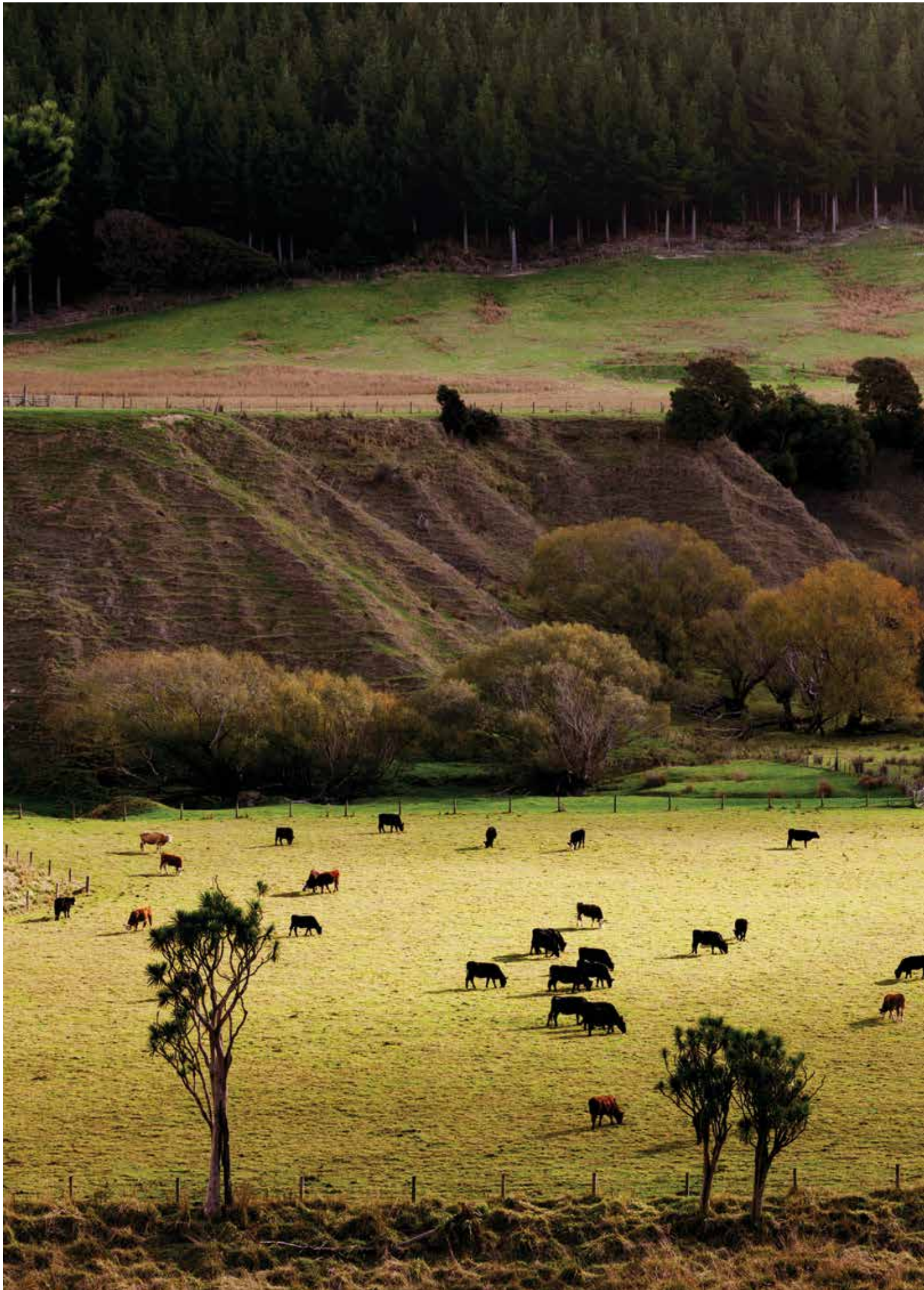


Fertiliser

Pastoral and
cropping

Helping you get the most from
your land and livestock







Fertiliser - taking a well grounded approach

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Pastoral fertilisers - getting the NPKS recipe right for your pasture

Getting the most out of your pasture is all about choosing the fertiliser(s) best suited to your soils and applying it in the right quantity and time, for maximum uptake by plants and reduced environmental impact.

Four 'tried and trusted' pastoral fertiliser products

Superphosphate - New Zealand's most widely-used phosphate fertiliser.

Urea - suitable for all agriculture, horticulture and forestry farming systems.

Potassium chloride (Potash) - the main form of potassium used for pasture.

Granular Ammonium Sulphate (GAS) - the safest nitrogen fertiliser to mix with most non-superphosphate based fertilisers.

Superphosphate

Superphosphate contains sulphur in the readily-available form of sulphate for plants to take up. It is mainly used as a maintenance fertiliser, providing a pool of soil P to pasture. It is also ideal for pastoral development and arable/ horticultural situations where immediate responses are needed.

Urea/N-Protect

Urea is the most concentrated and cost-effective source of nitrogen (N). Urea is usually spread at rates of between 65-100kg/ha on pasture. To minimise leaching losses and increase efficient use of nitrogen, it is better to make several small to medium applications at intervals, rather than single, larger application. To reduce volatilisation losses, choose **N-Protect** during spring, summer and autumn.

Potassium chloride

Potassium chloride is a concentrated potassium source used for both capital and maintenance applications. Potassium chloride mixes well with other fertilisers. As potassium chloride has a high salt index, care must be taken to minimise the risk of germination injury, particularly if high rates are applied under dry soil conditions.

Granular Ammonium Sulphate

Granular ammonium sulphate is a soluble nitrogen fertiliser which also contains a high sulphur content. Granular ammonium sulphate is often blended with urea to produce Ammo 31 and Ammo 36 for spring application. Volatilisation of ammonia from ammonium sulphate is low. It is not suitable for forage brassica crops due to the high sulphur content.

Building soil fertility

You want to improve the fertility of your soil to maintain pasture and crop production. We want to help you achieve your goal by providing the nutrients your soil needs. The amount of nutrients required to grow grass or legume-based pastures on your farm will depend on how well your soils are developed.

What stage are your soils?

Untouched - your soils have had no nutrient or lime application so are most likely lacking in P, S and to a lesser extent K and some trace elements. Without the required nutrients these soils will not support productive grass/clover pastures.

Development - you're building up the soil's nutrient reserves and organic matter over time - most likely five to ten years. You'll be applying capital fertiliser rates and possibly lime initially and using your animals to recycle the nutrients. You can expect pasture production to increase with your improvement in organic matter and soil nutrient status.

Maintenance - you've got soil fertility to its optimum soil nutrient status. From here-on any increases in soil nutrient levels will result in only very small increases in production. You'll still need maintenance fertiliser, but only enough to replace the losses from the farm - milk, livestock leaving the farm, dung and urine in dairies, lane-ways, gateways, around hedges and troughs, plus the losses in soils.

**Right product.
Right time.
Right rate.
Right place.**



SUPERPHOSPHATE
- VARIES FROM LIGHT TO
DARK GREY DEPENDING
ON ROCK TYPE



**N-PROTECT® - UREASE
INHIBITOR COATING TO
REDUCE N-LOSS**



POTASSIUM CHLORIDE
- RED, PINK OR WHITE
GRANULES DEPENDING ON
ORIGIN



**GRANULAR AMMONIUM
SULPHATE**
- RANGES FROM WHITE TO
BROWN IN COLOUR

Cropping fertilisers - it's all in the mix

Fertiliser requirements can vary greatly depending upon crop type and soil properties. Compound and blended fertilisers are popular alternatives to separate fertiliser applications because of efficiency gains and ensuring crops have even access to nutrients.

COMPOUND fertiliser granules each contain a mix of the NPK nutrients.

BLENDED fertilisers have separate granules of different fertilisers.

Cropping fertiliser snapshot

Cropmaster DAP (Diammonium Phosphate)

A granular nitrogen and phosphate fertiliser. DAP is an alternative source of P if soil sulphate levels are high or S is not required. DAP has good spreading and flow characteristics. DAP is not compatible with superphosphate or magnesium oxide.

Cropmaster 15

Cropmaster 15 is a blend of DAP, potassium chloride and granular ammonium sulphate providing readily-available nutrients. Commonly used in cropping situations where potassium **IS** required.

Cropmaster 20

Cropmaster 20 is a 50:50 blend of DAP and granular ammonium sulphate. Commonly used in cropping situations where potassium is **NOT** required.

FERTILISER	CROP	USE	APPLICATION RATE	NOTE
Cropmaster® DAP	Arable	Planting fertiliser for field crops, green feed brassicas	90 - 200kg/ha	It is important to avoid seed contact. If drilling, use lower rate of less than 100kg/ha. If more required, then the balance should be broadcast.
	Horticulture		100 - 300kg/ha	
	Pasture	Maintenance fertiliser for sheep, beef and dairy farms	90 - 200kg/ha	
Cropmaster® 15	Arable/ Horticulture	Spring planting of cereals and legumes	180 - 375kg/ha	If direct drilling, lower these rates to less than 125kg/ha Cropmaster 15 for cereals.
	Pastoral	Boost pasture growth	125 - 250kg/ha	For hay and silage situations use Cropmaster 15 at 180 - 375kg/ha to allow for the heavier removal of nutrients by these crops.
Cropmaster® 20	Arable	Spring cereal sowing	180 - 375kg /ha	If direct drilling lower these rates to less than 125kg/ha for cereals.
		Autumn grass seed	125 - 200kg/ha	
		Sowing new grass	100 - 180kg/ha	
	Pastoral	Boost pasture growth	125 - 250kg/ha	
		Hay and silage paddocks at closing	150 - 300kg/ha	



CROPMASTER[®] 15
- COLOUR VARIES
DEPENDING ON
COMPONENT SOURCE



CROPMASTER[®] DAP
- COLOUR VARIES FROM
LIGHT BROWN TO
GREY/BLACK

Smarter Farming with N-Protect[®]

Sharemilker Adam Williamson recently switched to N-Protect as part of meeting his commitments in Synlait's Lead with Pride programme.

The programme's four pillars of best practice cover environment, milk quality, animal health and social responsibility, with a recent addition of emissions reductions, which has been a key driver in Adam's decision to switch from urea to N-Protect in the shoulder seasons.

Based in Culverden, North Canterbury, the family dairy farm milks 554 cows (peak) on 168 hectares (3.5 cows per hectare) of fully irrigated land. The decision to switch was easy for Adam as it worked with the farm's nutrient and greenhouse gas plans and it was the right thing to do.

"N-Protect ticks both boxes in reducing the amount of nitrogen applied (whilst maintaining production) and mitigating our greenhouse gas emissions while helping us meet the new requirements in the Lead with Pride programme."

From a sustainability perspective, N-Protect has enabled Adam to be more economically viable while environmentally mindful by reducing the risk of N-loss on average by 50% from volatilisation if 10mm of water doesn't fall within eight hours.

"Last milking season was our first-time using N-Protect and from a production point of view it has allowed us to maintain production while using less N," Adam says.

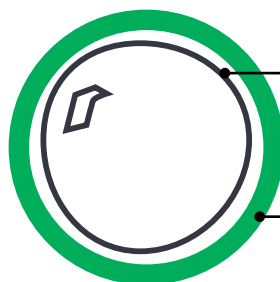
"We were able to decrease our N use from 230kg to 215kg of N per hectare and buy in half the feed while producing 250,000kg of milk solids, which is close to our production record."

"N use isn't going to get easier, but mitigation goes hand-in-hand with production, so the nutrient efficiency needs to result in profitability. N-Protect has allowed us to do that by producing more from less, ticking our enviro box, our supplier's box and our business box - it pays its way."

The plan to get further reductions this season is to use more N-Protect than urea, which means Adam can use 10% less N.

"Our Agri Manager Cherie has done our nutrient budget, which gets us to 188kg of N per hectare. As long as the irrigation remains available, we have more mitigation options and flexibility with using N-Protect instead of urea."

The efficiency gains in growing grass with N-Protect also makes application management easier allowing Adam to control when he applies rather than the weather dictate when. This means he can get N on three days before the cow's graze, so the grass is growing at the right time during his grazing cycle.



UREA GRANULE RELEASES NITROGEN FOR RAPID PLANT GROWTH

UREASE INHIBITOR COATING LIMITS NITROGEN LOST TO THE ATMOSPHERE AS GREENHOUSE GASES

N-PROTECT[®] - LIMITS N-LOSS FROM VOLATILISATION FOR GREATER PRODUCTION POTENTIAL AND LOWER ENVIRONMENTAL IMPACT

**“It has allowed
us to maintain
production while
using less N.”**



**What is the meaning of
the Fertmark logo?**

Fertmark certified products displaying a green tick meet the declared nutrient content and, if used correctly, do not pose hazards to food safety or animal welfare.

Advice you can count on

Ravensdown has more Certified Nutrient Management Advisors than any other company in New Zealand. So you can count on your agri manager to deliver qualified advice based on science and innovation.

Every agri manager is also able to call upon the expertise of our highly skilled and experienced agronomists and environmental consultants - which adds up to great advantage for your farming business.

We're here to help, so give your local agri manager a call or phone our Customer Centre on 0800 100 123.



Product catalogue



Key



Meets Fertmark quality assurance standards. For more information see page 2.



Contains a blend of products that are all Fertmark registered.



Contains a blend of some products that are Fertmark registered.



Available in bulk.



Available in bulk bags.



20kg bags.



25kg bags.



Products eligible for a rebate.



Nitrogen products mixed with super-based products have the propensity to become lumpy even in relatively short periods of time. Applications should take place promptly. Segregation may occur when mixed with product with differences of particle size. This should be considered by the applicator when determining the appropriate bout width for spreading product blends of this nature and Ravensdown recommends the equipment and the operation thereof should at least meet the Spreadmark minimum performance.

Product catalogue

Nitrogen

PRODUCT	N	P	K	S	Mg	Ca								
N-Protect®	45.9	-	-	-	-	-	///							
Urea	46.0	-	-	-	-	-	///							
Nitro S®	29.9	-	-	31.5	-	-								
N-Protect S®	29.8	-	-	31.5	-	-								
Granular Ammonium Sulphate	20.5	-	-	24.0	-	-	///							
N-Control™ 75 (controlled release urea)	44.0	-	-	-	-	-								
Calcium Ammonium Nitrate (CAN)	27.0	-	-	-	-	8.0								
Ureammopot	26.0	-	10.0	10.2	-	-								
Ammo 31™	30.7	-	-	14.4	-	-								
Ammo 36™	35.8	-	-	9.6	-	-								
Flexi-N® Lift	6.5	7.7	-	9.4	0.8	17.0								
Flexi-N® Complete	6.9	6.4	6.5	7.8	0.8	14.2								
Flexi-N® High S	6.9	7.2	-	12.8	0.8	15.9								
Flexi-N® Replace	8.6	4.5	15.0	5.5	1.0	10.0								
Flexi-N® High N	12.5	6.4	-	7.8	1.5	14.2								
Flexi-N® Equal	8.0	7.3	-	9.0	1.0	16.3								
Flexi-N® Drive	10.6	6.8	-	8.3	1.3	15.1								
Lawn Fertiliser	14.9	2.3	-	20.6	-	5.0								

Magnesium

PRODUCT	N	P	K	S	Mg	Ca								
Magnesium Oxide	-	-	-	-	40.0	-								
Esta® Kieserite (Granular) Bulk	-	-	-	20.0	15.0	-	///							
15% Potash Serpentine Super	-	5.7	7.5	7.3	4.7	12.8								
20% Potash Serpentine Super	-	5.4	10.0	6.9	4.4	12.0								
30% Potash Serpentine Super	-	4.7	15.0	6.0	3.9	10.5								
Super Mag N	6.9	5.7	-	7.3	4.7	12.8								
15% Potash Super Mag N	5.9	4.8	7.5	6.2	4.0	10.8								
20% Potash Super Mag N	5.5	4.6	10.0	5.8	3.7	10.2								
Dolomite	-	-	-	-	11.0	23.0								

Product catalogue

Potassium

PRODUCT	N	P	K	S	Mg	Ca							
Potassium Chloride	-	-	50.0	-	-	-							
Granular Sulphate of Potash	-	-	41.5	18.0	-	-							
10% Potash Super	-	8.1	5.0	9.9	-	18.0							
15% Potash Super	-	7.7	7.5	9.4	-	17.0							
20% Potash Super	-	7.2	10.0	8.8	-	16.0							
30% Potash Super	-	6.3	15.0	7.7	-	14.0							
40% Potash Super	-	5.4	20.0	6.6	-	12.0							
50% Potash Super	-	4.5	25.0	5.5	-	10.0							
15% Potash Sulphur Super	-	6.8	7.5	17.5	-	15.3							
20% Potash Sulphur Super	-	6.4	10.0	16.4	-	14.4							
30% Potash Sulphur Super	-	5.6	15.0	14.4	-	12.6							

Phosphate

PRODUCT	N	P	K	S	Mg	Ca							
Superphosphate	-	9.0	-	11.0	-	20.0							
Serpentine Super / Drilling Super	-	6.7	-	8.6	5.5	15.0							
Triple Super	-	20.5	-	1.0	-	16.0							
Sechura RPR (North Island only)	-	10.7	-	-	-	28.0							
Lime Reverted Super (North Island only)	-	6.8	-	8.3	-	24.0							
Ravensdown Dicalcic Phosphate	-	4.1	-	5.1	-	28.6							
Dicalcic High S	-	4.2	-	9.3	-	26.9							
Cobalt Super 1.5kg (Cobalt Sulphate is 21% Co)	-	9.0	-	11.0	-	20.0							
Molybdenum Super 300g	-	9.0	-	11.0	-	20.0							
Molybdenum Super 500g	-	9.0	-	11.0	-	20.0							
Selenium Super 2kg	-	9.0	-	11.0	-	20.0							
Moly Sulphur Super 30 300g	-	7.0	-	30.1	-	16.0							
Moly Sulphur Super 30 500g	-	7.0	-	30.1	-	16.0							

Product catalogue

NPK Blends

PRODUCT	N	P	K	S	Mg	Ca								
Dairy Pasture Boost 4	4.1	6.5	4.0	12.7	-	14.4	▲					R		
Dairy Pasture Boost 6	4.1	6.1	6.0	12.3	-	13.6	▲					R		
Dairy Pasture Boost 10	4.1	5.4	10.0	11.4	-	12.0	▲					R		
Dairy Pasture Boost 12	4.1	5.0	12.0	11.0	-	11.2	▲					R		
Ravensdown Pasture 6	5.6	5.5	6.0	13.2	-	12.1	▲					R		
Higro 7-5-7	6.4	5.0	6.5	13.6	-	11.2	▲					R		
Lucerne Mix + TE	-	5.5	14.7	13.2	-	12.4	△					R		
Citrus 14-3-5	13.5	3.0	5.6	7.1	4.5	3.5	△					R		
Citrus 19-2-0	18.9	2.0	-	4.1	3.0	7.2	△					R		

Cropmaster® DAP Based

PRODUCT	N	P	K	S	Mg	Ca								
Cropmaster® DAP	17.6	20.0	-	1.0	-	-						R		
DAP 13 S	10.6	14.8	-	12.6	-	6.4	▲					R		
Cropmaster® 11	10.6	12.0	20.0	0.6	-	-	▲					R		
Cropmaster® 13	12.3	14.0	15.0	0.7	-	-	▲					R		
Cropmaster® 15	15.0	10.0	10.0	7.7	-	-	▲					R		
Cropmaster® 16 High K Bulk	15.4	7.0	22.5	0.4	-	-	▲					R		
Cropmaster® 20	19.1	10.0	-	12.5	-	-	▲					R		
Cropmaster® Brassica mix	14.1	16.0	10.0	0.8	-	-	▲					R		
Cropmaster® Brassica + Boron Blend	13.6	15.4	9.5	0.8	-	-	△					R		

Ammo-Phos® MAP Based

PRODUCT	N	P	K	S	Mg	Ca								
Ammo-Phos® MAP	10.0	22.0	-	1.0	-	-						R		
Ammo-Phos® / Hycrop 7-15-15	7.0	15.4	15.0	0.7	-	-	▲					R		
Ammo-Phos® / Hycrop 9-19-7	8.5	18.7	7.5	0.9	-	-	▲					R		

Product catalogue

Sulphur Fortified

PRODUCT	N	P	K	S	Mg	Ca							
Sulphur Super 15	-	8.6	-	14.8	-	19.2	▲						
Sulphur Super 20	-	8.0	-	20.6	-	18.0	▲						
Sulphur Super 30	-	7.0	-	30.1	-	16.0	▲						
Sulphur 90	-	-	-	90.0	-	-							

Potash Gold

PRODUCT	N	P	K	S	Mg	Ca							
Potash Gold 7-15-13	7.0	15.4	12.5	6.1	-	-	▲						
35% Potash Gold Super 0-6-15	-	5.9	14.5	13.5	-	13.0	▲						
Potash Gold 15-10-10	14.3	10.0	9.5	11.1	-	-	▲						
Potash Gold 14-7-14	14.3	7.0	14.5	6.7	-	2.4	▲						

Other Products

PRODUCT	N	P	K	S	Mg	Ca							
Gypsum (Calcium Sulphate)	-	-	-	18.0	-	23.3							
Avocado Regular Mix + TE	9.6	4.2	13.7	9.9	2.7	3.0	△						

Essential nutrients

Nutrients are required in different ways by plants and animals. The following explains how plants and animals use each nutrient.

NUTRIENT	PLANTS	ANIMALS
Nitrogen (N)	Nitrogen is required for the synthesis of all proteins, enzymes and cell membranes in plants and also for making chlorophyll (the colouring matter in green plants which explains why your pasture goes greener when you apply N).	Nitrogen is required for the synthesis of all proteins, enzymes and cell membranes in animals.
Phosphorus (P)	Phosphorus is essential because it is involved in energy transfers. It is also required by cell nuclei and membranes in cell division (plant growth) and for photosynthesis and respiration.	P is required for bones and teeth as well as for cell membranes, nerve fibres and muscle function.
Potassium (K)	Potassium is used for carbohydrate (sugar) and N metabolism, protein synthesis, enzyme activity and the opening and closing of the stomata (little holes in leaf surfaces) that regulate water use by the plant. K also helps maintain cell turgor (keeps the plant standing up) and balances electric charge during uptake of anions (negative charged ions like P, S etc).	K is important for muscle contraction, nerve impulse transmission, kidney function, electrolyte and water balance.
Sulphur (S)	Plants use sulphur to produce S-containing amino acids, for proteolytic enzymes, in some vitamins and for oil production (in plants like mustard, onions, flax and soya beans).	S is used for the synthesis of all proteins including wool, is a component of B vitamins and is involved with enzymes that metabolise carbohydrates.
Calcium (Ca)	Calcium is used in cell membranes for enzyme activity, protein synthesis and ion uptake.	Ca is used in bone and teeth formation and along with P for nerve function, muscle contraction, blood clotting and enzyme activity.
Magnesium (Mg)	Magnesium is very important for plants as it is used in chlorophyll formation, protein synthesis and all energy transformations.	Mg is important in the metabolism of carbohydrates, lipids (fats), proteins, in nerve activity and muscle contraction.
Sodium (Na)	There is no known function for sodium, even though plants take up Na readily.	Na has a key role in the transmission of nerve impulses - which explains why Na helps relieve muscle cramps after vigorous exercise!

Trace elements

TRACE ELEMENTS	PLANTS	ANIMALS
Boron (B)	Boron is used for carbohydrates, sugar, metabolism and transport round the plant, inhibition of starch formation and for nucleic acid metabolism. Susceptible plants include brassicas and legumes.	There is no known function for B in animals.
Chloride (Cl)	Chloride is an element used for photosynthesis.	Cl is used for electrolyte balance, Na transport in the kidneys and Na, Mg and Ca transport through the rumen wall.
Copper (Cu)	Copper is a constituent of proteins and is used in photosynthesis, respiration and nitrogen fixation.	Cu is used to prevent ill-thrift, sway back, bone problems and poor reproduction.

Trace elements continued

TRACE ELEMENTS	PLANTS	ANIMALS
Cobalt (Co)	Cobalt has no known function in pasture or crop plants.	Required by rhizobia (micro-organisms in the soil and clover nodules) for N fixation and by other micro-organisms for making vitamin B12.
Iron (Fe)	Iron is important for chlorophyll production (sometimes plants go greener after Fe application) and is required for enzymes involved in photosynthesis and respiration.	Fe is an important constituent of blood (haemoglobin and myoglobin), respiration and enzyme function.
Manganese (Mn)	Plants use manganese for enzyme activity involved in carbohydrate metabolism, for making fatty acids and in energy transfers during photosynthesis.	Mn is used for the synthesis of bone and teeth, steroid hormones, glucose synthesis and utilisation.
Molybdenum (Mo)	Molybdenum is important for the rhizobia in clover nodules to assist in N fixation and for plants to use N. This is why a clover-only test for this element is recommended.	Mo is important for some enzyme activity and for Fe storage in tissues.
Selenium (Se)	There is no known function for selenium in plants even though they take up Se readily.	Se is used in enzymes that protect tissues from oxidation damage (anti-oxidant) and also for general cellular activity.
Zinc (Zn)	Zinc is important for enzyme activity associated with carbohydrate metabolism.	Important for enzyme activity associated with carbohydrate, metabolism and also for protein synthesis.

Guide to trace element mixing and application

COMMON NAME(S)	TRACE ELEMENT ADDITIVE	% OF THE ELEMENT IN THE ADDITIVE	STANDARD RATE OF THE ADDITION OF THE ADDITIVE PER TONNE OF FERTILISER	APPLICATION RATE OF THE FERTILISER AND ADDITIVE TO THE SOIL	APPLICATION RATE OF THE ADDITIVE TO THE SOIL	APPLICATION RATE OF THE ELEMENT TO THE SOIL
Cobalt	Cobalt Sulphate	21% Cobalt	1.5kg of Cobalt Sulphate	250kg/ha of the mixture	0.375kg/ha of Cobalt Sulphate	0.079kg/ha of Cobalt
Selenium Prill (Selprill Double)	Sodium Selenate	2% Selenium	2.0kg of Selenium Prills	250kg/ha of the mixture	0.5kg/ha of Selenium Prills	0.01kg/ha of Selenium
Molybdenum	Sodium Molybdate	38.8% Molybdenum	0.3kg of Sodium Molybdate	250kg/ha of the mixture	0.075kg/ha of Sodium Molybdate	0.029kg/ha of Molybdenum
Copper	Copper Sulphate	25% Copper	20kg Copper Sulphate	250kg/ha of the mixture	5kg/ha of Copper Sulphate	1.25kg/ha of Copper
Boron Fertiliser, Borate 46	Sodium Borate	15% Boron	40kg of Sodium Borate	250kg/ha of the mixture	10kg/ha of Sodium Borate	1.5kg/ha of Boron

Animal welfare - cautions on fertiliser use

Fluorosis

Phosphate fertilisers contain fluoride. Avoid grazing topdressed pasture for 21 days after topdressing or until 25mm of rain has fallen, to minimise any risk of stock deaths due to fluoride toxicity.

Potassium and hypomagnesaemia

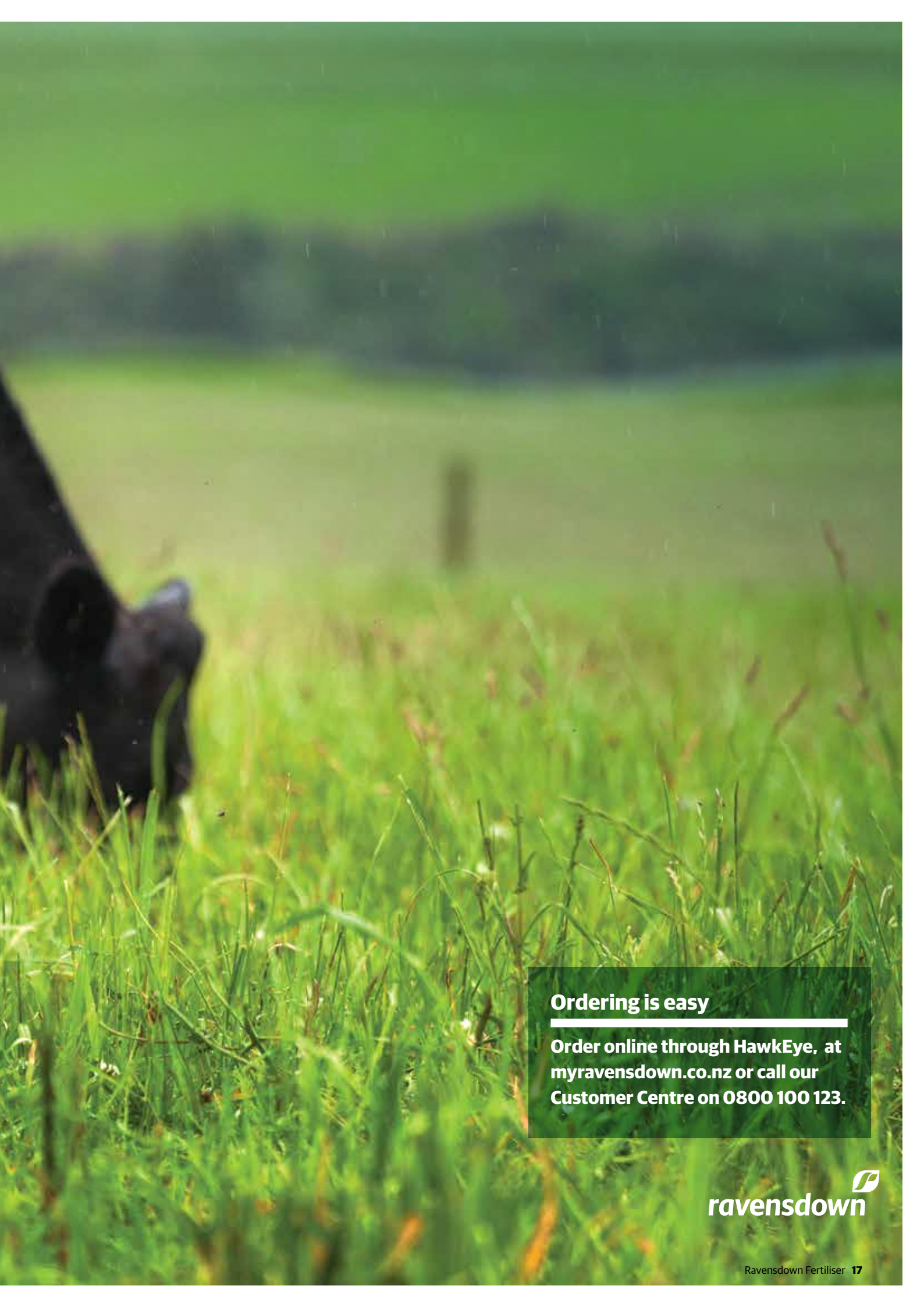
Applying potassium to pasture in late winter/spring, particularly around lambing or calving time, can contribute to grass tetany (hypomagnesaemia) in pregnant and lactating stock. To avoid this risk, do not apply potassium during this period.

Lime and hypocalcaemia

Applying lime to pasture in late autumn/winter, particularly in the last three months of pregnancy can contribute to milk fever (hypocalcaemia) in lactating stock. To avoid this risk, do not apply lime during this period.

Fluoride and cadmium levels

All Ravensdown products contain less than 270g fluoride and 280mg cadmium per kg phosphorus.



Ordering is easy

Order online through HawkEye, at myravensdown.co.nz or call our Customer Centre on 0800 100 123.


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