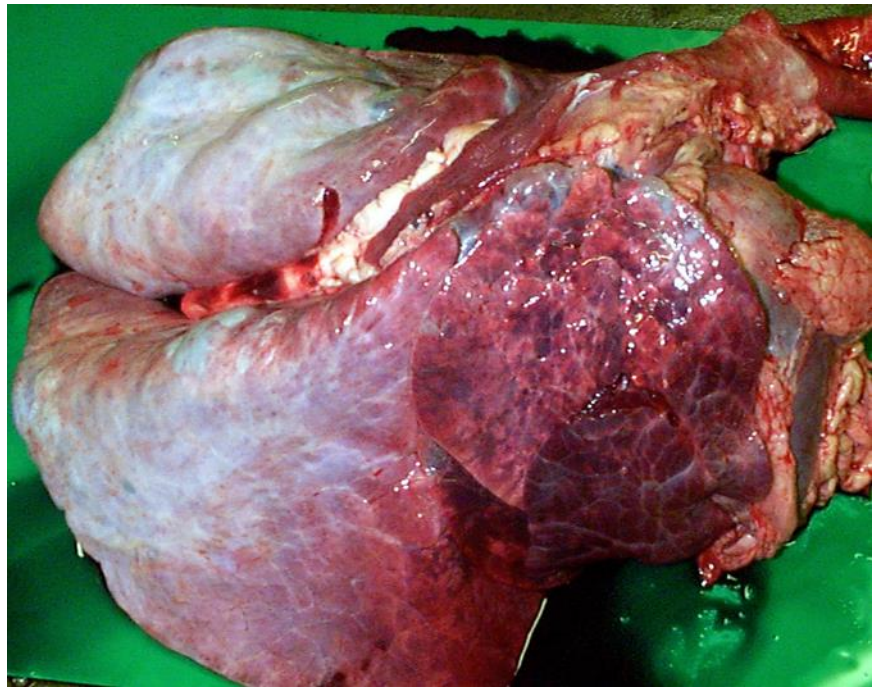
Maximising The Benefit of Vaccination

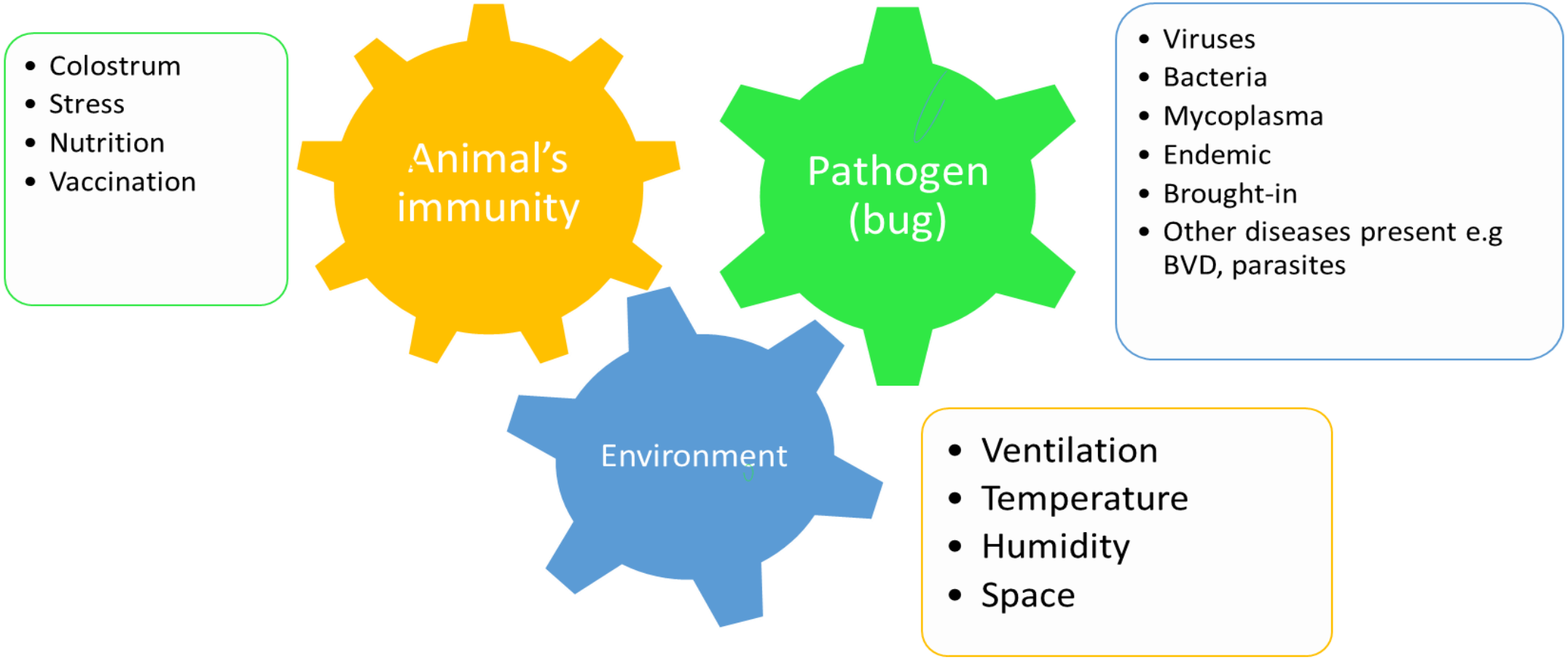
How trace minerals support the immune response to bovine respiratory disease vaccination

The impact of respiratory disease on cattle farming
The role of vaccination in BRD prevention
How respiratory vaccines work
What is the role of trace minerals in the immune response?
How can trace minerals be effectively supplied to meet peaks in demand?



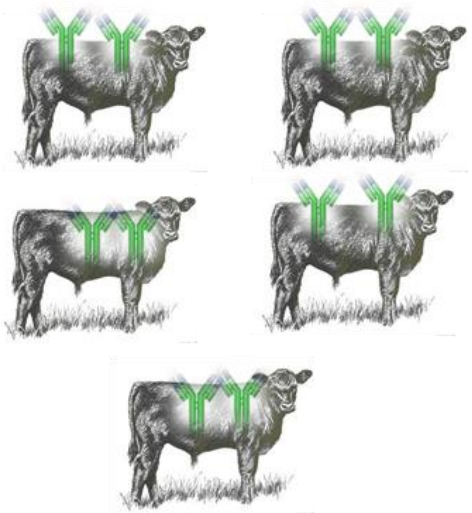
The Impact Of Bovine Respiratory Disease

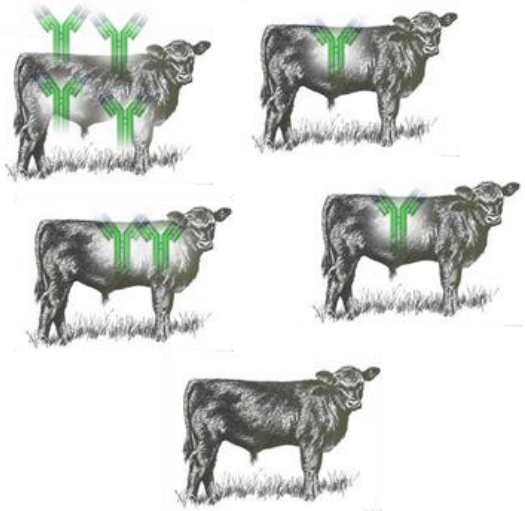
- Most common cause of death and illness from weaning to 10 months
- Costs the UK beef industry approx. £50 million per year
- If 3 in 10 in a group shows signs, 7 in 10 will have lower performance
- Poor growth, delayed finishing and poorer carcases biggest impact in clinical cases and unseen cases


Colostrum
Stress
Nutrition
Vaccination
Animal's immunity
Pathogen (bug)
Viruses
Bacteria
Mycoplasma
Endemic
Brought-in
Other diseases present e.g BVD, parasites
Environment
Ventilation
Temperature
Humidity
Space

How Do Vaccines Work?

- Vaccines are not a shield against disease
- Vaccines provide the template for the body to create the shield
- This creates a demand on the immune system
- Animals need to be healthy and not under stress
- The immune system needs time to respond





The Role of Trace Minerals In Immune Response

- Trace minerals are essential to the immune response to vaccination
- Zinc, copper and selenium all have essential roles in immunity
- Animals receiving adequate minerals may not have enough for peaks in demand
- Animals with insufficient trace minerals may fail to respond to vaccination, may not respond as well or may take longer to respond

Strategic Mineral Supplementation

- Minerals should be supplied to adequate levels through the diet or water
- A new prescription injectable trace mineral is designed to supply selenium, copper, manganese and zinc to correct deficiencies which can arise during critical phases of the production cycle

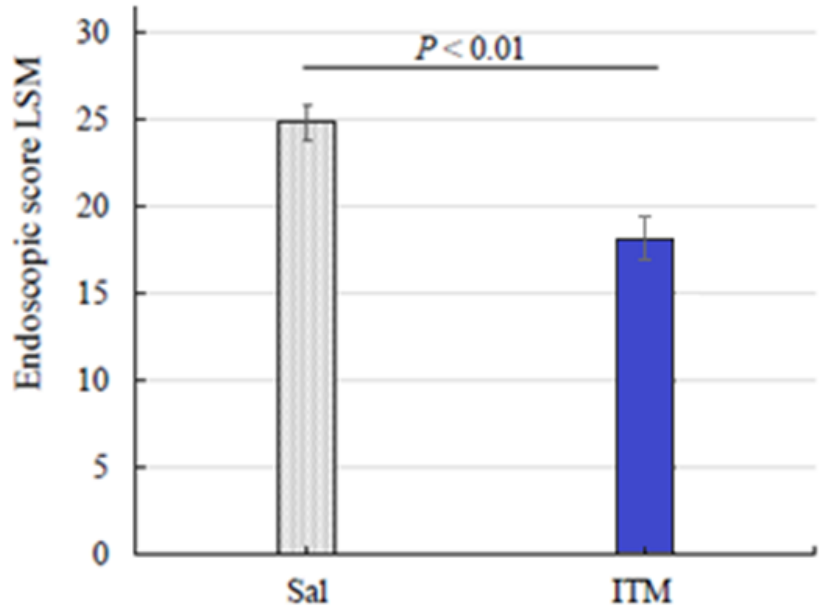
Strategic Mineral Supplementation

Use of MULTIMIN™ at the same time as vaccination has been shown to give:

Faster immune response to vaccination

Greater antibody levels

Reduced disease



Hoyos-Jaramillo A. et al. (2019) Health status and endoscopic evaluation of upper respiratory tract of dairy bull calves inoculated with BVDV2 and BHV1 after vaccination and trace minerals injection. Poster presented at Bovine Respiratory disease symposium, Denver USA, August 2019.

Enhancing Response to Vaccination

- The research suggests that providing injectable minerals at the time may improve an animal's ability to respond to respiratory vaccines
- Ensuring adequate colostrum intake, minimal stress and correct nutrition are the foundations to effective vaccination
- Injectable minerals may speed up and enhance the production of antibodies to respiratory disease, particularly if concurrent stresses like housing are adding to the demand

Summary

- Bovine Respiratory Disease is a significant cause of disease and production loss in cattle farming
- Improving immunity through vaccination is a key part of BRD prevention
- Vaccines must generate an immune response to be effective
- Trace minerals have important roles in immune function and are required at higher levels at times of peak demand
- Targeted supplementation of minerals has shown improved responses to BRD vaccination