biostart™

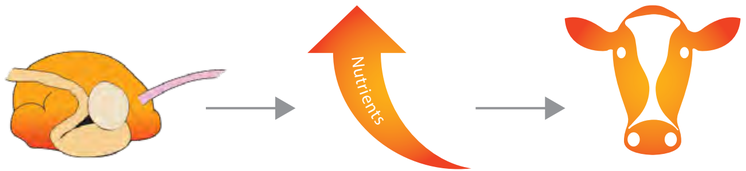
BioStart Ruminant™ Sheep & Beef Cattle Programme

Ruminant™ helps optimise rumen function to improve feed utilisation & nutrient conversion

Made in New Zealand

Available from leading rural retailers and vets Call NZ **0800 116 229** to order **www.biostart.co.nz**

How Ruminant™ works



Ruminant™ helps stimulate microbial activity in the rumen

Improve feed utilisation & nutrient conversion

Healthier animals & improved animal production

Maintain the right balance of rumen microbes during periods of stress

A healthy rumen is home to billions of micro-organisms, including a wide range of bacteria, protozoa and fungi, which all have a role to play. Stock rely on rumen microbes to efficiently convert pasture and other fibrous feeds into nutrients for animal milk and meat production.

Reduce the effect of stress

Like humans the effects of stress can lead to adverse metabolic changes in stock effecting their health, appetite, immune system and productivity.

The populations of microbes in the rumen are greatly affected by the type and quality of feed an animal is eating, the stress that the animal is under and the use of antibiotics and de-wormers. If the populations of microbes are out of balance then the animal's rumen function will be suboptimal and digestive efficiency will decline.

Ruminant™ aids in maintaining efficient rumen function through periods of stress such as weaning, transport and feed change by improving feed utilisation and nutrient conversion, animal health and production.

Laboratory test shows Ruminant™ boosts beneficial rumen bacteria

Laboratory tests show **Ruminant**™ boosts the growth of three strains of beneficial bacteria by >25% including *Lactobacillus* bacteria, which live throughout the digestive tract.

Ruminant™ Ingredients

Ruminant™ is made from the fermentation of specially-selected beneficial bacteria *(Lactobacillus acidophilus, Bifidobacterium animalis, Streptococcus thermophilus, Lactobacillus casei, Enterococcus faecium, and Propionibacterium freudenreichii)* prebiotics, vitamins, minerals and trace elements to stimulate microbial activity in the rumen.

Benefits of Ruminant™

- Helps optimise rumen function
- Helps increase rumen fermentation and efficiency
- Reduces "digestive stress" from feed change and heavy grain feeding, climatic stress, mating and transport
- Improves animal production
- Improves animal well-being
- **Ruminant**™ is non-viable (not live); it's efficacy is not effected by heat, air or digestive acids
- Nil withholding period

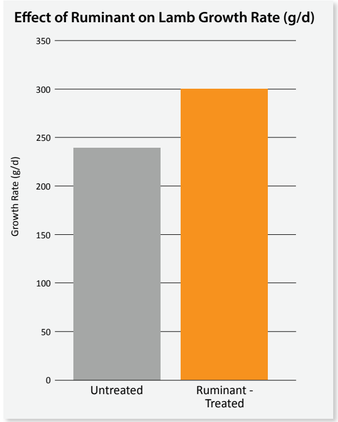
biostart™

Ruminant Sheep Programme

"I've been using Ruminant for 16 years in every drench. I fatten 10,000 lambs annually and have found the limiting factor in lamb fattening is stress, so I use BioStart Ruminant to help manage this. I have also noticed that my lambs have a lot less dags." **Stuart Roke, Hill Country Sheep and Beef Farmer with 8500 ewes, 10,000 lambs and 700 cattle, Raetihi**

Ruminant™ Sheep Trials

Pasture fed lamb weight gain trial 2001/02
Lamb Fattening Property, Manawatu-Wanganui region, NZ



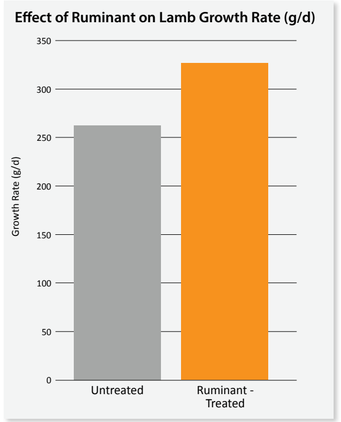
The Ruminant-treated mob (200) received 2 mL of BioStart **Ruminant**™ . After 25 days of pasture feed they had an increase over the untreated mob (100) of;

- An average liveweight gain of 1.5 kg or 4 % increase.
- An increased liveweight gain per day by 25 % (60 g/d; from 240 to 300 g/d).

Lambs were drafted with 45 % of each mob selected for the abattoir.
The Biostart-treated mob had an increase of;

- A 1 kg or 4 % increase in liveweight.
- An increased carcass weight of 450 g (assuming 45 % dress out rate) which would lead to another $2.25/hd (assuming a lamb schedule of 500 c/kg).

Turnip fed lamb weight gain trial 2001/02
Lamb Fattening Property, Manawatu-Wanganui region, NZ



The Ruminant-treated mob (150) received 2 mL of Biostart **Ruminant**™. After 22 days of being fed Pasja leafy turnips the treated lambs had the following gain versus the untreated lambs (160);

- **Ruminant**™ increased liveweight gain per day by 23 % (60 g/d; from 265 to 325 g/d)

Note. In both trials all lambs received a 7 mL dose of Cydectin Tape. Full trial report available upon request.

biostart™

Ruminant Sheep Programme

Lambs

At docking Tailing stress effects young lambs still establishing the microbiology of their intestines and rumen. Ruminant reduces the impact on rumen microbes from tailing stress.

At weaning Lambs experience separation stress and environmental stress caused by the move from standard stocking to rotational grazing. Lambs are also drenched at weaning which adversely effects the rumen's microbial populations and therefore rumen fermentation. Ruminant helps reduce the rumen microbe stress caused by these events and helps restore rumen microbial populations.

For lamb finishing When introducing lambs to a supplementary crop the make-up of the rumen microbe populations are required to change rapidly so stock can digest this new feed and maintain feed utilisation and animal performance. Dose with **Ruminant**™ to help boost rumen microbial growth and thereby allow the rumen microbial populations to adapt rapidly.

Hoggets

At drenching Worming and vaccination is important to maintain ewe hogget animal health however it also effects the rumen microbial balance. Ruminant helps boost rumen microbial growth at drenching and aids feed utilization to help achieve target weights.

Ewes

Prior to mating Raising nutrition increases the Ewe ovulation rate. Dose with **Ruminant**™ to improve nutrient utilisation.

Prior to lambing Reduce Ewe stress relating to pregnancy which is compounded by winter climatic conditions and winter supplementary feeding.

All stock

At feed change The rumen microbe populations are required to change rapidly so stock can digest a new feed/supplementary crop and maintain feed utilisation and animal performance. This process of changing the microbe populations can take between 4 – 9 days under normal conditions. Introduce the supplementary crop over a few days and dose with **Ruminant**™ to help boost rumen microbial growth and thereby allow the rumen microbial populations to adapt rapidly.

After animal health problems, antibiotic use and wormers Conditions like acidosis and grass staggers depress the stock's appetite and production. High acid levels in the rumen, and the use of antibiotics and de-wormers can also adversely affect the rumen microbial populations and therefore rumen fermentation. Follow your vet's treatment plan for the health problem and dose with **Ruminant**™ to help restore rumen microbial populations and digestive efficiency.

Prior to transportation e.g. to sale yards, for export Transportation is extremely stressful for animals. Prior to transport, moderately restrict feed intake, feed hay or silage as the low water content will help reduce the liquid content of effluent, and supplement with magnesium (with vet's advice). Dose with **Ruminant**™ prior to transport to reduce transport stress and help with feed change pre and post transport.

Pre or post cold or hot weather events When sheep suffer from heat or cold stress more energy is partitioned towards maintaining body temperature and there is less energy for meat and wool production. Under heat stress the sheep's rate of gut and rumen motility, appetite and feed intake is reduced. Ensure plenty of water and shade is available and dose with **Ruminant**™ to improve digestive efficiency. Under cold stress stock increase dry matter intake and rumination. Provide sufficient feed and dose with **Ruminant**™ to help stimulate rumen function and digestive efficiency.

Ruminant Sheep Programme to maintain a healthy rumen (mL per head)

Directions for Use:	Lambs	Hoggets	Ewes	Rams	Merinos
Dose **Ruminant**™ through the trough dispenser, co-administer with oral supplements via drenching, or dilute and spray over supplementary feed at the equivalent recommended rate.	**2 mL** • At docking • At weaning • For finishing	**2 mL** • At first drenching	**2 mL** • Prior to mating • Prior to lambing	**4 mL** • Pre-tup • Post-tup	**4 mL** • At docking • At weaning
	Follow up with a dose prior to feed change, at transport, during climatic events or if there are animal health issues.				

Always use in conjunction with good animal management practices. Pack Sizes Available: 2, 5, 10, 20 L

biostart

Ruminant Beef Programme

Calves

At weaning Calves experience separation stress and environmental stress caused by the move from set stocking to strip grazing field crops. Calves are also drenched at weaning which adversely effects the rumen's microbial populations and therefore rumen fermentation. Ruminant helps reduce the rumen microbe stress caused by these events and helps restore rumen microbial populations.

Yearlings

For fattening When introducing yearlings to a supplementary crop the make-up of the rumen microbe populations are required to change rapidly so stock can digest this new feed. Dose with **Ruminant**™ to help boost rumen microbial growth and thereby allow the rum en microbial populations to adapt rapidly and maintain feed utilisation to achieve weight targets.

All stock

At feed change The rumen microbe populations are required to change rapidly so stock can digest a new feed/supplementary crop and maintain feed utilisation and animal performance. This process of changing the microbe populations can take between 4 – 9 days under normal conditions. Introduce the supplementary crop over a few days (seek advice by crop e.g. NZ Dairy recommend transitioning stock to fodder beet over 14-21 days) and dose with **Ruminant**™ to help boost rumen microbial growth and thereby allow the rumen microbial populations to adapt rapidly.

After animal health problems, antibiotic use and wormers Conditions like acidosis and grass staggers depress the stock's appetite and production. High acid levels in the rumen, and the use of antibiotics and de-wormers can also adversely affect the rumen microbial populations and therefore rumen fermentation. Follow your vet's treatment plan for the health problem and dose with **Ruminant**™ to help restore rumen microbial populations and digestive efficiency.

Prior to transportation e.g. to sale yards, for export Transportation is extremely stressful for animals. Prior to transport, moderately restrict feed intake, feed hay or silage as the low water content will help reduce the liquid content of effluent, and supplement with magnesium (with vet's advice). Dose with **Ruminant**™ prior to transport to reduce transport stress and help with feed change pre and post transport.

Pre or post cold or hot weather events When stock suffer from heat or cold stress more energy is partitioned towards maintaining body temperature and there is less energy for meat and wool production. Under heat stress the cattle's rate of gut and rumen motility, appetite and feed intake is reduced. Ensure plenty of water and shade is available and dose with **Ruminant**™ to improve digestive efficiency. Under cold stress stock increase dry matter intake and rumination. Provide sufficient feed and dose with **Ruminant**™ to help stimulate rumen function and digestive efficiency.

Ruminant Beef and Deer Programme to maintain a healthy rumen (mL per head)

Directions for Use:
Dose **Ruminant**™ through the trough dispenser, co-administer with oral supplements via drenching, or dilute and spray over supplementary feed at the equivalent recommended rate.

Calves at Weaning	Yearlings	Adult Cattle & Stud
5 mL • At weaning	**10 mL** • At drenching • Prior to feed change	**20 mL** • At drenching • Prior to feed change
Follow up with a dose prior to feed change, at transport, during climatic events or if there are animal health issues.		

Fawns	Yearlings	Adult Deer	Velveting	Stags
3 mL • Prior to feed change • Prior to weaning	**5 mL** • Prior to feed change • Prior to transport	**5 mL** • Prior to feed change • Prior to mating • Prior to transport	**5 mL** • At velveting	**10 mL** • Prior/post to mating • Prior/post to feed changes
Follow up with a dose prior to feed change, at transport, during climatic events or if there are animal health issues.				

Always use in conjunction with good animal management practices. Pack Sizes Available: 2, 5, 10, 20 L

biostart™

Kick-start your crop or pasture

BioStart N, N-Fixing Bacteria & Mycorrcin

Biostart N, contains *Azotobacter chroococcum*, a free-living nitrogen fixing bacteria which converts atmospheric nitrogen to plant-available ammonium nitrogen in the soil.

- Can be used to complement conventional nitrogen inputs
- Easy to use through standard spray equipment
- Co-apply with Mycorrcin to activate beneficial soil bacteria
- Mycorrcin increases root growth and remedies compacted or water-logged soils, to aid crop establishment, growth, and drought survival

Convert thatch into an asset

ThatchBusta™

BioStart ThatchBusta™ contains a blend of fermentation extracts and nutrients to activate beneficial microbes to convert thatch into humus and promote clover growth.

- Reduce Browntop thatch
- Improve soil aggregation and soil moisture holding capacity
- Promote clover germination and root penetration
- Improve pasture quality

Available from leading rural retailers and vets Call NZ **0800 116 229** to order **www.biostart.co.nz** **Made in New Zealand**