Alternative injectable combined mineral option now available
- No interactions / absorption effects in the rumen
- Highly bioavailable so animals can use rapidly
- Shown to improve cow and calf health outcomes in dairy herds
- Improved fertility in sucklers



Summary

- Oxidative stress is a significant factor in diseases around calving
- Ensuring adequate energy intake is most important
- Trace minerals are a critical part of the antioxidants needed to combat oxidative stress
- Supply dietary minerals to NRC recommended levels
- Evidence of health and performance benefits from strategically boosting trace minerals around periods of high demand
- For further information on cattle health and diseases please go to the NADIS website or speak to your vet.