

RESEARCH
PROVEN

Crystalx



**FEED LICKS
FOR DAIRY, BEEF
& SHEEP**



EXTRA HIGH ENERGY

FOR EWES, GROWING LAMBS,
RAMS AND GOATS ALL YEAR ROUND.

P14



CATTLE BOOSTER

FOR DAIRY CATTLE, BEEF CATTLE
AND GROWING GOATS ALL YEAR ROUND.

P18



PRE-CALVER

FOR DAIRY AND BEEF COWS.

P20



EASY BREATHER

NATURAL AID FOR MAINTAINING
A HEALTHY RESPIRATORY SYSTEM
IN CALVES, YOUNG CATTLE AND SHEEP.

P28



GARLYX

FOR ALL CLASSES OF LIVESTOCK.
CONTAINS AN INSECT REPELLENT.

P30



STANDARD

FOR MIXED GRAZING DAIRY,
BEEF AND SHEEP.

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CATTLE HIGH-MAG

FOR LACTATING DAIRY AND BEEF COWS.
HELPS MAINTAIN BLOOD MAGNESIUM
LEVELS AT GRASS.

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OPTIMUM

FOR LACTATING DAIRY COWS
AND GOATS.

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SHEEP BEET BALANCER

FOR SHEEP FED A HIGH
BRASSICA DIET.

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ORGANYX GARLIC

FOR ALL CLASSES OF ORGANIC LIVESTOCK.
CONTAINS AN INSECT REPELLENT.

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ORGANYX PLUS

FOR ALL CLASSES OF ORGANIC LIVESTOCK.

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BEET BALANCER

FOR CATTLE FED A HIGH
FODDER BEET DIET.

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Why Feed Crystalyx?

Crystalyx supplies a high energy form of supplementation to the main forage diets of dairy cattle, beef cattle, sheep, goats, and deer in a very palatable form.

With so many different feed blocks and mineral buckets on the market, it is often difficult to determine which product offers the best value in terms of product cost and livestock performance. At Crystalyx we are confident that our product range gives livestock the opportunity to perform at their very best and in turn offer significant financial rewards to livestock farmers.

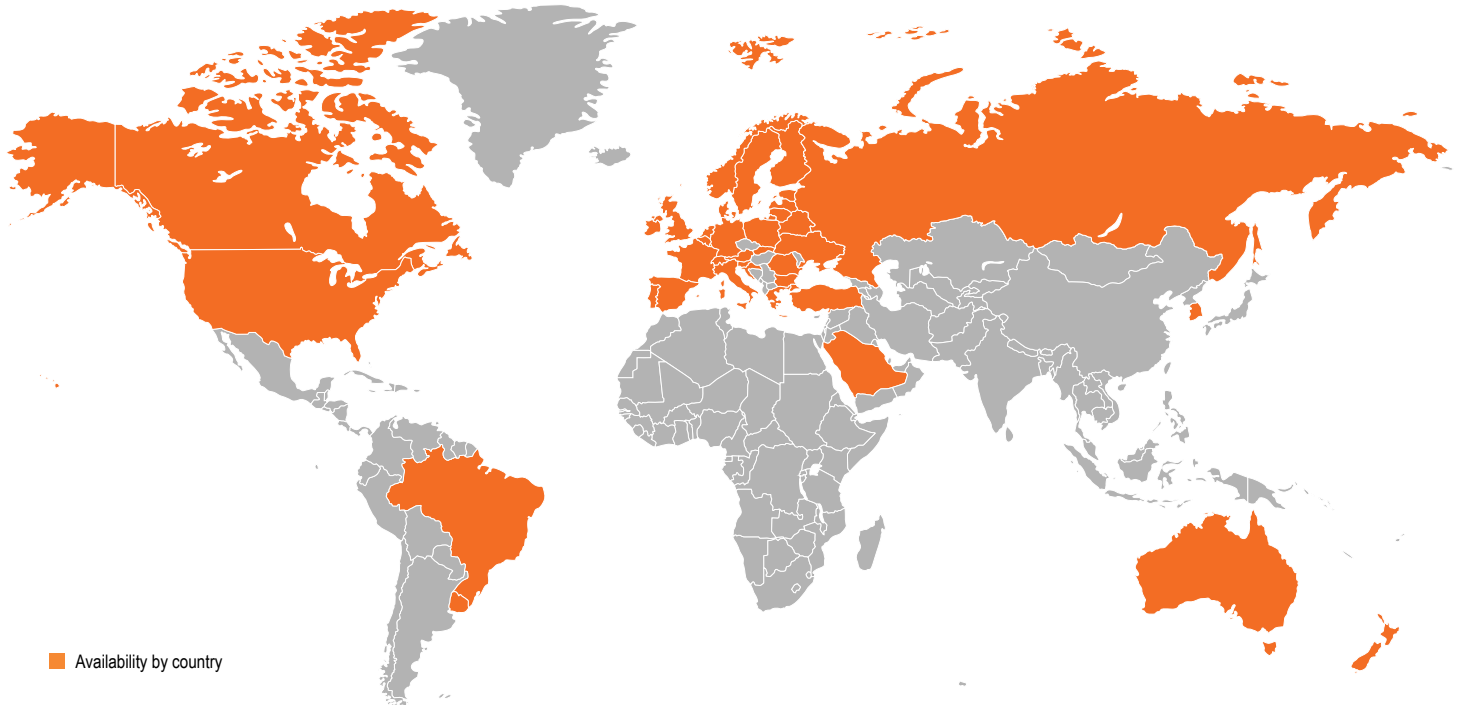
The confidence in Crystalyx products comes from the extensive research that has been carried out on our products over the last 25 years. Crystalyx has been trialled at some of the finest agricultural institutes in the world, such as Kansas State University, Newcastle University, University of Hannover and Aberystwyth University to name

but a few. It is this independent research that gives credibility to the benefits of Crystalyx, and allows livestock farmers to put their trust in Crystalyx products.

The success of Crystalyx blocks now means that they are sold in over 20 countries around the world, and give supplementation to the diets of tens of millions of cattle and sheep across the globe. It is the unique manufacturing process Crystalyx uses that allows for such a high quality product to be created. The process involves driving moisture out of the molasses over an extended period of time, meaning that a naturally formed, hard low moisture product remains. Crystalyx blocks are packed full of energy, protein, trace elements, minerals and vitamins, with the required intake often being less than half that of other blocks on the market. The relatively low required intakes means that Crystalyx blocks can last up to twice as long as other feed blocks.

Crystalyx feed blocks are a convenient way of providing supplementation to livestock 24 hours a day. The product is licked little and often, constantly supplementing the productive animal and stimulating the rumen bugs, making the best use of home-grown forages and balancing forage deficiencies.

Crystalyx Worldwide



■ Availability by country

Features and Benefits

■ LOW MOISTURE

Crystalyx is very low in moisture, typically it contains only 2-3% water. Most dried feedstuffs contain around 10% and traditional chemical blocks can contain in excess of 20% moisture. Water dilutes nutrients and is very expensive to transport.

■ HARD CRYSTALLINE STRUCTURE

Crystalyx products don't break up in wet weather. The design of the product means that water can not penetrate the surface (as is the case with chemical blocks), only the top few millimetres of Crystalyx blocks softens as moisture ingresses from the atmosphere, allowing livestock to lick the product.

■ CAN ONLY BE LICKED

The hard, durable consistency of Crystalyx means that animals cannot gorge on the product. Instead intakes are consistent, with the product being consumed little and often as designed.

■ DRAMATICALLY INCREASES SALIVA FLOW

Saliva is a natural buffer (10% sodium Bicarbonate) and will help offset problems associated with acidic forages.

■ HIGH IN FERMENTABLE ENERGY

Crystalyx Products contain as much as 43% sugar which helps to increase the speed and rate of rumen fermentation. Most bucket supplements contain around 18% sugar, which is similar to good quality grass, therefore does not improve fermentation rate.

■ DOES NOT DISPLACE OTHER FEEDS

Feeding Crystalyx increases fermentation efficiency and speed, meaning that animals supplemented with Crystalyx increase their forage intake. This is in contrast to other supplements that can simply displace other feeds.

■ **SUITABLE FOR GRASS FED ANIMALS**

Crystalyx can be fed to a variety of grass fed animals such as cattle, sheep, goats, deer, reindeer, alpacas, buffalo, bison and even elephants.

■ **NO FILLERS**

No chemicals or fibre are added to aid cohesion.

■ **CONCENTRATED ENERGY SOURCE**

Contains more energy than many other feed/mineral blocks.

■ **IMPROVED FEED INTAKE AND DIGESTION**

Crystalyx improves ruminant rumen activity allowing livestock to consume more forage by up to 15%, and digest what they do eat more efficiently by as much as 10%.

■ **VERY PALATABLE**

Animals love it - even shy feeders readily consume Crystalyx.

■ **FULL MINERAL PACKAGE**

Crystalyx products contain protein, vitamins, minerals and trace elements, meaning there is little need to offer any other supplements (unless specific clinical deficiency exists).

■ **ECONOMIC**

The relatively low required intake means that Crystalyx products cost less per day than many other feed/mineral blocks.

■ **RESEARCH PROVEN**

Crystalyx blocks are backed up by scientific research from all over the world, with research continually showing significant improvements in animal health, performance, fertility and productivity.

What's in Crystalyx?

■ DEHYDRATED MOLASSES

Provides a very palatable and available form of energy which allows the rumen flora to utilise the nutritional value of forages at optimum levels. This increases the intake of dry matter and its digestibility when supplementing high forage diets.

■ VEGETABLE OIL

A high quality and palatable feed material which passes through the rumen to be digested and used directly by the animal. Vegetable oil provides the most concentrated form of energy of any feed material available - up to 3.5 times that found in cereals.

■ PROTEIN

The Crystalyx range contains differing levels of protein dependant on the role of the product in the overall diet. The forms used are urea for the optimum utilisation of fibre in the rumination process plus soya bean and prairie meal. The products formulated for organic farming do not contain any added protein sources.

■ MINERALS

All Crystalyx blocks include highly available forms of magnesium, phosphorus and calcium incorporated at optimum levels to enhance animal performance, meaning additional supplementation is often not required. Salt is recommended to be fed on a free access basis. Cattle and sheep will self regulate their intake to meet individual requirements. High magnesium products such as

Cattle High Mag and Pre-Calver have increased levels of salt to improve magnesium availability and palatability so no additional source of salt is necessary with these products.

■ TRACE ELEMENTS

Essential trace elements are included at new improved levels in the Crystalyx range, with copper being included in the main cattle products.

■ VITAMINS

The essential vitamins A, D3 and E are included to balance forage variability in all products with the exception of Crystalyx Organyx Plus and Crystalyx Organyx Garlic.

What to Feed and When

Feeding Information

CATTLE TYPE	WINTER			SPRING			SUMMER			AUTUMN		
	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
LACTATING DAIRY	OPTIMUM			CATTLE HIGH-MAG			OPTIMUM			CATTLE HIGH-MAG		
	CATTLE BOOSTER						CATTLE BOOSTER			OPTIMUM		
LACTATING SUCKLER	CATTLE BOOSTER			CATTLE HIGH-MAG			CATTLE BOOSTER			CATTLE HIGH-MAG		
DRY DAIRY/BEEF	PRE-CALVER			PRE-CALVER			PRE-CALVER			PRE-CALVER		
										BEET BALANCER		
GROWING/STORE CATTLE	CATTLE BOOSTER			CATTLE BOOSTER			CATTLE BOOSTER			CATTLE BOOSTER		
	EASY BREATHER			GARLYX			GARLYX			EASY BREATHER		
REPLACEMENT HEIFERS	CATTLE BOOSTER			CATTLE BOOSTER			CATTLE BOOSTER			CATTLE BOOSTER		
	EASY BREATHER			GARLYX			GARLYX			EASY BREATHER		
FINISHING CATTLE	CATTLE BOOSTER			CATTLE BOOSTER			CATTLE BOOSTER			CATTLE BOOSTER		
	EASY BREATHER									EASY BREATHER		
BREEDING BULLS	CATTLE BOOSTER			CATTLE BOOSTER			CATTLE BOOSTER			CATTLE BOOSTER		
				GARLYX			GARLYX			GARLYX		
CALVES (UP TO 3 MTHS OLD)	EASY BREATHER			EASY BREATHER			EASY BREATHER			EASY BREATHER		

What to Feed and When

	WINTER			SPRING			SUMMER			AUTUMN		
	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
HILL	EXTRA HIGH ENERGY			STANDARD			STANDARD			STANDARD		
				EXTRA HIGH ENERGY			EXTRA HIGH ENERGY			EXTRA HIGH ENERGY		
				GARLYX			GARLYX			GARLYX		
LOWLAND (WINTER HOUSED)	EXTRA HIGH ENERGY			STANDARD								
	EASY BREATHER			EXTRA HIGH ENERGY			EXTRA HIGH ENERGY			EXTRA HIGH ENERGY		
				GARLYX			GARLYX					
SHEEP TYPE										SHEEP BEET BALANCER		
	EXTRA HIGH ENERGY			EXTRA HIGH ENERGY			EXTRA HIGH ENERGY			EXTRA HIGH ENERGY		
	EASY BREATHER			GARLYX			GARLYX					
GROWNING LAMBS										EASY BREATHER		
	EXTRA HIGH ENERGY			EXTRA HIGH ENERGY			EXTRA HIGH ENERGY			EXTRA HIGH ENERGY		
	EASY BREATHER									EASY BREATHER		
FINISHING LAMBS	SHEEP BEET BALANCER									SHEEP BEET BALANCER		
	EXTRA HIGH ENERGY			EXTRA HIGH ENERGY			EXTRA HIGH ENERGY			EXTRA HIGH ENERGY		
	EASY BREATHER			GARLYX			GARLYX			EASY BREATHER		
BREEDING LAMBS/TUPS	EXTRA HIGH ENERGY			EXTRA HIGH ENERGY			EXTRA HIGH ENERGY			EXTRA HIGH ENERGY		
	EASY BREATHER			GARLYX			GARLYX			EASY BREATHER		

**MIXED
GRAZING**

	WINTER			SPRING			SUMMER			AUTUMN		
	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
CATTLE AND SHEEP	EXTRA HIGH ENERGY			STANDARD			EXTRA HIGH ENERGY			STANDARD		
	EXTRA HIGH ENERGY			EXTRA HIGH ENERGY			GARLYX			EXTRA HIGH ENERGY		
				GARLYX								

**ORGANIC
SYSTEMS**

	WINTER			SPRING			SUMMER			AUTUMN		
	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
CATTLE AND SHEEP	ORGANYX PLUS			ORGANYX PLUS			ORGANYX PLUS			ORGANYX PLUS		
				ORGANYX GARLIC			ORGANYX GARLIC					

Crystalyx Research

Crystalyx products benefit from years of scientific research at some of the finest agricultural institutes around the world, with results consistently showing significant improvements in animal health, performance and productivity.

With a scientific approach to animal nutrition, Crystalyx continues to invest heavily in research and development, ensuring that Crystalyx products remain at the forefront of livestock supplementation.

Research at Newcastle University and Kansas State University on rumen fermentation forms the foundations of Crystalyx products. Results conclusively show that feeding Crystalyx stimulates the rumen, making the rumen bugs work harder and ever more efficiently. This improvement in rumen activity allows livestock to consume more forage by up to 15% and digest

what they do eat more efficiently - by as much as 10%. The increase in consumption and more efficient digestion of home grown forages allow animals to perform at their very best, by means of improving DLWG, enhancing fertility and increasing milk yield.

Research conducted at Aberystwyth University has also confirmed that the improved animal performance when Crystalyx is fed, leads to a significant reduction in methane output per kilogram of liveweight gain, of almost 20%. The Aberystwyth research team further concluded, that based on their trial results, growing heifers fed Crystalyx Cattle Booster at grass would reach bulling weight approximately six weeks earlier than control heifers on grass alone - further reducing their lifetime methane emissions.

Crystalyx has an ever growing list of research partners continually assessing the performance of

Crystalyx blocks. On-going research ensures that Crystalyx products are developed to offer livestock the very best in nutritional supplementation. Product specifications are closely monitored and tailored to fit both modern and traditional farming systems, ultimately improving livestock health and performance.

With an emphasis on research Crystalyx sponsor PhD students, encouraging the development and progression of the next generation of independent researchers.

Research Partners



Crystalyx for Sheep



Optimises performance by stimulating forage intakes and digestibility while providing all essential mineral, trace elements and vitamins

Increases ovulation rates and lamb numbers at scanning

Maintains body condition during pregnancy to maximise lamb vitality and health

Reduces the risk of twin lamb disease

Optimises lamb birth weight to produce healthy vigorous lambs

Enhances ewe milk production for improved lamb daily weight gain

Extra High Energy

Crystalyx Extra High Energy is a feed tub that can be used all year round to provide supplementation for ewes, rams and lambs. High in protein, energy and with a full complement of minerals, trace elements and vitamins, Extra High Energy and forage can be all you need to operate a highly effective and profitable sheep rearing system.

Flushing and Topping: Crystalyx Extra High Energy has been proven by Newcastle University and Kansas State University to increase forage intake by 15% and forage digestion by 10%, the increased intake and digestion is key in ensuring that ewes reach the correct body condition score quickly before mating with the ram. Over fat or thin ewes take longer to come on heat when rams are turned in, and the oestrus period is erratic with fewer eggs shed and are thus more likely to be barren.

Mid Pregnancy Feeding: Should aim to keep ewes in top condition, excessive loss of condition while pregnant will jeopardise placental development and reduce body reserves available for milk production. Trials conducted at Newcastle University found that ewes with access to Crystalyx Extra High Energy maintained better condition than ewes on grass alone, and their lambs subsequently had a 5% higher growth rate.

Weaning and Finishing Lambs: Weaning can often be a stressful time for lamb's and many can lose condition due to no longer receiving the nutrients once contained within their mothers milk. Providing lambs with Crystalyx Extra High Energy after weaning provides all the supplementary nutrients necessary to balance grass and make up for the loss of the ewes milk. The high levels of sugar present in Crystalyx stimulates the rumen allowing the lamb to consume and digest more forage resulting in improved growth rates.

Feeding Guidelines

Rates:

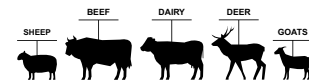
2x 80kg tubs/100 sheep.
2x 22.5kg tubs/40 sheep.

Typical intakes:

40-60g/ewe/day.

Always place a minimum of 2 tubs per group to avoid bullying.

Available in 80kg and 22.5kg tubs.



Crystalyx for Sheep



Balances the key nutritional deficiencies typically seen in a brassica diet

Contains a high phosphorus level

Contains a high DUP from high quality prairie meal to maintain good animal performance

Palatable, even alongside brassicas so intakes are regular and steady

Sheep Beet Balancer

Brassica crops such as kale, forage rape, stubble turnips, swedes and new kale/rape hybrids can provide nutritious, cost-effective feeds for sheep and growing/finishing lambs with high dry matter yields being produced quickly.

The crops can be used for out-wintering, to extend the grazing season, or to help fill a forage gap in dry summers. Out-wintering on brassicas can allow more animals to be kept, with reduced feed costs by grazing in situ. Fodder beet, although technically not a brassica, can also be grazed in situ.

Brassicas should always be fed with ab-lib forage, preferably as silage or hay to maintain a good rumen scratch factor. Supplementary concentrates are generally not needed when grazing brassicas, but a source of supplementary minerals will be required to balance the nutrient deficits within the crop.

Crystalyx Sheep Beet Balancer has been formulated to complement and balance brassica or fodder beet diets when supplemented with adequate forage as a source of fibre.

Feeding Guidelines

Rates:

1x 22.5kg tub/25 lambs.

1x 22.5kg tub/25 ewes.

Typical intakes:

20-40g/growing/finishing lambs/day.

40-60g/ewes/day.

Always place a minimum of 2 tubs per group to avoid bullying.

Available in 22.5kg tubs only.



Crystalyx for Cattle



Optimises performance by stimulating forage intakes and digestibility while providing all essential mineral, trace elements and vitamins

Improves animal health and fertility, increasing pregnancy rates in heifers

Increases DLWG by up to 36% allowing heifers to reach bulling weight earlier

Reduce the risk of acidosis by stimulating saliva production to help maintain a stable rumen pH

Helps buffer wet acidic silages and stimulate silage intakes

Reduces loss of body condition in early lactation to optimise performance and fertility

Cattle Booster

Crystalx Cattle Booster is a feed tub ideally suited for use in dairy and beef farming systems, in both cases Cattle Booster has been shown (through University research trials) to increase forage intake and digestibility. Trials have concluded that Cattle Booster stimulates growth rates and improves overall health, fertility and milk quality in livestock.

Beef Farming: Crystalx Cattle Booster has undergone rigorous trials and research over the last 25 years, with results continually proving that Cattle Booster stimulates forage intake and digestion in cattle. Research at Kansas State University has confirmed that Cattle Booster increases forage intake by as much as 15%, and increase digestion by a further 10%. The increase in forage intake and digestion has a direct effect on cattle daily live weight gain (DLWG), with a 25% increase being noted in trials

at Newcastle University. In the vast majority of trials done, Cattle Booster has more than doubled the investment by extra growth performance. i.e. for every £1 spent on the product, at least a £2 return was gained.

Dairy Farming: The ability to get the cow in calf and producing milk is of vital importance in any dairy enterprise, Crystalx Cattle Booster contains high levels of selenium and copper which have an important role in improving fertility of dairy cows and breeding bulls. Research in Bandenburg, Germany showed a 15% increase in pregnancy rates when Cattle Booster was trialled on dairy replacement heifers, and in separate trials Cattle Booster was proven to improve bull fertility by 24% and improve (DLWG) by 36%. Cattle Booster also has a direct impact on milk yield. By stimulating the rumen bugs to work a little harder and more efficiently the lactating cow can be expected to produce up to 2 litres extra milk per day.



Feeding Guidelines

Rates:

- 2x 80kg tubs/50 cattle.
- 2x 22.5kg tubs/20 cattle.

Typical intakes:

- Growing cattle: 100-150g/day.
- Lactating cows: 150-250g/day.

Always place a minimum of 2 tubs per group to avoid bullying.

Available in 80kg and 22.5kg tubs.



Crystalyx for Cattle



Optimises performance by stimulating forage intakes and digestibility while providing all essential mineral, trace elements and vitamins

Maintains optimum blood magnesium levels to reduce the risk of milk fever and 'slow calvings'

Supports and maintains a strong, healthy immune system

Optimises calf health and vigour (more 'get up and go')

Reduces the risk of difficult calvings and retained placenta

Conditions cows during the dry period to maintain optimum health so they transition more easily into lactation

Pre-Calver

Crystalx Pre-Calver is perfect for feeding to both dairy and beef cows during the dry period, as it provides a low calcium/high magnesium diet which greatly reduces the risk of milk fever and slow calving. The increased levels of magnesium contained in Crystalx Pre-Calver helps improve muscle tone. Inadequate levels can lead to slow calving syndrome where calving can be difficult and prolonged.

Dry Cow Feeding: Many dry cows receive no special attention during this most important period and are often expected to graze pasture in a cleaning up role. For a very small investment in Pre-Calver (Approx 20p per cow per day) the forage diet can be supplemented to ensure there are no nutritional deficiencies and help the dry cow recover to optimum condition prior to calving.

Research carried out in New Zealand showed that giving access of Crystalx Pre-Calver to dairy cows significantly reduced the incidences of milk fever, and the need for assisted calving.

The consistent and significant reduction in mastitis in early lactation, confirms the improved immunity when Pre-Calver is fed.

Research undertaken at the University of Parma has shown that Pre-Calver substantially increases colostrum production, leading to a 14% increase in milk yield being recorded over the first 100 days.



Feeding Guidelines

Rates:

2x 80kg tubs/50 cattle.

2x 22.5kg tubs/20 cattle.

Typical intakes:

200g/cow/day.

Always place a minimum of 2 tubs per group to avoid bullying.

Available in 80kg and 22.5kg tubs.



Crystalyx for Cattle



The most palatable high magnesium block on the market (35% sugar)

Contains multiple magnesium sources to optimise magnesium availability and help maintain normal blood magnesium levels

High digestibility and magnesium availability confirmed through trials at Glasgow Veterinary School

Provides all essential minerals, trace elements and vitamins needed to balance spring and autumn pasture

Cattle High-Mag

Crystalyx Cattle High-Mag is a high magnesium lick that is designed to help maintain normal blood magnesium levels in lactating beef and dairy cows during periods of risk. The quality of the magnesium and the method in which Cattle High-Mag is produced means that it is highly palatable and digestible.

Magnesium Supplementation: Cattle are in most need of magnesium supplementation during Spring and Autumn months, when grass is typically fast growing and lush. However it usually contains high levels of potassium which reduces magnesium availability. Cattle must include magnesium in their diet in order to maintain normal blood magnesium levels during these risk periods, magnesium salts are a way of providing a source of magnesium, but they are bitter and not readily taken by cattle. Crystalyx Cattle High-Mag provides a highly palatable form of magnesium

that is readily available with every lick that the cow takes. Research at Glasgow University (School of Veterinary Medicine) has confirmed that the high digestibility and availability of the magnesium sources used in Crystalyx Cattle High-Mag ensures that normal blood magnesium levels are maintained when target intakes are achieved.

Costing between 14p and 19p per day, Crystalyx Cattle High-Mag is convenient and economical to use.

Feeding Guidelines

Rates:

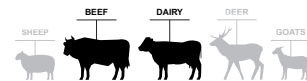
2x 80kg tubs/50 cattle.
2x 22.5kg tubs/20 cattle.

Typical intakes:

150-200g/cow/day.

Always place a minimum of 2 tubs per group to avoid bullying.

Available in 80kg and 22.5kg tubs.



Crystalyx for Cattle



Optimises performance by stimulating forage intakes and digestibility in early lactation while providing all essential mineral, trace elements and vitamins

Reduces the risk of ketosis and acidosis due to improved energy intakes

Helps optimise fertility by improving nutrient balance

Improves milk yield

Optimum

Crystalyx Optimum is a very high energy lick designed specifically to provide selected key nutrients to help stimulate the appetite and dry feed intake in freshly calved cows. Optimum helps improve energy balance in early lactation by providing a source of rumen-by-pass energy for the cow.

Early Lactation: Maximising appetite and dry matter intake in early lactation is the key to healthy and highly productive cows. A period of negative energy balance occurs in early lactation when a cow's appetite lags behind the increased energy and nutrient requirement for milk production, meaning that the cow milks off her own back and subsequently loses condition. This excess mobilisation of body fat can result in ketosis and fatty liver, leading to an increased risk of milk fever. Optimum readdresses this balance by increasing forage intake and digestion therefore giving the cow more energy to utilise.

Optimum also contains other proven buffers, including live yeast, which helps prevent the build up of lactic acid that can cause acidosis. This stabilises rumen pH within Optimum limits and reduces the risk of digestive upsets, ensuring feed intake is maximised to support optimum health, fertility and lactation performance.

Research carried out at University of Agriculture, Krakow, Poland and the University of Parma, Italy have confirmed that feeding Crystalyx Optimum in early lactation stimulates the return to oestrus significantly reducing the calving to conception interval.



Feeding Guidelines

Rates:

- 2x 80kg tubs/50 cattle.
- 2x 22.5kg tubs/20 cattle.

Typical intakes:

150-250g/cow/day.

Always place a minimum of 2 tubs per group to avoid bullying.

Available in 80kg and 22.5kg tubs.



Crystalix for Cattle



Balances the key nutritional deficiencies typically seen in a high fodder beet diet

Contains good levels of both calcium and phosphorus

Includes 5% magnesium - particularly important for pregnant cows

Contains high levels of all essential trace elements and vitamins

Palatable, even alongside fodder beet so intakes are regular and steady

Beet Balancer

The use of fodder beet as a grazed forage crop for winter feeding has been pioneered by the New Zealand dairy industry where it has rapidly increased in hectares sown over the past 10 years, due to the high yields achievable (20-30t DM/ha) together with its high energy content.

Traditional use of winter crops has been by restricted intakes behind an electric fence, however, the typically high utilisation of grazed fodder beet (>90%) enables increased intakes to be achieved without progressively greater crop wastage.

Fodder beet can be grazed by either late pregnant beef or dairy cows or by growing youngstock. Fodder beet, like most bulb crops, is relatively low in major minerals, particularly calcium and phosphorus and very deficient in trace elements, requiring significant supplementation to maintain

animal health and performance.

Crystalx Beet Balancer has been formulated to complement and balance a high fodder beet diet when supplemented with adequate forage as a source of fibre.

Feeding Guidelines

Rates:

1x 80kg tub/25 growing cattle.

1x 80kg tub/25 cows.

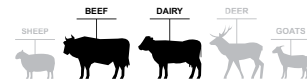
Typical intakes:

80-100g/cow/day by growing cattle.

120-150g/cow/day by mature cows.

Always place a minimum of 2 tubs per group to avoid bullying.

Available in 80kg tubs only.



Crystalyx for Cattle and Sheep



Helps keep airways clear and reduces stress

A natural aid to help reduce coughing and respiratory irritation

Helps calves regain appetite after a stress or challenge

A powerful natural aid to help calves resist respiratory challenges

Reduces the risk of growth checks

Easy Breather

Crystalyx Easy Breather is a feed lick specially designed with the intention to help alleviate stress and respiratory problems in calves and sheep. Respiratory problems in calves and sheep are most prevalent in autumn and winter, especially when the animals are housed. Containing menthol and eucalyptus Crystalyx Easy Breather offers a natural aid to maintain a healthy respiratory system.

Calves and sheep, like children, are particularly prone to respiratory problems, as they have not developed any natural immunity to many infectious organisms. The severity of the problems can vary from a mild nasal discharge and coughing in a group of calves, to severe pneumonia with some deaths. Crystalyx Easy Breather contains active and proven decongestants to help reduce coughing and respiratory irritation.

With a full complement of vitamins and trace elements, Crystalyx Easy Breather helps develop and maintain a strong healthy immune system.

Highly palatable Crystalyx Easy Breather helps calves and sheep regain their appetite after a stress or challenge. Dry feed intake is stimulated giving stronger more vigorous livestock that are better able to withstand a challenge.



Feeding Guidelines

Rates:

1x 5kg tub/8-10 calves (under 3 mths).
2x 22.5kg tubs/20 older cattle/Sheep.

Typical intakes:

10g-20g/lamb/day. 30g-40g/calf/day.
30g-40g/sheep/day. 80g-100g/older calves/day.

Always place a minimum of 2 tubs per group to avoid bullying.

Available in 22.5kg and 5kg tubs.



Crystalyx for Cattle and Sheep

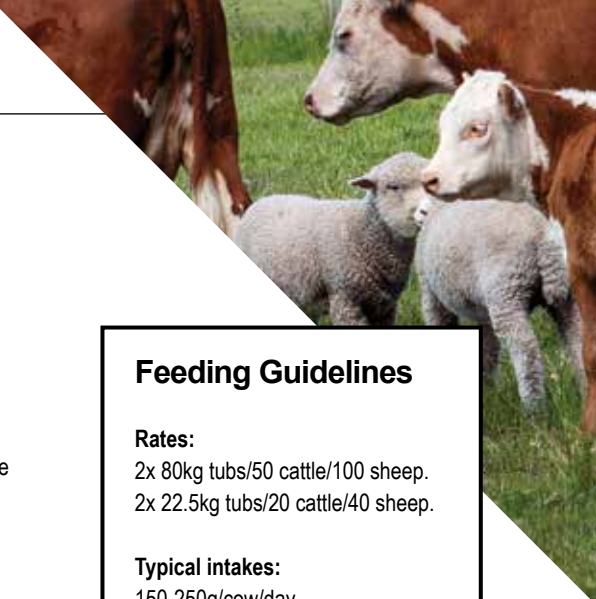


Optimises performance by stimulating forage intakes and digestibility while providing essential mineral, trace elements and vitamins

Produces an invisible screen over the animals body to help repel insects, reducing the risk of infection from bites

Reduces restlessness and irritation in grazing stock

Balances nutrient deficiencies in summer grass



Garlyx

Crystalx Garlyx is primarily designed to maximise animal performance by stimulating forage intake and digestion, with an added high concentration of garlic to protect cattle and sheep from biting insects. The natural high sulphur compounds in garlic act as an insect repellent which wards off flies and other biting insects.

Crystalx Garlyx is ideally provided to livestock at times when flies and biting insects are extremely prevalent. If livestock are stressed and or irritated then they are less likely to graze, therefore becoming less productive. If livestock's skin is made less attractive to biting insects then they are less likely to bother livestock. The concentrated natural garlic contained in Crystalx Garlyx is consumed by livestock with every lick, and over the days that follow the garlic passes through the animal and is secreted out from pores in the skin, this produces an invisible

barrier around livestock which flies and other biting insects find repellent.

Garlyx also contains a full complement of vitamins, minerals and trace elements to balance the deficiencies in summer grass. High levels of zinc contained in Crystalx Garlyx also help to maintain skin integrity and strength to further guard against biting insects.

Feeding Guidelines

Rates:

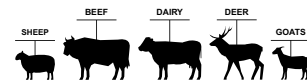
2x 80kg tubs/50 cattle/100 sheep.
2x 22.5kg tubs/20 cattle/40 sheep.

Typical intakes:

150-250g/cow/day.
40-60g/ewe/day.

Always place a minimum of 2 tubs per group to avoid bullying.

Available in 80kg and 22.5kg tubs.



Crystalyx for Cattle and Sheep



A palatable source of magnesium for ewes in early lactation

Optimises performance by stimulating forage intakes and digestibility while providing essential minerals, trace elements and vitamins

Does not break up in cold wet conditions

Standard

Crystalyx Standard is the ideal tub to be fed to a mixed grazing system. Standard provides livestock with high levels of energy and an excellent source of protein, along with valuable source of vitamins, minerals and trace elements. Standard can be used as a supplementary source of magnesium for beef cows and ewes in early lactation.

Crystalyx Standard is ideally suited for livestock that are grazed on poor/variable grazing areas such as uplands, moorlands or marsh. Standard contains 5% magnesium and can be a valuable tool in helping maintain normal blood magnesium levels during spring and autumn months. Research at Newcastle University confirmed that providing cattle with Crystalyx can increase both the rate and extent of forage digestion, with trials on poorer quality of forage showing an even greater noted improvement.

Feeding Guidelines

Rates:

2x 80kg tubs/50 cattle/100 sheep.
2x 22.5kg tubs/20 cattle/40 sheep.

Typical intakes:

150-250g/cow/day.
40-60g/ewe/day.

Always place a minimum of 2 tubs per group to avoid bullying.

Available in 80kg and 22.5kg tubs.



Crystalix for Cattle and Sheep



Fully approved
100% organic
feed under UK
Certification UK2
and UK5

Contains both
permitted major
minerals and added
trace elements.
Ideal for all ages
and types of
livestock

Produces an
invisible screen
over the animals
body to help repel
insects, reducing
the risk of infection
from bites

Reduces
restlessness and
irritation in grazing
stock

Organyx Garlic

Organyx Garlic is primarily designed to maximise animal performance by stimulating forage intake and digestion, with an added high concentration of garlic to protect cattle and sheep from biting insects. The natural high sulphur compounds in garlic act as an insect repellent which ward off flies and other biting insects.

Organyx Garlic is ideally provided to livestock at times when flies and biting insects are extremely prevalent. If livestock are stressed and or irritated then they are less likely to graze, therefore becoming less productive. If livestock's skin is made less attractive to biting insects, they are less likely to bother livestock. The natural garlic contained in Organyx Garlic is consumed by livestock with every lick, and over the days that follow the garlic passes through the animal and is secreted out from pores in the skin, this produces an invisible barrier around livestock which flies

and other biting insects find repellent.

Organyx Garlic also contains both major minerals and trace elements to balance the deficiencies in summer grass. High levels of zinc also help to maintain skin integrity and strength to further guard against biting insects.

Feeding Guidelines

Rates:

2x 80kg tubs/50 cattle/100 sheep.
2x 22.5kg tubs/20 cattle/40 sheep.

Typical intakes:

150-250g/cow/day.
40-60g/ewe/day.

Always place a minimum of 2 tubs per group to avoid bullying.

Available in 80kg and 22.5kg tubs.



Crystalyx for Cattle and Sheep

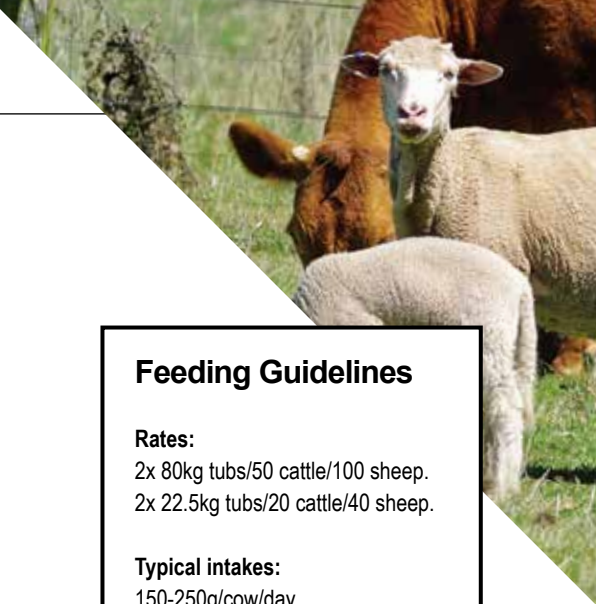


Optimises performance by stimulating forage intakes and digestibility

Fully approved 100% organic feed under UK Certification

Improves animal health and performance

Does not break up in cold wet conditions



Organyx Plus

Crystalyx Organyx Plus is 100% organic and fully approved under Great Britain Organic farming systems. Suitable for all classes of Beef, Sheep and Dairy livestock.

Organic livestock production is intended to “contribute to the equilibrium of agricultural production systems”. However, animal welfare must not be jeopardised in organic systems and the EU Council Regulations on organic farming recognise this by stating “in order to provide the basic nutritional requirements of livestock, certain minerals and trace elements may need to be used under well-defined conditions” such as when organic livestock producers can show evidence of mineral and trace element deficiencies in home-grown forages.

Crystalyx Organyx Plus contains both major minerals and added trace elements which is ideal to be fed either in house or at grass.

Ideal for flushing ewes and cows/heifers during the service period.

Feeding Guidelines

Rates:

2x 80kg tubs/50 cattle/100 sheep.
2x 22.5kg tubs/20 cattle/40 sheep.

Typical intakes:

150-250g/cow/day.
40-60g/ewe/day.

Always place a minimum of 2 tubs per group to avoid bullying.

Available in 80kg and 22.5kg tubs.



Product Specifications	Cattle High-Mag	Cattle Booster	Optimum	Pre-Calver	Easy Breather	Garlyx
Sugar	35	38	35	37	40	34
Oil %	2.5	6.0	6.0	2.5	6.0	6.0
Protein %	3.0	12.0	3.0	3.0	6.5	3.0
P. Equiv. Urea %	-	8.7	-	-	-	-
Fibre %	0.25	0.25	0.25	0.25	0.25	0.25
Ash %	36.0	27.0	22	35.0	22.5	30.0
ME MJ/kgDM	10.0	12.0	12.3	9.0	-	11.0
Minerals						
Calcium (Ca) %	1.0	4.0	4.0	-	2.0	4.0
Phosphorus (P) %	-	2.0	2.0	1.0	1.5	2.0
Magnesium (Mg) %	10.5	1.0	1.0	7.0	0.4	0.3
Sodium (Na) %	3.0	2.0	2.5	4.0	2.3	3.5
Trace Elements						
Copper mg/kg	1000	700	600	1000	-	-
Manganese mg/kg	1000	800	800	2000	800	800
Zinc mg/kg	2000	1800	1200	3000	1200	1000
Iodine mg/kg	150	60	60	200	6	60
Cobalt mg/kg	20	12	12	20	-	12
Selenium mg/kg	20	10	9	20	5	9
Vitamins						
Vitamin A iu/kg	100,000	75,000	75,000	150,000	25,000	75,000
Vitamin D3 iu/kg	20,000	15,000	15,000	30,000	4,000	15,000
Vitamin E mg/kg	250	150	150	2,500	3,000	150
Vitamin C mg/kg	-	-	-	-	3,000	-
Vitamin B12 mcg/kg	-	-	-	-	220	-

Product Specifications	Beet Balancer	Extra High Energy	Standard	Sheep Beet Balancer	Organyx Plus	Organyx Garlic
Sugar	30	38	35	33	43	40
Oil %	2.0	14.0	6.0	2.0	2.0	2.0
Protein %	3.0	12.0	12.0	12.0	3.0	3.5
P. Equiv. Urea %	-	5.0	8.7	5.0	-	-
Fibre %	0.25	0.25	0.25	0.25	0.25	0.25
Ash %	43.0	17.5	27.0	34.0	24.0	26.0
ME MJ/kgDM	-	16.0	12.0	-	11.0	10.0
Minerals						
Calcium (Ca) %	6.0	3.0	4.0	5.5	4.0	4.0
Phosphorus (P) %	5.0	1.0	0.5	5.0	2.0	2.0
Magnesium (Mg) %	5.0	0.25	5.0	-	0.2	0.2
Sodium (Na) %	2.0	-	-	2.0	2.5	3.0
Trace Elements						
Copper mg/kg	1000	-	-	-	-	-
Manganese mg/kg	1000	900	800	1000	900	800
Zinc mg/kg	2000	1800	800	2000	900	1000
Iodine mg/kg	60	60	80	60	60	60
Cobalt mg/kg	20	16	8	20	12	12
Selenium mg/kg	15	9	4	10	9	9
Vitamins						
Vitamin A iu/kg	150,000	100,000	60,000	150,000	-	-
Vitamin D3 iu/kg	30,000	20,000	12,000	30,000	-	-
Vitamin E mg/kg	500	1,000	150	500	-	-
Vitamin C mg/kg	-	-	-	-	-	-
Vitamin B12 mcg/kg	-	-	-	-	-	-

Intake Requirement Calculator (Per month)

SHEEP

Number of Ewes	Tub Size	Intake (grams per day)					
		20g	30g	40g	50g	60g	70g
100	22.5 Kg	3 tubs	5 tubs	6 tubs	7 tubs	9 tubs	10 tubs
	80 Kg	1 tub	2 tubs	2 tubs	2 tubs	3 tubs	3 tubs
200	22.5 Kg	6 tubs	9 tubs	12 tubs	14 tubs	17 tubs	19 tubs
	80 Kg	2 tubs	3 tubs	4 tubs	4 tubs	5 tubs	6 tubs
500	22.5 Kg	14 tubs	21 tubs	28 tubs	35 tubs	42 tubs	47 tubs
	80 Kg	4 tubs	6 tubs	8 tubs	10 tubs	12 tubs	14 tubs
1000	22.5 Kg	28 tubs	42 tubs	56 tubs	70 tubs	83 tubs	95 tubs
	80 Kg	8 tubs	12 tubs	16 tubs	20 tubs	24 tubs	27 tubs

Approx days one Crystalyx Tub will last

Number of Ewes	Tub Size	Intake (grams per day)					
		20g	30g	40g	50g	60g	70g
20	22.5 Kg	56 days	37 days	28 days	22 days	18 days	16 days
50	80 Kg	80 days	53 days	40 days	32 days	26 days	22 days

CATTLE

Intake (grams per day)

Number of Cattle	Tub Size	Intake (grams per day)					
		100g	150g	200g	250g	300g	350g
20	22.5 Kg	3 tubs	5 tubs	6 tubs	7 tubs	9 tubs	10 tubs
	80 Kg	1 tub	2 tubs	2 tubs	2 tubs	3 tubs	3 tubs
50	22.5 Kg	7 tubs	11 tubs	14 tubs	18 tubs	21 tubs	25 tubs
	80 Kg	2 tubs	3 tubs	4 tubs	5 tubs	6 tubs	7 tubs
100	22.5 Kg	14 tubs	21 tubs	28 tubs	35 tubs	42 tubs	49 tubs
	80 Kg	4 tubs	6 tubs	8 tubs	10 tubs	12 tubs	14 tubs
200	22.5 Kg	28 tubs	42 tubs	56 tubs	69 tubs	84 tubs	97 tubs
	80 Kg	8 tubs	12 tubs	16 tubs	20 tubs	24 tubs	28 tubs

Approx days one Crystalyx Tub will last

Intake (grams per day)

Number of Cattle	Tub Size	Intake (grams per day)					
		100g	150g	200g	250g	300g	350g
10	22.5 Kg	22 days	15 days	11 days	9 days	7 days	6 days
15	80 Kg	53 days	35 days	26 days	21 days	17 days	15 days

Notes

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PROVEN



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