

# What you need to know about prebiotics.

Prebiotics are non-viable food components that benefit the animal when consumed. Common prebiotics used in ruminant diets include yeast extract (yeast cell wall) and yeast culture.

## How does yeast cell wall work?

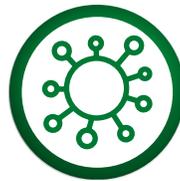
Yeast cell walls are made up of a few key components including mannan oligosaccharides (MOS) and beta-glucans. MOS are important for binding pathogens while beta-glucans are primarily involved in modulating the immune system. Yeast cell walls also benefit the animal through secondary mechanisms such as binding mycotoxins, shifting the microbiome, and supporting gut function.



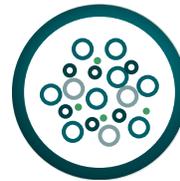
**Bind  
Pathogens**



**Modulate  
Immune system**



**Bind  
Mycotoxins**



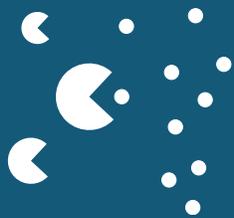
**Shift  
Microbiome**



**Support  
Gut Function**

## How does yeast culture work?

Yeast culture consists of yeast cells and the medium on which they are grown. When consumed by the animal, yeast culture acts as a source of growth factors for rumen microbes.



Yeast culture acts as a source of food/ fertilizer for rumen microbes



This increases total microbial populations, lactic acid utilizers, and fiber digestors



And leads to improved rumen pH, VFA production, microbial protein, and fiber digestion

## When should prebiotics be used?



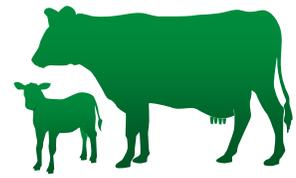
### Pathogen control

Yeast cell wall helps control pathogens like *E. Coli* and *Salmonella* in the gut that can induce diarrhea.



### Periods of stress

Yeast cell wall and yeast culture boost the immune system and help increase dry matter intake during stress.



### General health

Yeast cell wall and yeast culture support rumen health, immune function, and digestion for better performance.

## What are typical responses?



### Calves

- Improved growth
- Reduction in duration and severity of scours
- Early establishment of rumen microbiome and development of rumen papillae



### Dairy cattle

- Improved antibody transfer to calves
- Improved milk and component yield
- Increased dry matter intake in early lactation



### Beef cattle

- Reduced incidence and severity of disease especially on feedlot arrival
- Improved growth and average daily gain
- Increased dry matter intake