

**High Magnesium Mineral Supplements for Livestock
Grazing Lush Green Feed and Winter Cereals**

Mega

Min

Magnesium Supplements



Plus
Phosphorus,
Calcium & Trace
Minerals

USE FOR

- ▶ Stock grazing lush pastures, ryegrass, oats and winter cereals
- ▶ Livestock scouring on green feed
- ▶ High stress periods to assist meat quality
- ▶ Pre-calving, lambing and weaning
- ▶ Stock grazing grass tetany prone pastures
- ▶ Stock running on low calcium and magnesium soils

Helping Australia Grow

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MegaMin

Magnesium Supplements

High Magnesium Mineral
Supplement for Livestock Grazing
Lush Green Feed & Winter Cereals

With the combination of extra magnesium as well as key macro and trace minerals, MegaMin Extra Magnesium provides essential nutrients that can often be lacking in lush green pastures and forages.

Sweet for a reason

Achieving targeted intake of magnesium is critical to maximise daily weight gain. To enhance intake, MegaMin Extra Magnesium 'sweet' blends contain a range of attractants to overcome the unpalatable nature of magnesium.

MegaMin Extra Magnesium 'sweet' blends also include simple carbohydrates to assist livestock performance. Lush green forages are high in protein and simple carbohydrates can help to balance the energy-to-protein ratio, allowing cattle and sheep to utilise more forage protein instead of excreting it as urea.

Don't let the Magnesium tank run empty!



Why supplementing with Magnesium is important

- ▶ Due to high levels of water and low levels of effective fibre in lush, green pasture, it is common to see stock scouring. Because magnesium is absorbed in the rumen, this increases the risk for magnesium deficiency.
- ▶ In addition, high levels of protein, fatty acids and potassium, commonly found in lush green pasture, can inhibit the uptake of magnesium.
- ▶ Because magnesium reserves stored in the body are not rapidly available, animals are reliant on daily intake.
- ▶ Magnesium deficiency leads to inefficient use of pasture and can compromise productivity and stock health, potentially leading to grass tetany, pulpy kidneys, milk fever and calving problems.
- ▶ Magnesium is beneficial for pre-calving, lambing and lactating livestock.
- ▶ Magnesium can calm livestock and reduce weaning and transport stress.



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Grass Tetany in Cattle and Sheep

Caused by low magnesium levels in the blood, grass tetany or 'hypomagnesaemia' may occur throughout the year on both tropical and temperate pastures.

What is grass tetany?

Hypomagnesaemia, commonly known as 'grass tetany', is a nervous disorder that occurs when the magnesium concentration in the cerebrospinal fluid surrounding the brain and spinal cord falls below a critical level. This is preceded by a decrease of magnesium in the blood.

In severe cases, grass tetany can cause sudden death of sheep and cattle grazing lush green, low fibre forages, so prevention is important.

Signs and symptoms

Cattle with grass tetany may display the following signs:

- ▶ Suppressed appetite leading to reduced feed intake
- ▶ Restlessness
- ▶ Staggers
- ▶ Over-alertness or aggressiveness
- ▶ In severe cases, sudden death

Risk factors

- ▶ Stock grazing immature, green pasture and lush green cereal crops, often with a history of nitrogen and potassium application.
- ▶ Low magnesium diet or interference of magnesium absorption by excess potassium.
- ▶ Stress associated with wind and cold exposure, transport, mustering etc.
- ▶ High risk animals are often older, fat and losing condition.

Prevention pays dividends

Grass tetany can lead to sudden death without warning so prevention is preferable to treatment.

MegaMin Extra Magnesium Supplements assist to minimise the risks associated with magnesium deficiency.

The provision of magnesium as well as a balance of essential macro and trace minerals helps to offset the impact of high fatty acid concentrations and potassium found in lush green pastures and winter forages.

Grass Tetany prevention strategies

- ▶ Increase magnesium intake for stock with a daily supplement.
- ▶ Initially, stock should be given limited access to high risk pasture and monitor closely during and immediately after grazing.
- ▶ Provide access to roughage during high risk periods. Mature fodder has a higher magnesium level in the stem and reduces the passage rate of digestion which can help to minimise scouring.
- ▶ Avoid subjecting stock to unnecessary stress. Where possible, avoid grazing pregnant, lactating, or other high risk animals on lush green pasture.
- ▶ Because older cows are higher risk, lower the herd age structure where possible.
- ▶ Spring calving cows are less susceptible to grass tetany than autumn/winter calving cows.

How to maximise weight gain for livestock grazing lush green pastures

An abundance of lush green fodder can have it's challenges because cattle and sheep can chase this green feed and yet lose condition.

High moisture and low fibre in the green shoot means that stock can't consume enough feed to meet their daily dry matter requirement. Also, lush green fodder passes too quickly through the rumen causing scours, reducing the absorption of magnesium.

Lush green fodder is high in sugars which has the potential to cause an 'acidosis' type scenario resulting in a decrease in rumen pH, similar to when ruminants consume grain without adequate fibre. This can result in scouring and loss of appetite.

To maximise the benefits of green fodder, it is important to provide a source of fibre such as standing dry feed, whole cottonseed, dry hay or straw.

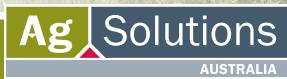
The manure will always tell you if there is enough fibre in the diet.

Phosphorus and magnesium are often limiting nutrients for stock grazing lush green pastures so providing a broad spectrum mineral supplement that includes phosphorus, magnesium and trace elements can assist to ensure that your stock achieve maximum weight gains.

For cattle and sheep grazing lush green pastures, provide:



+ Roughage



Grazing management tips

- ▶ Never move hungry stock directly on to lush green fodder. It takes time for rumen microbes to adapt to any changes in the diet so, if possible, gradually introduce stock by increasing length of grazing time each day.
- ▶ Because stock may not go looking for supplements when there is green feed, position the supplement near water.
- ▶ Achieving targeted intake of magnesium is critical to maximize daily weight gain. Magnesium is very bitter, so monitor intake and change to MegaMin Magnesium 'sweet' or 'super sweet' if required.
- ▶ If supplement intake is higher than recommended, stock may be craving salt or minerals. To satisfy salt cravings provide extra salt or pre-feed salt separately. If craving minerals, intake requirements will usually abate within 2 or 3 weeks of introducing MegaMin.
- ▶ To slow the speed of forage through the rumen, provide stock with access to dry grass, hay or straw.
- ▶ Ensure stock are vaccinated for clostridial diseases, such as pulpy kidney.



Actions steps to maximise weight gain!

Step One

Introduce MegaMin Extra Magnesium at least one week prior to grazing lush green pasture to ensure that supplement intake is sufficient. If Grass Tetany is a high risk factor, introduce MegaMin 2 to 3 weeks prior to grazing.

Step Two

Monitor intake. Magnesium is unpalatable so if intake is less than recommended, switch to MegaMin Magnesium SWEET or SUPER SWEET blends.

Step Three

Provide access to either straw or dry frosted pasture to increase roughage and slow the speed at which lush green forage passes through the rumen.

Sweet for a reason

Achieving targeted intake of magnesium is critical to maximize daily weight gain.

MegaMin Magnesium products are available in 'sweet' and 'super sweet' blends that contain a range of attractants to enhance palatability and intake.



Are your profits going out the back door?

It is quite common to see stock scouring when grazing lush green pasture. This feed contains high levels of water and low levels of effective fibre, causing rapid digestion and scouring. Because magnesium is absorbed in the rumen, this rapid passage can quickly lead to increased risk of magnesium deficiency.

Magnesium deficiency leads to inefficient use of pasture and has the potential to compromise stock health and productivity.

Monitor Manure

Monitoring the manure can give you a good indication of nutritional requirements. Because clinical or sub-clinical mineral deficiencies can restrict animal performance during periods of lush pasture growth, mineral supplementation can assist to maximise daily weight gains.



Ideal Manure

Correct any limiting nutrients by providing broad spectrum minerals.



Loose Manure

Provide magnesium and broad spectrum minerals plus access to roughage.

Mineral Input Mega Returns

A field trial conducted by AgSolutions in conjunction with Millmerran beef producer, Matthew Clark, was undertaken to identify the production benefits of MegaMin BovaMag Super Sweet for backgrounding Angus Cross steers grazing forage oats over a four-month period.

Throughout the course of the trial, the average intake of MegaMin BovaMag Super Sweet was 100g per head/day at a cost of 15c per head per day.

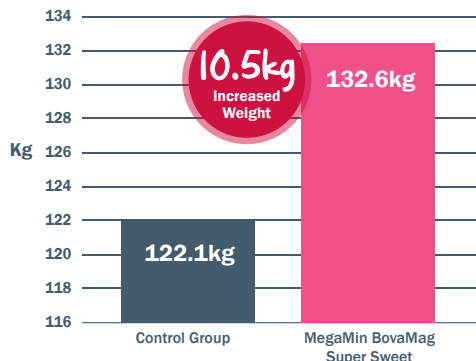
After 112 days, the total weight gain among supplemented cattle was 9% higher than the un-supplemented control group.

In addition, 67% of supplemented cattle reached the targeted 420kg sale weight compared to only 51% of the control group.

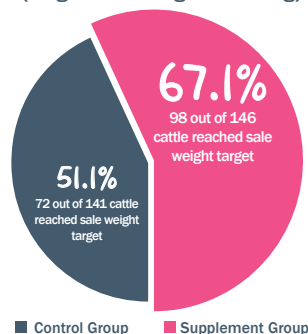
At the end of the trial, with live weight sale prices averaging \$5.70/kg, the investment of \$16.12/head for MegaMin BovaMag resulted in additional income of \$43.70/head.



Average Weight Gain/Head over 112 Days



Percentage Of Cattle Ready For Sale (Target Sale Weight of 420kg)



Profit Assessment Of Cattle Ready For Market

Trial Group	Avg. Daily Weight Gain (kg/hd)	Avg. Daily Intake Per Head	Investment Per Head Over Trial	Avg. Weight Gained (kg/hd) Over Trial	No. Of Head @ Target Sale Weight (420kg)	Gross Return On Weight Gained Per Head	Return on Supplement Investment
Control	1.09	0g	\$0.00	122.13	51.1%	\$696.13	N/A
Supplemented	1.19	100g	\$16.12	132.62	67.1%	\$739.84	271%

Calculations are based on a live weight sale price of \$5.70/kg. Based on full pallet RRP of MegaMin BovaMag Super Sweet 20kg bags excluding GST and Freight. These figures are hypothetical estimates of potential gains that may be possible but are not guaranteed - individual results may vary.

More animals ready for sale - less days on feed.



Matthew Clark
Beef Producer, Millmerran QLD

Matthew and Kass Clark lease two thousand hectares of property at Karriba, south-west of Millmerran. Their operation is targeting backgrounding cattle for Mort & Co through summer and winter.

"In our paddock trial, cattle with access to MegaMin BovaMag Super Sweet looked healthier with improved coat condition and we saw them grazing the oats more than cattle in the control group.

Although cattle in both groups suffered from Bovine Respiratory Disease in the first two weeks, the increased feed efficiency enabled the supplemented cattle to gain an extra 100g per head/day."



- ✓ Contains high quality calcium and magnesium sources along with a balance of macro and trace minerals.
- ✓ Formulated to improve production, feed conversion efficiency and weight gain for livestock grazing lush green pastures, ryegrass, oats and winter cereals.
- ✓ Helps to minimise risks associated with magnesium deficiency, such as grass tetany and milk fever.
- ✓ Supplies higher levels of magnesium to aid stock scouring on green feed and assist meat quality during high-stress periods.
- ✓ Beneficial for pre-calving/lambing, weaning and lactating livestock.
- ✓ Suitable year-round supplement for livestock grazing low calcium and magnesium soils.



- ✓ Contains Bovatec® to promote beneficial bacteria for better feed-conversion efficiency.
- ✓ Contains Bovatec® to help control internal protozoa parasites that cause coccidiosis in cattle and sheep.

Maximise the potential of your livestock

MegaMin

Extra Magnesium

MegaMin Extra Magnesium provides natural, broad spectrum macro and trace minerals, plus additional magnesium to supply stock grazing forages and winter cereals with key nutrients that are often lacking in these green feeds. Supplementing livestock with magnesium can assist mineral uptake and help reduce risks associated with magnesium deficiency such as grass tetany or milk fever.

MegaMin Extra Magnesium SWEET and SUPER SWEET contain a range of attractants to overcome the unpalatable nature of magnesium and enhance intake.

- ▶ Ideal for stock grazing lush green pastures, ryegrass, oats, winter cereals, and magnesium/calcium deficient country.
- ▶ Can assist meat quality during high stress periods.
- ▶ Suitable for use during pre-calving, lambing and weaning.
- ▶ Assists magnesium uptake and benefits livestock scouring on green feed.
- ▶ Helps reduce risks associated with magnesium deficiency such as grass tetany and milk fever.

Feeding Guide

Recommended daily intake is 20-40g/100kg body weight/day.

FEED RATE
(g/day)

Cattle	100-200
Sheep/Goats	10-20
Horses	30-80

Important Notes for Feeding

Commence feeding at higher intake levels 2-3 weeks prior to periods of high risk for grass tetany. Use in conjunction with other grass tetany management strategies. Initial consumption rates may be higher due to salt or mineral cravings.

Supplementation rates will vary according to condition of livestock and state of pasture. Getting the right intake is crucial. For more information contact AgSolutions Australia.



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High Magnesium Mineral Supplement for Livestock

Grazing Lush Green Feed and Winter Cereals

TYPICAL ANALYSIS (DMB)	Extra Magnesium	Extra Magnesium - SWEET	Extra Magnesium - SUPER SWEET
Calcium (Ca)	8.0%	5.8%	5.5%
Phosphorus (P)	1.0%	1.0%	1.0%
Sulphur (S)	0.9%	0.9%	0.7%
Magnesium (Mg)	10.0%	9.7%	9.7%
Potassium (K)	0.8%	0.9%	0.9%
Silicon (Si)	14.3%	7.3%	6.6%
Iron (Fe)	4.6%	2.0%	1.8%
Manganese (Mn)	0.12%	0.08%	0.08%
Zinc (Zn)	215.0mg/kg	172.0mg/kg	173.0mg/kg
Copper (Cu)	105.0mg/kg	79.0mg/kg	76.0mg/kg
Cobalt (Co)	26.0mg/kg	14.5mg/kg	12.8mg/kg
Selenium (Se)	0.5mg/kg	0.5mg/kg	0.5mg/kg
Iodine (I)	1.0mg/kg	0.9mg/kg	0.8mg/kg
Molybdenum (Mo)	0.8mg/kg	1.7mg/kg	1.6mg/kg
Boron (B)	12.0mg/kg	6.6mg/kg	5.9mg/kg
Chromium (Cr)	214.6mg/kg	110.1mg/kg	97.0mg/kg
Salt (NaCl)	2.1 %	2.0%	1.8%
Protein Meal	20.0%	34.7%	33.5%
Crude Protein	4.2%	7.6%	7.3%
Crude Fibre	2.4%	4.1%	4.0%
Simple Carbohydrate	N/A	9.8%	14.8%
Dry Matter (DM)	97.4%	96.4%	96.6%

Available in 20kg Bags and 1t Bulk Bags.

MegaMin

BovaMag



MegaMin BovaMag is a medicated supplement that provides higher levels of magnesium with broad spectrum macro and trace minerals essential for sheep and cattle grazing lush green pastures, fodders, forages and winter cereals.

Supplementing with magnesium prior to and when grazing these feeds can assist mineral uptake and reduce risks associated with magnesium deficiency, such as grass tetany and milk fever. The inclusion of Bovatec® offers additional benefits of improved liveweight gains and feed conversion efficiency, making MegaMin BovaMag the ideal choice for supporting livestock health and productivity.

MegaMin BovaMag SWEET and SUPER SWEET contain a range of attractants to overcome the unpalatable nature of magnesium and enhance intake.

- ▶ Ideal for stock grazing lush green pastures, ryegrass, oats, winter cereals, and magnesium/calcium deficient country.
- ▶ Can assist meat quality during high stress periods.
- ▶ Suitable for use during pre-calving, lambing and weaning.
- ▶ Assists magnesium uptake and benefits livestock scouring on green feed.
- ▶ Helps reduce risks associated with magnesium deficiency such as grass tetany and milk fever.
- ▶ Bovatec® promotes beneficial rumen bacteria for better rumen function, helping to improve feed conversion efficiency and daily weight gains.
- ▶ Bovatec® can increase dry matter intake, total rumination, and volatile fatty acid production.

Feeding Guide

Recommended daily intake is

FEED RATE
(g/day)

Cattle	100-150
Sheep	10-15

Important Notes for Feeding

Commence feeding at higher intake levels 2-3 weeks prior to periods of high risk for grass tetany. Use in conjunction with other grass tetany management strategies. Initial consumption rates may be higher due to salt or mineral cravings.

Supplementation rates will vary according to condition of livestock and state of pasture. Getting the right intake is crucial. For more information contact AgSolutions Australia.

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High Magnesium Medicated Mineral Supplement for Livestock Grazing Lush Green Feed and Winter Cereals

TYPICAL ANALYSIS (DMB)	BovaMag	BovaMag - SWEET	BovaMag - SUPER SWEET
Calcium (Ca)	8.1%	5.8%	5.3%
Phosphorus (P)	1.0%	1.0%	1.0%
Sulphur (S)	1.0%	1.0%	0.6%
Magnesium (Mg)	10.2%	10.0%	10.0%
Potassium (K)	0.8%	0.9%	0.9%
Silicon (Si)	12.7%	6.8%	6.3%
Iron (Fe)	3.7%	1.9%	1.7%
Manganese (Mn)	0.10%	0.08%	0.08%
Zinc (Zn)	207.3mg/kg	169.7mg/kg	171.9mg/kg
Copper (Cu)	106.8mg/kg	76.4mg/kg	74.4mg/kg
Cobalt (Co)	27.2mg/kg	13.4mg/kg	12.2mg/kg
Selenium (Se)	0.8mg/kg	0.5mg/kg	0.5mg/kg
Iodine (I)	0.9mg/kg	0.9mg/kg	0.8mg/kg
Molybdenum (Mo)	2.5mg/kg	1.6mg/kg	1.5mg/kg
Boron (B)	11.8mg/kg	6.2mg/kg	5.7mg/kg
Chromium (Cr)	208.5mg/kg	100.7mg/kg	92.2mg/kg
Lasalocid Sodium (as Bovatec®)	2004.9mg/kg	2004.6mg/kg	2002.9mg/kg
Salt (NaCl)	2.0%	2.0%	1.8%
Protein Meal	19.7%	34.7%	33.5%
Crude Protein	4.3%	7.6%	7.3%
Crude Fibre	2.4%	4.1%	4.0%
Simple Carbohydrate	N/A	9.9%	14.8%
Dry Matter (DM)	96.3%	96.4%	96.6%

Available in 20kg Bags and 1t Bulk Bags.

MegaMin USDA/NOP Extra Magnesium provides broad spectrum macro and trace minerals, plus additional magnesium to supply stock grazing forages and winter cereals with key nutrients that are often lacking in these green feeds. Supplementing livestock with magnesium can assist mineral uptake and help reduce risks associated with magnesium deficiency such as grass tetany or milk fever.

MegaMin USDA/NOP Extra Mag SWEET contains a range of attractants to overcome the unpalatable nature of magnesium and enhance intake.

- ▶ Compliant with United States Department of Agriculture (USDA) National Organic Program (NOP) and Australian Organic Standards.
- ▶ Ideal for stock grazing lush green pastures, ryegrass, oats, winter cereals, and magnesium/calcium-deficient country.
- ▶ Can assist meat quality during high stress periods.
- ▶ Suitable for use during pre-calving, lambing and weaning.
- ▶ Assists magnesium uptake and benefits livestock scouring on green feed.
- ▶ Helps reduce risks associated with magnesium deficiency such as grass tetany and milk fever.

Feeding Guide

Recommended daily intake is 20-40g/100kg body weight/day.

	FEED RATE (g/day)
Cattle	40-100
Sheep/Goats	5-10
Horses	30-80

Commence feeding at higher intake levels 2-3 weeks prior to periods of high risk for grass tetany. Use in conjunction with other grass tetany management strategies. Initial consumption rates may be higher due to salt or mineral cravings. For more information contact AgSolutions.

TYPICAL ANALYSIS (DMB)	USDA/NOP Extra Mag	USDA/NOP Extra Mag SWEET
Calcium (Ca)	8.0%	6.2%
Phosphorus (P)	1.0%	1.0%
Sulphur (S)	1.0%	1.0%
Magnesium (Mg)	10.0%	10.1%
Potassium (K)	0.8%	0.8%
Silicon (Si)	13.3%	8.4%
Iron (Fe)	3.8%	2.2%
Manganese (Mn)	0.1%	0.1%
Zinc (Zn)	302.1mg/kg	267.9mg/kg
Copper (Cu)	81.5mg/kg	53.4mg/kg
Cobalt (Co)	28.2mg/kg	16.8mg/kg
Selenium (Se)	0.6mg/kg	0.4mg/kg
Iodine (I)	1.0mg/kg	0.9mg/kg
Molybdenum (Mo)	2.1mg/kg	1.4mg/kg
Boron (B)	11.7mg/kg	7.1mg/kg
Chromium (Cr)	214.3mg/kg	125.2mg/kg
Salt (NaCl)	2.0%	2.0%
Protein Meal	20.0%	30.0%
Crude Protein	9.1%	13.7%
Dry Matter	95.5%	95.2%

Available in 20kg Bags and 1t Bulk Bags.

MegaMin

Pre/Post Kidding

High Magnesium and Calcium
Mineral Supplement to Support
Herd Health, Fertility and
Productivity

MegaMin Pre/Post Kidding provides broad spectrum macro and trace minerals, plus additional magnesium and calcium to promote herd health, fertility and productivity. MegaMin Pre/Post Kidding is ideal for use during pre and post kidding, before joining, when weaning, or during other high stress periods.

MegaMin Pre/Post Kidding is also available with Rumensin™ to aid in the prevention of coccidiosis and promote production.

- ▶ Ideal for pre and post kidding, before joining or when weaning.
- ▶ Supplies vital macro and trace minerals to help meet requirements during high stress periods.
- ▶ May be fed with grain or pellets when additional energy is required.

Feeding Guide

Recommended daily intake is
20-30g/100kg body weight/day.

FEED RATE
(g/day)

Goats/Sheep	10-15
Cattle	100-150

Initial consumption rates may be higher due to salt or mineral cravings. For more information contact AgSolutions Australia.

Available in 20kg Bags and 1t Bulk Bags.

TYPICAL ANALYSIS (DMB)	Pre/Post Kidding	Pre/Post Kidding + Rumensin™
Calcium (Ca)	12.0%	12.0%
Phosphorus (P)	2.0%	2.0%
Sulphur (S)	3.0%	3.0%
Magnesium (Mg)	7.0%	7.0%
Potassium (K)	0.8%	0.8%
Silicon (Si)	5.5%	5.2%
Iron (Fe)	1.4%	1.3%
Manganese (Mn)	0.07%	0.06%
Zinc (Zn)	162.9mg/kg	156.7mg/kg
Copper (Cu)	66.9mg/kg	64.3mg/kg
Cobalt (Co)	10.1mg/kg	9.5mg/kg
Selenium (Se)	0.5mg/kg	0.4mg/kg
Iodine (I)	0.9mg/kg	0.9mg/kg
Molybdenum (Mo)	1.4mg/kg	1.4mg/kg
Boron (B)	4.8mg/kg	4.6mg/kg
Chromium (Cr)	75.3mg/kg	70.5mg/kg
Salt (NaCl)	2.0%	2.0%
Protein Meal	30.0%	30.0%
Crude Protein	6.5%	6.5%
Crude Fibre	3.6%	3.6%
Simple Carbohydrate	4.8%	4.9%
Dry Matter (DM)	96.5%	96.5%
Monensin (as Rumensin™)	N/A	816mg/kg



MegaMin

Pre/Post Lambing & Calving

High Magnesium and Calcium
Mineral Supplement to Support
Flock Health, Fertility and
Productivity

MegaMin Pre/Post Lambing provides broad spectrum macro and trace minerals, plus additional magnesium and calcium to promote flock health, fertility and productivity. MegaMin Pre/Post Lambing is ideal for use during pre and post lambing, before joining, when weaning, or during other high stress periods.

6%
SALT

MegaMin Pre/Post Lambing with 6% Salt is also available to accommodate varying conditions, water and soil types.

- ▶ Ideal for pre and post lambing, before joining or when weaning.
- ▶ Supplies vital macro and trace minerals to help meet requirements during high stress periods.
- ▶ May be fed with grain or pellets when additional energy is required.

Feeding Guide

Recommended daily intake is
20-30g/100kg body weight/day.

FEED RATE
(g/day)

Sheep/Goats	10-15
Cattle	100-150

Initial consumption rates may be higher due to salt or mineral cravings. For more information contact AgSolutions Australia.

TYPICAL ANALYSIS (DMB)	Pre/Post Lambing & Calving	Pre/Post Lambing & Calving 6% Salt
Calcium (Ca)	12.0%	11.6%
Phosphorus (P)	2.0%	2.0%
Sulphur (S)	3.0%	3.0%
Magnesium (Mg)	7.0%	7.0%
Potassium (K)	0.8%	0.7%
Silicon (Si)	5.5%	5.0%
Iron (Fe)	1.4%	1.3%
Manganese (Mn)	0.07%	0.06%
Zinc (Zn)	163.0mg/kg	160.6mg/kg
Copper (Cu)	67.0mg/kg	64.1mg/kg
Cobalt (Co)	10.1mg/kg	9.1mg/kg
Selenium (Se)	0.5mg/kg	0.4mg/kg
Iodine (I)	0.9mg/kg	2.8mg/kg
Molybdenum (Mo)	1.4mg/kg	1.3mg/kg
Boron (B)	4.8mg/kg	4.4mg/kg
Chromium (Cr)	75.3mg/kg	68.2mg/kg
Salt (NaCl)	2.0%	6.0%
Protein Meal	30.0%	28.6%
Crude Protein	6.5%	6.2%
Crude Fibre	3.6%	3.4%
Simple Carbohydrate	4.8%	4.8%
Dry Matter (DM)	96.5%	96.8%

Available in 20kg Bags and 1t Bulk Bags.

MegaMin

Pre/Post Lambing/Calving + Bovatec®

**Medicated Mineral Supplement
with Magnesium and Calcium to
Support Flock Health, Fertility
and Productivity**

MegaMin Pre/Post Lambing + Bovatec® is a balanced medicated supplement that provides broad spectrum macro and trace minerals with additional magnesium and calcium, plus the added benefits of Bovatec®. MegaMin Pre/Post Lambing + Bovatec® supports flock health, fertility and productivity and assists feed conversion efficiency and daily weight gains, making it the ideal choice for your flock.

**6%
SALT**

MegaMin Pre/Post Lambing 6% Salt + Bovatec® is also available to accommodate varying conditions, water and soil types.

- ▶ Ideal for pre and post lambing, before joining or when weaning.
- ▶ Supplies vital macro and trace minerals to help meet requirements during high stress periods.
- ▶ May be fed with grain or pellets when additional energy is required.
- ▶ Bovatec® promotes beneficial rumen bacteria for better rumen function, helping to improve feed conversion efficiency and daily weight gains.

Feeding Guide

Recommended daily intake is 10-20g/100kg body weight/day.

**FEED RATE
(g/day)**

Sheep	10-15
Cattle	100-150

Initial consumption rates may be higher due to salt or mineral cravings. For more information contact AgSolutions Australia.



TYPICAL ANALYSIS (DMB)	Pre/Post Lambing & Calving + Bovatec®	Pre/Post Lambing & Calving 6% Salt + Bovatec®
Calcium (Ca)	12.0%	11.5%
Phosphorus (P)	2.0%	2.0%
Sulphur (S)	3.0%	3.0%
Magnesium (Mg)	7.0%	7.0%
Potassium (K)	0.8%	0.7%
Silicon (Si)	5.2%	4.8%
Iron (Fe)	1.3%	1.2%
Manganese (Mn)	0.06%	0.06%
Zinc (Zn)	156.7mg/kg	159.5mg/kg
Copper (Cu)	64.3mg/kg	62.0mg/kg
Cobalt (Co)	9.5mg/kg	8.6mg/kg
Selenium (Se)	0.4mg/kg	0.4mg/kg
Iodine (I)	0.9mg/kg	2.8mg/kg
Molybdenum (Mo)	1.4mg/kg	1.3mg/kg
Boron (B)	4.6mg/kg	4.2mg/kg
Chromium (Cr)	70.5mg/kg	63.8mg/kg
Lasalocid Sodium (as Bovatec®)	2020.0mg/kg	2016.0mg/kg
Salt (NaCl)	2.0%	6.0%
Protein Meal	30.0%	28.6%
Crude Protein	6.5%	6.2%
Crude Fibre	3.6%	3.4%
Simple Carbohydrate	4.7%	4.8%
Dry Matter (DM)	96.5%	96.8%

Available in 20kg Bags and 1t Bulk Bags.



MegaMin

Lush Legume Lick

Medicated Mineral Supplement with Bovatec® to Aid Stock Grazing Lush, Legume Rich Pastures

MegaMin Lush Legume Lick is a medicated supplement that provides broad spectrum macro and trace minerals plus Bovatec® to assist mineral balance and support rumen microbial populations to promote production in cattle grazing rapidly growing legumes, lush green pastures, winter cereals, or forage crops.

Livestock grazing such plants in their vegetative growth stages can be prone to developing scours, bloat or grass tetany. These feeds vary in their nutrient levels; are highly digestible and low in dry matter, and tend to pass too quickly through the rumen. As a result, this can prevent adequate absorption and utilisation of important minerals, highlighting the need for supplementation.

- ▶ Ideal for cattle grazing lush, legume rich pasture, winter cereals, forage crops and herbs.
- ▶ Provides crucial minerals, including magnesium, phosphorus and calcium to help maximise production from legume based green feed and fodder.
- ▶ Contain simple carbohydrates to improve palatability and assist rumen microbial activity.
- ▶ Bovatec® promotes beneficial rumen bacteria for better rumen function, helping to improve feed conversion efficiency and daily weight gains.
- ▶ Bovatec® can aid in the reduction of bloat scores in cattle on pasture when consumed at recommended rates.

Feeding Guide

Recommended daily intake is 40-50g/100kg body weight/day.

FEED RATE
(g/day)

Cattle

200

If grazing lush green feed without legume then supplement with MegaMin Extra Magnesium or MegaMin BovaMag.

Important Notes for Feeding

Introduce cattle to lick 14 days prior to grazing legumes or lush green pasture. Livestock must have access to sufficient feed and clean drinking water.

Note: Initial consumption rates may vary depending on weather, pasture and livestock conditions, as well as salt or mineral cravings. Monitor consumption as achieving target intake is critical for the effectiveness of this product. If it is difficult to maintain consumption within the typical intake levels (e.g. Intake is consistently elevated), stop feeding and seek advice AgSolutions Australia can be contacted on 1800 81 57 57.

Do not feed with other ionophores e.g. monensin capsules, liquid or premix. If conditions are conducive to bloat, do not rely on this product alone for complete bloat control. Observe and monitor cattle closely and use other bloat treatments and practices when necessary. Contact your preferred veterinary for further assistance if required.

Ag Solutions

AUSTRALIA

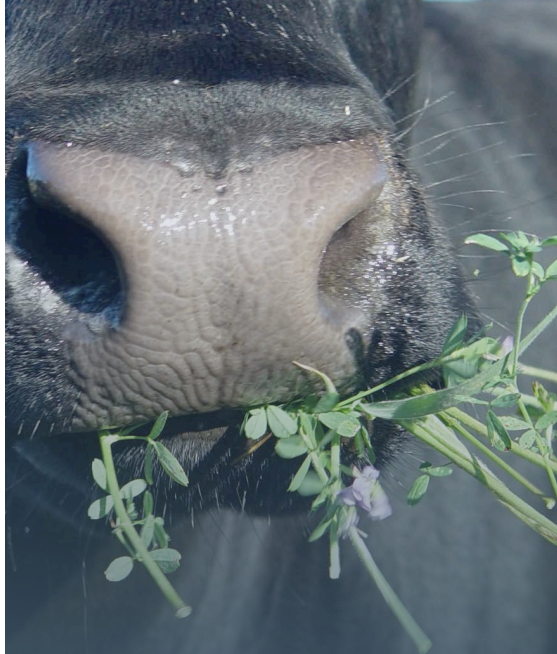


TYPICAL ANALYSIS (DMB)

Lush Legume Lick

Calcium (Ca)	8.0%
Phosphorus (P)	2.0%
Sulphur (S)	2.0%
Magnesium (Mg)	5.0%
Potassium (K)	1.2%
Silicon (Si)	10.5%
Iron (Fe)	2.6%
Manganese (Mn)	0.08%
Zinc (Zn)	173.4mg/kg
Copper (Cu)	74.3mg/kg
Cobalt (Co)	16.2mg/kg
Selenium (Se)	0.7mg/kg
Iodine (I)	0.9mg/kg
Molybdenum (Mo)	2.8mg/kg
Boron (B)	9.0mg/kg
Chromium (Cr)	115.1mg/kg
Lasalocid Sodium (Bovatec®)	2000.8mg/kg
Salt (NaCl)	2.0%
Protein Meal	25.0%
Crude Protein	5.5%
Crude Fibre	3.0%
Simple Carbohydrate	5.0%
Dry Matter (DM)	96.0%

Available in 20kg Bags and 1t Bulk Bags.



Do you have livestock grazing rapidly growing lush green pastures?

Rapidly growing legumes, lush green pasture and forage crops can have excessive amounts of some nutrients such as potassium and can be very limiting in others like magnesium.

Livestock that are grazing these plants in their vegetative growth stages can be prone to develop conditions such as scours, bloat and grass tetany.

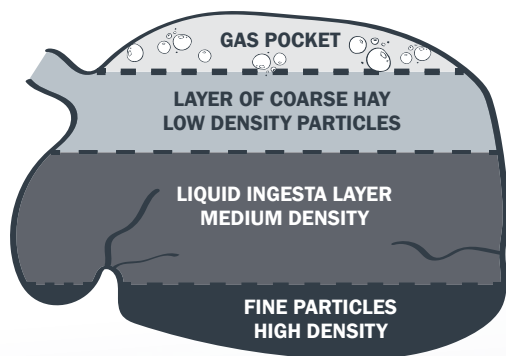
MegaMin Lush Legume Lick has been formulated to help balance minerals and support rumen microbial populations to help promote production in stock grazing lush green feed.

Maximise the potential of your livestock

Bloat in Cattle and Sheep

What is bloat?

According to the Merck Veterinary Manual (2005) the definition of Bloat is an over-distention of the rumen-reticulum with the gases of fermentation, either in the form of a persistent foam mixed with the ruminal contents, called primary or frothy bloat or in the form of free gas separated from the ingesta, called secondary or free-gas bloat.



Frothy bloat is highly seasonal (it usually occurs in Spring) and is caused by natural foaming agents in legumes and some rapidly growing grasses that trigger a stable foam to form in the rumen. Gas is trapped in small bubbles in this foam and the animal cannot belch up the gas, resulting in pressure building up in the rumen and causing an obvious swelling on the left side of the body.

Free-gas bloat is caused by a physical obstruction such as a foreign body (often potatoes or apples) becoming lodged in the gullet that prevents the belching of gas.

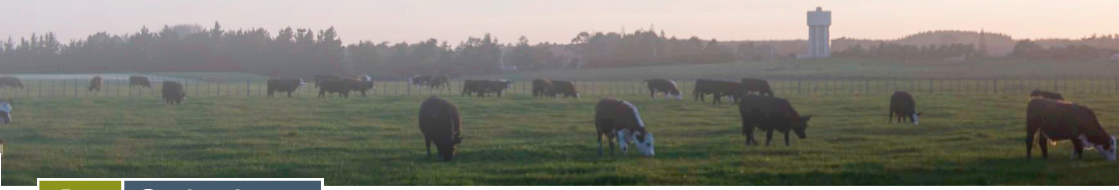
Conditions when bloat is likely to occur

Bloat is a risk when animals are grazing young, lush pasture, and particularly pasture that has a high legume content (clover, medics or Lucerne). Rapidly growing legumes, lush green pasture and forage crops can have excessive amounts of some nutrients such as potassium and can be very limiting in others like magnesium.

Preventing bloat is an important priority not only to reduce deaths but also to reduce the negative impact that sub-clinical bloat can have on livestock performance. Hungry animals should not be allowed to gorge on legume rich pasture. Feeding out grass hay or straw a few hours before introducing cattle to risky pastures can help reduce their appetite.

Initially, stock should be given limited access to high risk pasture and monitored closely both during and immediately after grazing.

As the legume pastures mature, the risk of bloat is reduced because as the plant matures to early bloom stage, the fibre content increases, and bloat risk reduces.



Signs, Symptoms and Prevention Strategies for Bloat in Cattle and Sheep

Signs and Symptoms

Cattle with bloat may display the following signs:

- ▶ A distended left abdomen
- ▶ No longer grazing
- ▶ A reluctance to move
- ▶ Appear distressed – pain, bellowing, bulging eyes, etc.
- ▶ Strain to urinate and defecate
- ▶ Rapid breathing – mouth could be open with the tongue hanging out
- ▶ Staggering.



Excessive amount of gas in the rumen causes noticeable distention

In advanced cases the animal will go down and death quickly follows due to the swollen rumen compressing the lungs, interfering with breathing and obstructing blood flow. Death is due to heart failure and asphyxia.

Prevention strategies

Preventing bloat is an important priority not only to reduce deaths but also to reduce the negative impact that sub-clinical bloat can have on livestock performance.

- ▶ To reduce appetite, feed grass hay or straw a few hours before introducing cattle to high risk pastures.
- ▶ Limit access to pasture and monitor closely both during and immediately after grazing.
- ▶ Introduce livestock to a risky pasture when the pasture sward is longer.
- ▶ Incorporate bloat resistant legumes, such as Lotus corniculatis, into pasture mixes.
- ▶ Spray pasture daily with pasture oil.
- ▶ Drench cattle twice daily with anti-bloat preparations or oil.
- ▶ Add bloat oil to livestock water supplies.
- ▶ Supplement with products containing ionophores, such as Lasoacid (Bovatec) or Monensin, along with other bloat preventative measures.
- ▶ Contact your veterinarian for advice if bloat is suspected.





Fast Facts

Farmers	Arnold & Aaron Ham
Industry	Beef
Region	Niangala, NSW
Results	<ul style="list-style-type: none">▶ Reduced stock deaths from grass tetany▶ Trace minerals for stock



Before MegaMin we lost up to 30 cows each year to Grass Tetany

The Ham family have always supplemented with magnesium due to the high risk of Grass Tetany in Niangala district, NSW. According to Arnold and Aaron Ham, "Since using MegaMin Extra Magnesium we haven't lost a cow in over three years."

"We found that we couldn't guarantee enough intake when we used other magnesium blocks so we fed molasses with magnesium but we used to lose up to 30 cows each year. In today's market that's a loss of over \$30,000 which makes MegaMin cheap in comparison."

We're very happy with the MegaMin product because it works. We tell people that you only have to save one cow to more than cover the cost of a pallet.

The other thing that appeals to us about MegaMin is that it also delivers important trace minerals for our stock."

As part of their annual program, MegaMin Extra Magnesium is supplemented continuously to all stock from the first frost in April or May through to September.

"The key is to start early. In our case Grass Tetany used to hit our fat cows first, particularly the 4-5 yr old cows."

Our high risk periods are when our grass is dormant and cattle are grazing Spring oats or during long wet periods. We've just come through 6 weeks of typical Grass Tetany peak conditions and have not lost an animal. With the price of cattle we couldn't be happier with the benefits of this product", concluded Arnold Ham.

"Since using MegaMin Extra Magnesium we haven't lost a cow in over three years."





Fast Facts

Farmer Tim Freeman
Industry Beef
Region Denman, NSW
Results

- ▶ Utilisation of green feed
- ▶ Reduction of scours in cattle



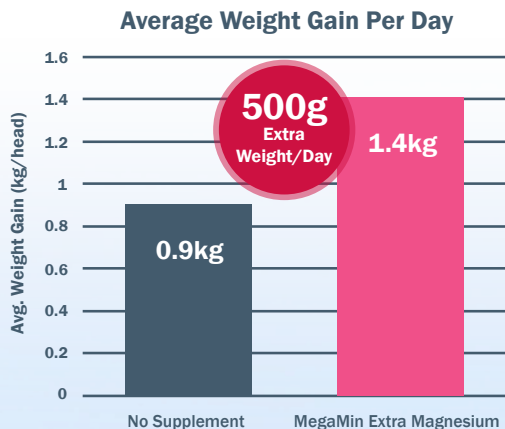
Increased Daily Weight Gain on Lush Green Feed

Tim Freeman manages a cattle fattening and hay making operation for Dalara Pastoral Operations.

Tim explains, “We found that when cattle were going onto new ryegrass and oats, the feed was just going straight through them and they weren’t utilising it.

The first big change that we noticed with the cattle grazing lush green feed turned around from putting on 0.9kg per day to gaining 1.4kg per day with the same feed.

The only change was the addition of MegaMin Extra Magnesium.”



Maximise the potential of your livestock

Dry matter requirements for stock grazing lush green pastures

Even though you may have knee high green grass, dry matter values in that pasture could be 20% or lower.

An average breeder needs to graze 1.8 to 2.2% of her body weight in dry matter each day. This means that her daily requirement would be 9-11kg of dry matter per day. When grazing predominately lush green pasture, this would equate to 45-55kg of pasture.

So, what are the signs? Very loose manure and cows that continue to graze most of the day, and still don't appear to have filled that triangle below their hip bone.

By 10am, cattle should generally be camped and ruminating, so take notice, are your cattle full and chewing their cud? If not, the provision of bales old dry hay at this time can provide great benefits for your stock.

Mineral requirements for stock grazing lush green pasture

When there is plenty of lush green fodder, cattle will likely either walk away from supplements or will be craving minerals.

While lush green feed generally supplies sufficient energy and protein to meet requirements, minerals and trace elements are often lacking and can result in clinical or sub-clinical mineral deficiencies that restrict animal performance during the good seasons or period of lush pasture growth.

Research has proven that supplementing during the good seasons can provide the opportunity to maximise daily weight gain.

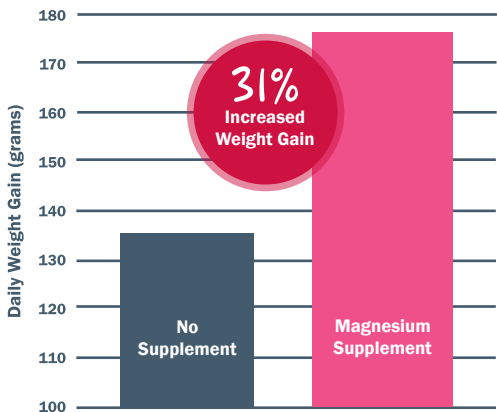
The value of broad spectrum minerals

The broad spectrum of minerals and trace elements are directly linked to metabolism and are essential for the utilization of energy and protein. To benefit from the full nutritional value of any one mineral, adequate quantities of all other minerals must also be available. For example, phosphorus absorptions is reduced if calcium, sulphur, manganese or copper is lacking.



Magnesium is a production mineral

Effect of mineral (Mg) supplementation on x-bred lambs grazing dual purpose wheats



(Adapted from Dove & McMullen 2009)

In addition to the importance of trace elements, trials have proven the value of magnesium as a production mineral to increase weight gain for cattle and sheep on lush green pastures and winter cereals. Trials highlighted 31% increased daily weight gain (lambs grazing winter wheat), which is a massive return on investment.

Lush green feed is often lacking in minerals so it is important to provide minerals and trace elements to insure against nutritional gaps that can restrict weight gain even during a good season.

FOR PRODUCTION + PROFIT THINK MAGNESIUM

Mega Min

Extra Magnesium Range

Mega Min

BovaMag Range

Mega Min

USDA / NOP Extra Mag Range

Mega Min

Lush Legume Lick

Mega Min

Pre/Post Lambing & Calving Range

Mega Min

Pre/Post Lambing & Calving + Bovatec®

Mega Min

Pre/Post Kidding Range



Maximise the potential of your livestock



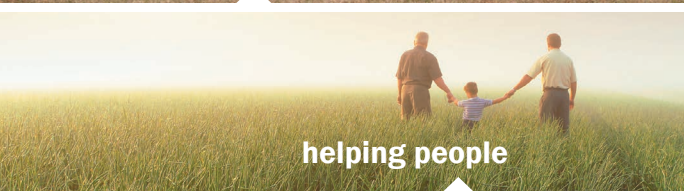
helping soil



helping plants



helping livestock



helping people

Helping Australia Grow

AgSolutions is a family owned Australian company founded in 1989. Our aim is to support you to improve soil fertility, to boost crop quality and production, and to maximise the performance of your livestock.

After decades of farming, humus levels and vital mineral elements have been depleted and leached from the soil, resulting in lower crop yields and mineral deficient pastures.

Because minerals are essential for the health and fertility of both soil and livestock, broad spectrum macro and trace minerals are the core ingredient in all of our soil and livestock products.

AgSolutions offers a Soil Test Program, allowing you to work with qualified Field Advisors to develop, implement and monitor a soil management program designed specifically for your property.

To ensure the best possible weight gains for your livestock, AgSolutions can assist you with a supplementation program and also provides a ration formulation service for feedlot rations and backgrounding stock.

Our team are committed to **'Helping Australia Grow'**.

Ag Solutions
AUSTRALIA

Helping Australia Grow

Mega Min
Livestock Supplements

Based on natural broad spectrum macro and trace minerals, the MegaMin Livestock Supplement range includes blends formulated to meet seasonal nutritional requirements for livestock, including grassfed, feedlot and grain assist rations.

Select MegaMin products are compliant with United States Department of Agriculture (USDA) National Organic Program (NOP) and domestic organic standards.

Mega Min
Equine Supplements

Formulated by a leading Australian Equine Nutritionist, MegaMin Equine Supplements provide broad spectrum mineral nutrition for all types of horses and ponies with access to diets consisting largely of pasture or hay.

Natra Min
Mineral Fertiliser & Soil Conditioners

NatraMin is formulated to provide bio-activated broad spectrum minerals and trace elements... assisting to restore the Nutritional, Biological and Structural aspects of soil fertility.

Ag Solutions
AUSTRALIA

FREE CALL 1800 81 57 57
agsolutions.com.au