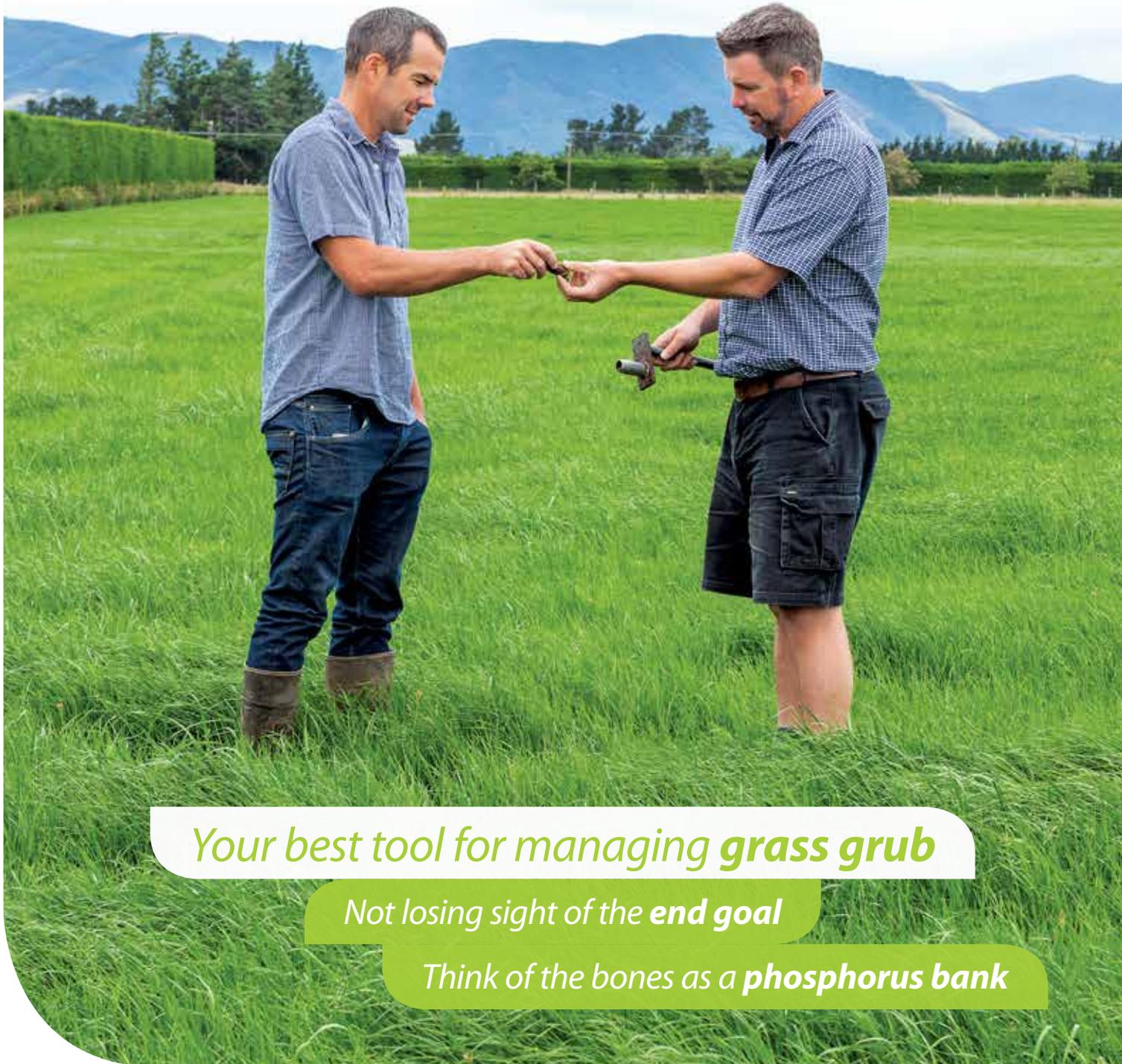


PGG Wrightson

rural diary

PROFITABLE PERFORMANCE FARMING

South Island | February 2018



*Your best tool for managing **grass grub***

*Not losing sight of the **end goal***

*Think of the bones as a **phosphorus bank***

Helping grow the country

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Welcome

I hope you have all had a good start to the year; it is hard to believe we are already in the second month of 2018. The summer months have seen many parts of the country challenged with weather conditions, from being too dry in some areas, and others with heavy rainfall resulting in flooding.



We have certainly seen a lot less hay and silage made so far this summer and with minimal excess pasture, the importance of planning for the autumn agronomy window is a key focus in this month's edition. The PGG Wrightson Seeds team explains key factors when selecting perennial ryegrass and Pioneer® provides tips for a successful maize silage harvest.

We visit Cameron Henderson in Canterbury to discuss his grass grub control programme. PGG Wrightson Technical Field Representative, Kaleb Bolton, has worked with him for many years now and following Kaleb's recommendations to incorporate the use of suSCon® Green into his pasture maintenance programme, Cameron has seen positive results.

On the animal health front, our Vet, Andrew Dowling, reminds us to keep the end goal in sight when it comes to tugging.

Enjoy the read.

Richard Weightman
National Sales Manager Rural Supplies – PGG Wrightson

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Cover: Cameron Henderson, owner of Henderson Farms in Canterbury (left), talks with PGG Wrightson Technical Field Representative, Kaleb Bolton.

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Cameron Henderson, owner of Henderson Farms in Canterbury (left), talks with PGG Wrightson Technical Field Representative, Kaleb Bolton about suSCon Green.

Your best tool for managing grass grub

Cameron Henderson converted from drystock to dairy in 2011. The light, free draining soils and dry conditions on his Canterbury farm were the perfect conditions for grass grub, and any new pasture was quickly devastated.

On the advice of Kaleb Bolton, PGG Wrightson Technical Field Representative, Cameron added Nufarm's controlled release insecticide granule, suSCon® Green, to his agchem programme. Five years on, he's seeing effective control of grass grub numbers and increased grass growth.

Cameron farms in Oxford, milking 700 cows on 231 ha. In the middle of the Canterbury Plains, the farm is very flat. Pasture is predominantly ryegrass with clover, with a mix of Samson ryegrass, Savvy cocksfoot and clover in the drier areas.

With the conversion, much of the farm has been cultivated and re-grassed over the past six years. During the process, Cameron says he's relied on advice from Kaleb, whom he describes as much more knowledgeable on cropping than he is.

“Kaleb's great to work with. His support in the cropping area has been invaluable. We especially appreciate his product knowledge and his ability to make recommendations based on prior experience.”

Grass grub is a common pest in Canterbury; their effects accentuated by warm, dry periods which limit the growth of pasture but allow continued development of the grass grub larvae. The larvae are at their most destructive during the vital pasture renewal periods, feeding on live plant roots of grasses and clovers¹.

Cameron believes that cultivation destroyed whatever grass grub population inhibitors were in the soil, contributing to a real resurgence of the pest in the drought conditions of 2014.

“We not only stirred them up, we gave them some good feed too. Of course, our dry conditions and light soils contributed to a ‘perfect storm’ situation.”

Kaleb recommended suSCon Green to Cameron. “suSCon Green is a slow-release granule, providing long-term control of grass grub and ensuring good establishment of seedlings” he explains. “The long life of the granules protects crops from both first and second year larvae damage, which occurs at very different times of the year.

“Other products on the market don't give long-term residual control.”

The label rate for suSCon Green in new pasture is 15 kg per ha and it is only recommended for drilling in 15 cm rows. This ensures precise placement of the granules in the drill row near the seed, which in turn gives the best level of insecticide protection. suSCon Green can be mixed with seed or applied at drilling via a separate insecticide box.

Cameron re-grasses approximately 15 percent of his farm annually in spring on an eight-year rotation. He drills new seed with suSCon Green, using the product only once per rotation. “We've been following this programme for five years now and the results are definitely positive”, Cameron confirms. “We're certainly getting a good three years protection before seeing grubs come through. Even then, the granules prevent a massive resurgence of grass grub, instead allowing a manageable build-up over time.

“suSCon Green is not a cure for grass grub but it's an effective management tool.

“I'd especially recommend suSCon Green to farmers who are cultivating out of old pasture species, particularly on light soils. It makes a big difference.”

*suSCon Green is a registered trademark of Nufarm Technologies USA Pty Ltd.

¹<https://www.nufarm.com/assets/35529/1/SuSConGreenbrochure.pdf>

Choosing a top performing perennial ryegrass

Over ten years of investment in breeding, research and development has paid off with recently released Platform AR37 jumping straight to the top of this year's National Forage Variety Trial (NFVT) summary.

Nick Browning, Northland dairy farmer, compared Platform AR37 to Expo AR37 and found Platform AR37 to be a strong establishing grass with very good tiller density. He has been impressed with Platform's cool season growth in a challenging wet year. Although Nick's paddocks were late autumn planted, the ryegrass has provided four grazings over the winter and early spring.

Similar to Nick, Waikato mixed sheep, beef and cropping farmer Donald Stobie says Platform AR37 established well and has handled the extremely wet winter. Donald's paddock was readily grazed by lambs and produced as much feed as Excess AR37. Both Donald and Nick are interested to see how Platform AR37 handles the summer and if it does as well as trials suggest, they will be looking for seeds to plant following their summer crops.

Platform AR37 is a dense finely leaved cultivar with a late heading date (more than 12 days) fitting between mid-season Excess and very late Base. "Parentage for Platform AR37 includes a combination

of elite New Zealand and North-West Spanish genetics to provide both spring and cool season growth when it is needed most" says plant breeder Tom Lyons.

The relationship between Platform and New Zealand's premium AR37 endophyte has also been a major focus in the development of this new cultivar. Selection for endophyte compatibility and stability enables the new ryegrass to consistently deliver insect protection for major pests including black beetle, Argentine stem weevil larvae, pasture mealy bug, root aphid and porina.

The extensive breeding, selection and testing by PGG Wrightson Seeds plant breeders and agronomists have delivered two other top performing perennial ryegrasses, Base AR37 and Excess AR37. Along with Platform AR37, these three perennial ryegrasses all feature in the top five of this year's independent NFVT results (see Graph 1 below). "It's great to be able to offer New Zealand farmers top performing perennial ryegrasses in each of the main heading date groups; mid-season, late and very late" says

PGG Wrightson Seeds National Sales and Marketing Manager, Hugh McDonald.

Excess AR37 and Base AR37 have also performed strongly in various regional NFVT summaries¹. In the Upper North Island, Excess AR37 has demonstrated its suitability for this challenging environment while Base AR37 continues to produce outstanding results in the Canterbury (upper South Island) summary.

Having the right balance of paddocks with different heading dates is critical to maintaining feed quality and matching feed supply to demand. The heading date of a ryegrass cultivar is when 10 percent of plants have emerged seed heads. Dates are defined relative to the cultivar Nui heading at day zero, which is approximately 22 October. Mid-season ryegrasses such as Excess AR37 (more than seven days) and Rely (zero days later than Nui) offer an earlier 'spring flush' in the six weeks prior to heading, while later heading varieties such as Base AR37 (more than 22 days) hold quality providing leafy high quality feed later in spring.

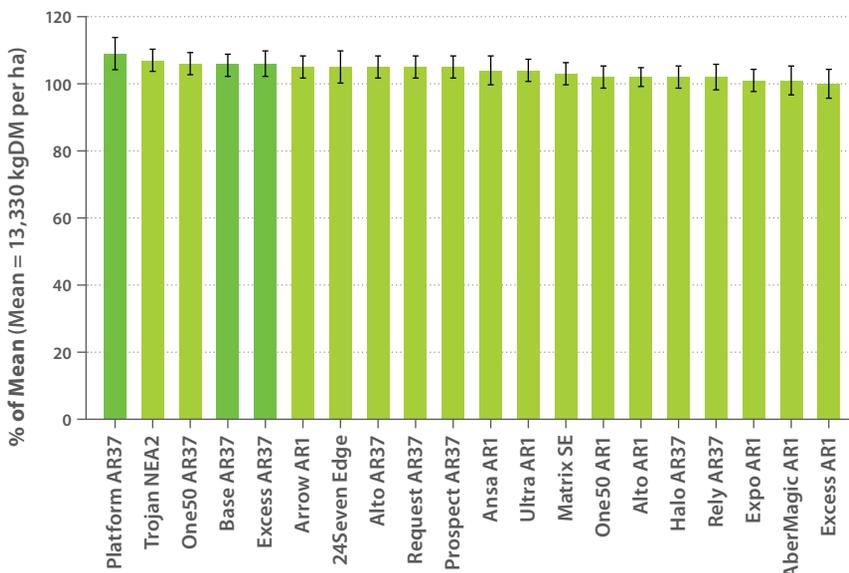
It is recommended to sow ryegrass cultivars with a range of different heading dates to spread time of heading and reduce the overall loss of summer quality. Sowing ryegrasses with different heading dates in separate paddocks is recommended along with planting no more than 50 percent of the farm in late/very late heading cultivars to avoid early spring feed pinches.

For more information on PGG Wrightson Seeds' range of forage grasses, contact your local PGG Wrightson Technical Field Representative.

ARTICLE SUPPLIED BY PGG WRIGHTSON SEEDS

¹NFVT Perennial Ryegrass Summary: <http://www.nzpbra.org/wp-content/uploads/2016-perennial-ryegrass-graphs.pdf>

Graph 1: NFVT Perennial Ryegrass: All New Zealand Trials (Total Yield as Percentage of Mean: 13,330 kgDM per ha)



Protecting your winter feed

Manuka beetle (Pyronota festiva) is an insect pest of pasture and white clover in several areas around New Zealand.

The larvae of this pest lives in the soil, where it feeds on plant roots, causing damage to the root structure and reducing pasture production. Larval feeding can eventually lead to plant death and weed ingress as the pasture sward is opened up.

Damage occurs in patches in pasture, commonly in areas close to native bush in Taranaki, Hawke's Bay, Otago, Southland and the Canterbury high country. More severe damage occurs on the West Coast of the South Island, on land that has been developed. This land development is carried out as two separate processes: 'hump and hollow,' which is extensive land contouring, and 'flipping', which is a process of deep soil inversion and mixing to a depth of 2-3 metres. Both land development processes allow for drainage of water, which in turn has created an ideal habitat for the native manuka beetle.

A Sustainable Farming Fund research project was completed over four years, to investigate control options for manuka beetle on the West Coast. It was a joint project with local private farmers, Landcorp Farming and AgResearch. Most of the field work was completed by Richard Townsend from AgResearch and myself, while I was employed by Landcorp Farming. One trial looked at alternative pasture species for manuka beetle control, which also contributed to my Master of Science thesis in Plant Protection.

The number of larvae needed to cause damage is completely dependent on soil type. In developed soils, manuka beetle numbers can be high (up to 1,300 per square metre). Populations greater than an average of 10 larvae per spade square (350 larvae per square metre) cause economically significant damage. Damage initially appears as yellowed, stressed areas of pasture. These damaged areas are easily pulled from the ground during stock grazing due to the lack of plant roots caused by larval feeding. The damaged patches may feel soft underfoot.



Jessica Dunbar, PGG Wrightson Technical Specialist Soil Science (right), collecting larvae from damaged pasture at Pamu Farms of New Zealand, Cape Foulwind Farm, with farmer Paul Hateley.



Manuka beetle feeding on grass roots. Photo supplied by Richard Townsend.

The adult beetles are present for several weeks in late spring/early summer. Timing can vary in different regions and at different altitudes. Adult beetles burrow in the soil and lay their eggs in November and December. As they grow, they pass through three larval growth stages (instars), and development from egg to adult usually takes one year.

The larvae are C-shaped when relaxed, are creamy white in colour and have a light tan head. They can be easily mistaken as grass grub larvae, but are typically half the size of grass grub larvae when both species are in their third instar stage.

Awareness and early recognition of damage and larval numbers help avoid severe pasture loss and prolong pasture persistence. Larvae are usually found in the root zone of the plants, but may be deeper in the soil under very dry conditions (up to 150 mm). In areas where you think grubs may be present, dig spade samples from mid-February to a depth of 150 mm and hand sort soil to find larvae. Take at least 10 spades per paddock.

Determining the number of larvae present and the time of year that larvae are actively feeding on pasture roots helps to assess whether chemical control is needed and gives an indication of the correct time to apply insecticide. The third instar does the most feeding damage and if relying on chemical control, it is important to apply chemical at the correct time when third instar larvae are feeding on roots in the top 8 cm of soil. Timely chemical control normally occurs in April to early May on the West Coast. If chemical control is undertaken late May to July, considerable pasture damage would typically have already occurred.

For more information about controlling insect pests, ask your local PGG Wrightson Technical Field Representative to take a look at your paddock and provide advice on how to achieve a clean, productive pasture on your farm.



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ARTICLE WRITTEN IN CONJUNCTION WITH RICHARD TOWNSEND, RESEARCH ASSOCIATE – ENTOMOLOGY, AGRESEARCH



Farmer Sam Lovelock (left) with Blair Murdoch, PGG Wrightson Technical Field Representative.

Breaking some of the cocksfoot stereotypes

Savvy cocksfoot has been proving itself beyond the typical cocksfoot stereotype with its response and high performance under the use of irrigation and nitrogen.

Traditionally used in sheep, cattle and dry stock systems, Savvy cocksfoot is being used with legumes in mixes for intensive cattle grazing under irrigation. Savvy's inclusion in a ryegrass mix for summer dry dairy environments is also showing particular strengths in late spring and summer under these tougher conditions.

Sam Lovelock, Manager of Paritea Dairy Farm, Eyrewell, has been impressed to see what Savvy has been able to provide to their pasture mixes on their stoney light soils.

Paritea is part of the Ngāi Tahu farming operation located on the north bank of the Waimakariri River, milking 1,085 cows on 353 effective hectares under pivot irrigation. Their soils have relatively low water-holding capacity and even with irrigation there was a need to consider alternative pasture species that would hold better in the often hot, windy Canterbury summer, or if water restrictions were to come on through the summer months.

The development of Paritea Farm has occurred over the past five to six years, with the land area previously a pine tree plantation for 25 years. Coming out of trees, it had a low fertiliser history and did not have a lot of organic matter. Through the development phase, the fertility has built up. Current soil tests show a pH of 6.1, and Olsen P of 20-24. Annually, there is about 273 units of N applied across the farm per hectare as well as maintenance of phosphorus and sulphur where needed.

Sam has 8 ha of a Savvy cocksfoot perennial mix that contains 7 kg of Savvy cocksfoot, 10 kg of ONE⁵⁰ AR37 diploid perennial

ryegrass, 3 kg of Superstrike Tribute white clover and 3 kg of Tonic plantain per hectare. This mix was spring sown ex older grass paddocks that had not performed that well when converted out of trees, and were at the end of a pivot where watering is not as consistent as it could be. The new mix is just over two years old and Sam has been seeing the Savvy performing well, with it being "in the top third of paddock performance on the farm". It is roughly growing 14-14.5 T DM annually with an average across the farm of 13.5 T DM per ha.

The grazing of the Savvy mixed pastures requires no special management. They are grazed in the round just like all the other paddocks. Sam does not have a set round. He monitors all their paddocks' growth and tries to get in the paddocks at a pre-grazing mass of 2,800 kg DM per ha.

"The cows do a great job grazing it. It's very palatable, grazed cleanly and the stock don't leave a lot behind" says Sam.

Sam's key tip to managing a pasture with Savvy in the mix is "treat it like a normal pasture, hit residuals and don't let it get too long". He does not see a lot of seed head in the paddock, as long as he hits his residuals post grazing. "The pasture really goes well in November with moisture and warmth. It gets very bulky".

For more information about how Savvy cocksfoot can fit in to your farming system, contact your local PGG Wrightson Technical Field Representative.

ARTICLE SUPPLIED BY AGRICOM



Kale treated with Transform.

Aphid control in forage brassicas

Aphids can cause significant damage to your forage brassicas.

Populations of both the cabbage grey aphid and green peach aphid damage your crop by sucking plant sap. The resulting yellowing and wilting reduces growth rates. Aphids also transmit plant viruses in brassicas and their feeding points provide entry wounds for diseases which can severely damage plants or even kill large areas of the crop.

Ideally your first line of defense at this time of the season is a population of beneficial insects, providing natural protection against aphids, white butterfly and diamondback moth caterpillars. Species such as brown lacewing, ladybird beetles, hoverfly, parasitic wasps and predatory mites collectively play an important role in protecting your brassica crop from aphid flare ups and damage through until grazing. Monitor your crop closely for both pests and beneficial insects and if aphid populations do flare up and require treatment, use an aphicide with minimal impact on beneficial insects such as Transform™ from Dow AgroSciences.

Transform is a systemic insecticide that moves upwards and outwards via the xylem to protect new untreated growth, an important benefit during the main growth season. Transform also has translaminar activity forming a reservoir inside the leaf that resists wash-off and provides extended aphid control for up to 21 days. After application, aphids show symptoms from Transform and feeding ceases within minutes. Affected aphids fall off treated plants over the following day or so.

Transform has a strong environmental and toxicology profile, providing a high level of safety for both ground and aerial based applicators. Only minimal protective equipment is required, specifically overalls, water-resistant work boots,

gloves and a washable hat. Use of a face shield or goggles is recommended when measuring and mixing. The use of a respirator is not a requirement.

Transform is compatible with most commonly used crop protection products used in forage brassicas and can be applied as a tank mix with Sparta™ insecticide for “best in class” control of diamondback moth, white butterfly, looper caterpillars and leafminer. Always read the updated version of the Transform product label for further guidelines on timing and use.

Consult your local PGG Wrightson Technical Field Representative if summer pests are causing concerns in your forage brassicas.

ARTICLE SUPPLIED BY DOWDUPONT AGRICULTURE DIVISION



Cabbage grey aphid infestation.

Super spreader delivers for forage brassica applications

The benefits Du-Wett® consistently deliver to horticultural spray applications are now being realised by farmers and spraying contractors responsible for insect pest management in forage brassicas and other agricultural crops.

Gilchrist Brothers Ltd is an agricultural contracting business specialising in broad acre cultivation, precision planting, agronomy services and chemical application. Located in the Waimakariri district, the contractor has seen the benefits of using Du-Wett in its spraying services. Peter Gilchrist comments: "As an agricultural spraying contractor there is high pressure to service a lot of clients in a very small window. Being completely ruled by the weather, you are always looking for opportunities to become more efficient and provide the best service possible. Du-Wett allows us to do this by giving better results with superior retention of spray droplets on the target crop. Forage kale is a great example, a large leafy crop. Du-Wett's super spreading ability for insecticides is excellent for systemic products. A win for us and a win for the client".

Developed by Etec, Du-Wett super spreader has been a key surfactant used with crop protection products across New Zealand horticulture for many years.



Peter Gilchrist of Gilchrist Brothers Ltd.

"Du-Wett super spreader surfactant plays an important part in maximising the efficiency of insecticides applied to brassica crops" says Etec Crop Solutions Business Development Manager, Darren Faire.

Compared to conventional non-ionic surfactants Du-Wett offers a superior level of spray deposition.

The formulation allows more spray droplets to stay on the crop where you want them, rather than shatter and bounce off. Once on the brassica, Du-Wett reduces the surface tension of the spray droplet to provide unsurpassed coverage over the plant.

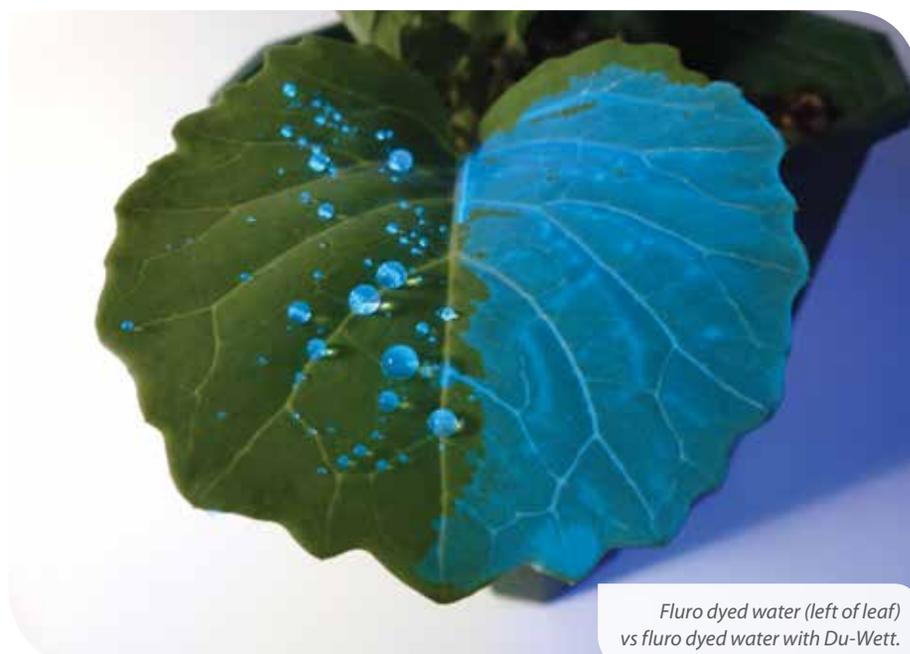
Etec trials have shown this enhanced spray coverage can be anywhere from 5 to 10 times greater than other surfactants. The nature of forage brassicas lends itself to the use of Du-Wett with insecticide applications as forage brassicas are notoriously difficult to get spray droplets to adhere to and get coverage over.

Lower water volumes are often able to be used to spray a crop. The savings in spray tank fills makes this an economically invaluable benefit of Du-Wett, particularly for spraying contractors and large-scale brassica farmers.

Contact your local PGG Wrightson Technical Field Representative to discuss options for effective control of insect pests.

ARTICLE SUPPLIED BY ETEC

Du-Wett is a registered trademark of Elliott Chemicals Ltd.



Fluro dyed water (left of leaf) vs fluro dyed water with Du-Wett.

Tips for a successful maize silage harvest

Using the right silage inoculant and following best-practice stack management guidelines are critical to ensure you optimise maize silage quality this autumn.

Why use an inoculant?

A good silage fermentation minimises the amount of silage nutrients and energy lost through shrinkage, spoilage and/or heating. To get a good fermentation, you need large numbers of the right bacteria, such as *Lactobacillus buchneri*.

When you apply a Pioneer® brand inoculant, millions of the right bacteria are distributed through the silage stack. These bacteria control the fermentation which results in:

- > Decreased dry matter and energy losses in the silage stack.
- > Reduced heating at feed-out time, maintaining valuable feed energy.
- > Increased milk or meat returns per tonne of maize silage fed.
- > Higher returns from your silage.

Choosing a silage inoculant

The Pioneer brand maize silage inoculant range includes products that improve fermentation and some that help keep silage cool at feed-out time. Table 1 (below) provides a guide to the inoculants recommended for this maize harvest.

Stack management checklist

To prepare for a maize silage harvest:

- > Clean out the residues of last year's silage from your bunker or pit.
- > Ensure you have enough tyres to cover the surface of the bunker or stack (tyres should be touching).
- > Order a Pioneer silage inoculant.
- > Order a quality silage cover and silage tape for joins and to patch holes.

- > Make sure you have sand, limestone or soil on hand to seal the edges of the silage cover.
- > Make a plan for rat and mice control.

For more information on Pioneer brand silage inoculant and preparing for your maize harvest, contact your local PGG Wrightson representative.

ARTICLE SUPPLIED BY
PIONEER BRAND PRODUCTS



Table 1: Pioneer inoculant selection for this autumn

Product solution:	Farm objectives:	Product benefits:
Pioneer® brand 11CFT Maize silage specific inoculant	<ul style="list-style-type: none"> > High per cow performance. > High feed intake. > Silage fed out up to one day in advance.* 	<ul style="list-style-type: none"> > Reduces fermentation and feed-out losses. > Improves fibre digestibility. > Allows for a reduction in concentrate and protein supplementation.
Pioneer® brand 11C33 Maize silage specific inoculant	<ul style="list-style-type: none"> > Less heating at feed-out time. > Silage fed out up to one day in advance.* 	<ul style="list-style-type: none"> > Improves fermentation quality. > Reduces heating at feed-out time.
Pioneer® brand 1132 Maize silage specific inoculant	<ul style="list-style-type: none"> > Silage heating is not normally an issue. > Maximising return on maize silage investment. 	<ul style="list-style-type: none"> > Helps improve fermentation, retain nutrient content and enhance maize silage digestibility. > Improves animal performance over Pioneer® brand 1174.
Pioneer® brand 1174 Multi-crop inoculant	<ul style="list-style-type: none"> > Lower cost product for cost-sensitive users. > Improving maize silage quality and milk return. 	<ul style="list-style-type: none"> > Helps improve fermentation, retain nutrient content and enhance silage digestibility.

*While 11C33 or 11CFT inoculated maize silage can be fed immediately after harvest, maximum aerobic stability gains will be made when it is fermented 30 days prior to feeding.

'MyBallance' set to change the way we do business

Farming is more complex than ever before so we need to make it as easy as possible for customers to do business.

That's why Ballance is undergoing a major digital transformation.

The launch of our new "MyBallance" platform is the most significant change in the way we interact with customers in our company's history.

GM Customer Experience and Marketing, Sheena Henderson, says MyBallance will provide farmers with a consistent, contextualized customer experience and a "360-degree view" of their Ballance relationship including online ordering, access to fertiliser plans and recommendations, farm maps, spreader integration, proof of application, shareholding and financial data.

"It's about making life easier to do business with Ballance on any device via any channel that you might interact with us as a customer, whether that be via a retail and merchant partner like PGG Wrightson, one of our Ballance nutrient specialists, by ringing our customer services team, or by dealing with us directly online yourself," Henderson explains.

MyBallance has been under development since June 2016 and will combine e-commerce features with rich multi-farm information to support analysis and decision-making.

"Every customer will have the opportunity to create an online Ballance account and interactive digital farm map which will be accessible from any device. They will be able to order directly from the map, see the status of their orders, and access their fertiliser plan for the year. They'll be able to see which paddocks they've applied nutrients to and get proof of application from the trucks that spread the fertiliser."

Benefits include providing farmers with better information about fertiliser application and volume, online access to fertiliser recommendations and plans, greater collaboration and delegation, and a better all-round customer experience.

"Merchants will have a user interface into the MyBallance solution so our customers can buy farm supplies and order fertiliser directly from their plan – all in one trip to the store, over the phone, or online. It will provide one version of the truth for you however you choose to engage with us."

Chief Information Officer Dave Scullin says the company has worked closely with a group of farmers to develop MyBallance so it's easy to use and meets the demands of today's modern farming environment.



MyBallance provides a flexible, transparent and easy way to order products online 24/7. Farmers can order straight off their fertiliser recommendation or farm map, place repeat orders, create a custom mix, and choose delivery dates or pick up locations.

Another key advantage is the ability to plan visually by using an accurate 3D map to "bring your farm to life".

MyBallance leverages the ArcGIS mapping platform from ESRI (a global leader in geo-spatial software) to calculate each farm's surface area and topography so farmers can make more accurate fertiliser purchases by taking into account the contour and any exclusion zones. "It's all about planning visually. You can draw boundaries to define your paddocks, management blocks and farm features," Scullin explains. "You can then use your map to record proof of application, view different soil types, and place fertiliser orders for blocks."

For more information, visit www.ballance.co.nz/myballance or have a chat with your local Ballance Nutrient Specialist or local PGG Wrightson Technical Field Representative.

**ARTICLE SUPPLIED BY
BALLANCE AGRI-NUTRIENTS**





Not losing sight of the end goal

Smart objectives at tugging are to have as many ewes pregnant with twins and a Body Condition Score (BCS) greater or equal to three.

Sheep are both highly fertile and fecund. Sudden stresses at or near tugging tend to result in more ewes not pregnant, while BCS tends to influence the number of foetuses and ewe survival. Ewes with a low BCS at tugging are less likely to survive to weaning (mainly being culled) and those that do survive wean fewer and lighter lambs than their counterparts who have a BCS greater or equal to three. Ewes with a BCS greater than four do not perform better and have a higher maintenance cost than ewes with a BCS of three.

The trace elements selenium and iodine affect tugging performance, so ensure both of these are supplemented if necessary. If the demand for these elements through pregnancy outweighs the supply or if interference by other factors is present (for example, goitrogenic compounds in brassicas), then longer term injectable supplementation may be more cost effective. Phosphorus deficiency can occur when grazing fodder beet crops. A diet check analysis is a quick tool to determine if supplementation is required.

Fungal toxins (for example, zearalenone and facial eczema), some plant

compounds and sudden changes of diet can also impact reproductive performance. For example, red clover and lucerne can both suppress ovulation with local conditions being important. Ask your local PGG Wrightson Technical Field Representative for advice on how to manage this impact.

Tugging often coincides with a high parasite worm challenge. The benefits of a pre-tup drench can be significant, particularly in young sheep and when managing barbers pole worm and liver fluke. Faecal egg counting, including a larval culture, a month prior to tugging provides good information on the need for drenching. Tugging hoggets and two toothers on pastures with a lower worm challenge also has benefits as drenches only remove the current worm burden.

The use of a ram harness to identify 80-90 percent of ewes mated in the first 10 days can be very useful when allocating feed at set stocking. Restricting the feed for the later lambing ewes helps to maintain spring grass covers.

Teasing can increase the number of hoggets pregnant in the first cycle and for

our out of season lambing, but for ewes in good BCS the benefits are limited.

Getting BCS right at tugging is important, contact your local PGG Wrightson Technical Field Representative for advice.



Andrew Dowling BVSc
Technical Manager – Animal Production
PGG Wrightson



**ARTICLE SPONSORED BY
AGRITRADE AND VETMED**



Preventing blowfly strike

Sheep are attractive to blowflies during the warm weather, while their skin is continually being wetted. These wet and warm conditions can lead to the development of fungal and bacterial infections in the wool.

Cyrex™ Liquid has a few modes of action for the prevention and treatment of blowfly strike in all breeds of sheep for up to 12 weeks, for the treatment of lice on long wool Merino sheep (wool greater than three months), and is also used to control lice on coarse wool breeds. These features are complemented with favourable operator and animal safety characteristics.

Cyrex Liquid contains 12.5 g per L of spinosad, the active ingredient in EXTINOSAD™ Liquid, and 500 g per L of cyromazine, the active ingredient found in VETRAZIN™. Spinosad provides knockdown control of blowflies, maggot and lice whereas Cyromazine provides up to 12 weeks protection against blowfly strike.

Spinosad is a member of the spinosyn chemical family. Upon contact or ingestion, spinosad causes involuntary and prolonged tremors in the nervous system of susceptible species, leading to irreversible paralysis and death. Its unique mode of action kills blowfly and lice, including strains resistant to Synthetic Pyrethroid (SP) compounds.

Spinosad has negligible human health risks or environmental toxicity.

Cyromazine is an insect growth regulator. It interferes with the lifecycle of susceptible insects by preventing the development of larval stages. Cyromazine has a different mode of action to some other Insect Growth Regulator (IGR) compounds, such as diflubenzuron and triflumuron. This different mode of action allows cyromazine to be effective against triflumuron or diflubenzuron-resistant blowflies^{1,2}.

For more information on a suitable blowfly strike prevention programme on your farm, contact your local PGG Wrightson Technical Field Representative.

ARTICLE SUPPLIED BY ELANCO ANIMAL HEALTH

¹ Levot, G. & Sales, N. Insect growth regulator cross-resistance studies in field- and laboratory selected strains of the Australian sheep blowfly (*Lucilia cuprina*). Australian Journal of Entomology (2004) 43: 374 – 377.

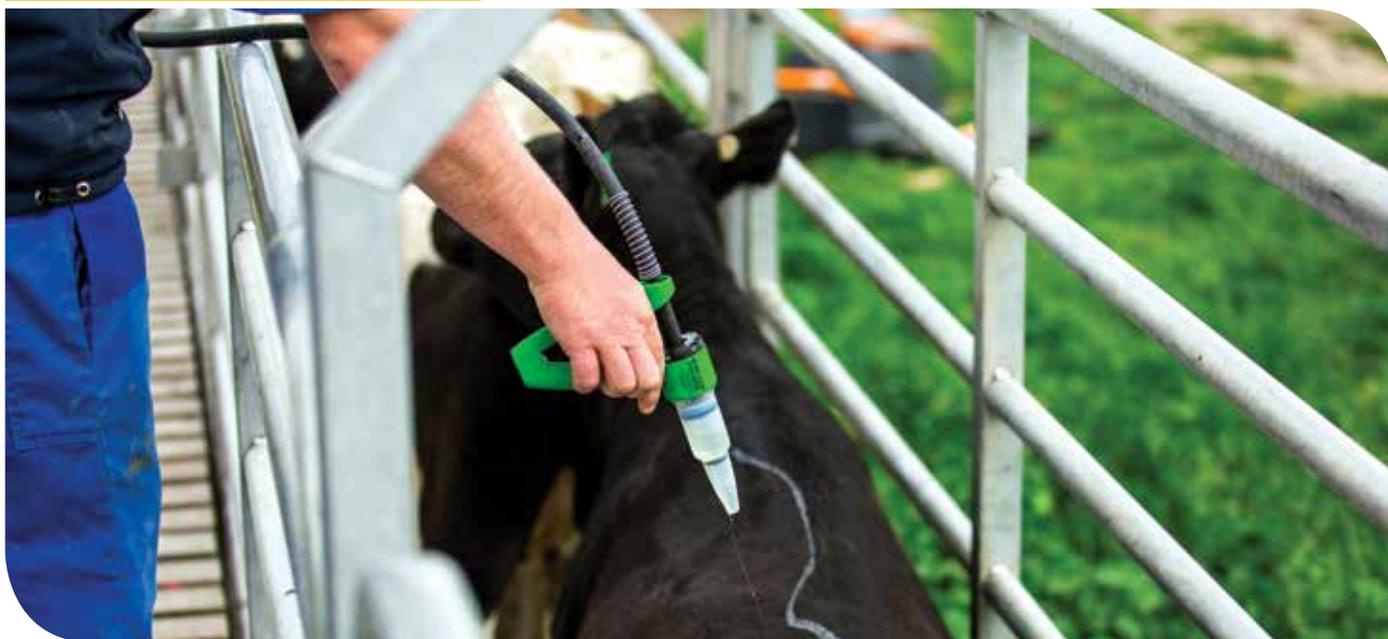
² Heath, A. & Levot, G. Parasiticide resistance in fleece, lice and ticks in New Zealand and Australia: mechanisms, prevalence and prevention. NZ Veterinary Journal (2015).

Top tips:

Fly: A shorter period of protection will occur when lower volumes of dip wash are applied as seen with automatic jetting races (expect 4-6 weeks), heavy rain after application, excessive fleece soiling and dags.

Lice: Thorough wetting is essential for effective control. Check skin wetting using a wetting pencil. It is also recommended that you pay attention to stock security following treatment, quarantine treatment of new stock arrivals, thorough and accurate dipping management and utilising the principles of Integrated Pest Management recommended by Wool Pro.

Fly and Lice: It is good agricultural practice not to treat animals when they are wet or if rain is likely. Prolonged heavy rain following treatment may reduce efficacy. Consider re-treatment of sheep after heavy rain to ensure continued protection.



Your checklist at weaning

If the cow and calf are competing for high quality feed, then it's time to wean. There are several factors to think about when that time comes.

Vaccination

Calves should have been given a clostridial vaccination at calf marking to protect against tetanus and black leg in particular. As this would have been given some months ago, the vaccination programme needs to begin again to provide effective protection. Vaccinate at weaning and again 4-6 weeks later. The timing of the vaccination is more important than the brand of vaccine used. If the two doses are too far apart, protection can lapse and the booster effect will not provide long-term care.

Drenching

For many calves, this will be the time of their first drench. The worm burden is likely to be dominated by *Cooperia*, but *Ostertagia* is still the parasite that is likely to be causing production loss. Levamisole is highly effective against *Cooperia* but not *Ostertagia*, particularly the inhibited larvae. It is the opposite with ML drenches (abamectin, moxidectin, doramectin and eprinomectin), so having these two in combination makes sense so that you have an effective worm kill. The BZ drench family is in the oral formulation, which helps to delay the development of resistance. If you are orally drenching, a triple combination is the best option.

For injectable and pour on drenches, use products containing a ML and levamisole. Correct application is important so check the gun is operating well and then set the dose using a measuring cylinder. As these calves are often 6-8 months old, their immune system is somewhat effective at making life a bit tough for the worms, so drenching does not need to be as frequent as with weaned lambs.

A follow-up drench at 6-8 week intervals on pasture where larval contamination has been managed using sheep and older cattle can be appropriate. Levamisole is toxic to dehydrated and stressed calves, so avoid drenching animals that have been yarded for long periods in hot weather.

Selenium

This is an important mineral in young cattle effecting growth rates, immune function and enzymatic pathways. Oral drenches, pour on and short acting injections provide short-term supplementation. The use of long-acting injections, selenium fertiliser prills and continuous supply in the drinking water system provide longer term protection. Your best option depends on your soil type, selenium levels, water system, cost and convenience.

B12

Although many calves receive Vitamin B12, the benefit is questionable in many parts of New Zealand. It does improve the appetite of deficient animals, but if you are seeing this response, then soil, pasture and animal analysis is advised to determine the extent of the deficiency.

Weigh

EID readers and weigh scales have certainly simplified the process of recording live-weights. Weaning is also a good time to weigh the cows to benchmark what percentage of the cows' body weight the weaned calf is. This figure is particular to your system and is good to know. Cows should be their heaviest at weaning, and any light cows need remedial attention.

Visit your local PGG Wrightson team today to discuss your calf weaning requirements.



Andrew Dowling BVSc
Technical Manager – Animal Production
PGG Wrightson

Focus on calves

Weaned calves need good quality leafy pasture to grow efficiently.

To ensure calves are getting the nutrients they need, it is worthwhile weighing them and monitoring performance against live weight targets (see Table 1 below). Be aware that autumn growth rates may be limited by excess protein so hoping that summer growth deficits will disappear in the autumn may be unrealistic.

Pasture quality is highly variable. During a dry spell, pasture quality can drop to 8-9.5 MJ ME per kg DM, 9-14 percent crude protein and 52-65 percent NDF. Low quality, high NDF, pasture does not support acceptable growth rates in young animals. Calves may look full and happily chewing their cud in the paddock. But if energy and protein are limited; frame, muscle development and average daily gains will also be limited.

Calves that are more than 10 percent behind targets struggle to recover lost growth without supplementary feeding. Grass silage or a simple blend incorporating higher protein feeds like dried distillers grains or soya bean meal may be worthwhile if pasture is stemmy (for instance, high NDF). Within any mob, the lower quartile may need better quality supplementation, especially if they have been born late or suffered an early health challenge.

For calves that need more help, the use of a fully balanced calf feed is warranted. NRM Grow Up 20% (if pasture protein



levels are low) or Grow Up 16% (if pastures are leafy but limited) are worth considering. Both options are high energy, low fibre feeds with additional protein from soya bean meal which contains a good balance of amino acids but won't add to a urea overload should conditions suddenly turn wet.

Premium calf feeds contain nutritionally important extras which are not present in straights and conserved forages. For example, grains and straights can

be low in calcium relative to the needs of growing animals. PKE may contain only 2.2 g calcium per kg DM which is about half the typical requirement for growing cattle.

Rumen bacteria produce Vitamin B1 which is involved in the release of energy from carbohydrates and activity of the nervous system. Production is enhanced by the presence of soluble carbohydrates and soluble nitrogen in the diet. These constituents may be lacking in summer dry pasture. A range of B vitamins are included at nutritionally important levels in NRM calf feeds. Coccidia challenge is most likely in the eight weeks after weaning but the extra protection of Bovatec could be worthwhile in older calves if unfavourable conditions have aligned to hold back performance.

Weighing calves and responding to the results is an especially rewarding process. Contact your local PGG Wrightson Technical Field Representative to help organise heifer pasture testing, weighing systems and feed solutions which fit your operation.

Table 1: Typical target calf weights relative to the mature weight of dairy cows*

Age	Target calf weight		
	400 kg	500 kg	600 kg
Mature live weight of cow			
3 months	70 kg	90 kg	110 kg
6 months (30% mature live weight)	120 kg	150 kg	180 kg
15 months (60% mature live weight)	240 kg	300 kg	360 kg
22 months (90% mature live weight)	360 kg	450 kg	540 kg

* Note these should be considered as minimums not averages.

Think of the bones as a phosphorus bank

Now (during late lactation) is the time for optimal phosphorus supplementation.

The majority (80-85 percent) of a cow's total phosphorus (P) is stored in bone. It is utilised in early lactation to support colostrum and milk production. A litre of milk contains between 0.7-1.2 g of phosphorus¹. In early lactation the withdrawal of phosphorus from bone occurs rapidly. Crediting the phosphorus 'bone bank' after continual withdraws throughout the milking season takes time and needs to begin early. Building up the bone bank becomes increasingly important if low P feeds such as fodder beet and/or maize silage are planned for autumn and winter feeding.

A growing heifer accumulates phosphorus in bone structure. This is later used as a source to provide for her growing calf, milk production and health. In mature cows, the calculated P balance is already negative (in overdraft) at the end of the dry period, extending until the first weeks of lactation, irrespective of adequate dietary phosphorus¹. As much as 25 percent of phosphorus that would normally come from the cows' diet is released from her bones in early lactation to meet this considerable phosphorus demand². Modern systems have reduced dry periods where diets can be limited to P deficient crops such as fodder beet. This system may not allow for the bone bank to go fully into 'credit', so now (during late lactation) is the time for optimal P supplementation.

Phosphorus exchange in and out of the bones is influenced by the amount

of phosphorus being digested, the amount leaving the cow in milk, stage of pregnancy and hormones to name a few. The best time to replenish bone phosphorus is in the late lactation/early dry off period when milk production is declining and foetal demand for phosphorus is negligible¹. Keep in mind that it is not possible to replenish bone phosphorus overnight. The cow's capacity to absorb and store phosphorus in the bone matrix is limited. Phosphorus intake above requirement is excess, and although generally not harmful to the cow, will be excreted. Now is the time to start the gradual bone rebuild before winter and ensure against potential deficiencies.

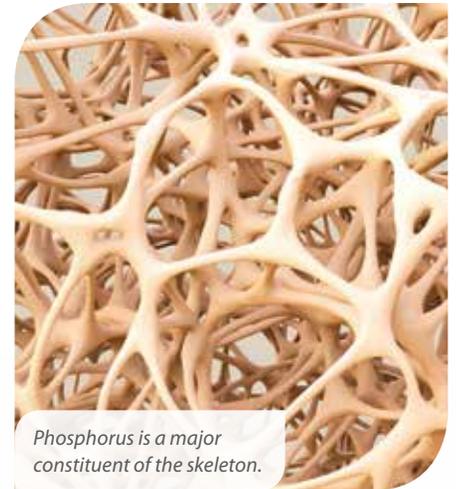
Starting supplementation early with a highly bioavailable phosphorus source helps maximise phosphorus absorption and get the P bone bank back into credit ready for the next calving.

Contact your local PGG Wrightson Representative to find out more about the range of Yara Feed Phosphates suitable for your farm inline water system or feed blends.

**ARTICLE SUPPLIED BY
BEC FEED SOLUTIONS**

¹ Goselink, R.M.A., Klop, G., Dijkstra, J., & Bannink, A. (2015) Phosphorus metabolism in dairy cattle. A literature study on recent developments and gaps in knowledge. Wageningen, Netherlands: Wageningen UR Livestock Research.

² Valk, H., L.B.J. Šebek and A.C. Beynen. 2002. Influence of phosphorus intake on excretion and blood plasma and saliva concentrations of phosphorus in dairy cows. Journal of Dairy Science 85:2642- 2649.



Phosphorus is a major constituent of the skeleton.



A litre of milk contains between 0.7-1.2 g of phosphorus and the P content of colostrum is far higher than milk.

Table 1: Phosphorus levels in supplements

Product	Elemental phosphorus	Phosphorus bioavailability	How to supplement
Bolifor® MGP+	13.5%	98%	In-shed feeding systems, silage top dress, or feed blend.
Bolifor® MSP+	24%	99%	Dose into drinking water.
Kynofos® 21	21%	97%	Offer free access.

Visit your local PGG Wrightson store for stock food, animal health supplies, farm merchandise, apparel and so much more. Our expert team of Technical Field Representatives is also here to help you choose the right products for the best results in the months ahead. Talk to your local team today.

South Island Stores and Technical Field Representatives

Alexandra	85-87 Tarbert Street Troy Mackey (Retail Sales Team Leader) Mark Grimward (TFR)	03 440 2391 027 404 6980 027 601 2085		Methven	Main Street Peter McKnight (TFR) Leigh Garner (TFR)	03 302 8407 027 477 4046 027 431 4046
Amberley	Main Road Hamish Black (TFR)	03 314 8516 027 434 4076		Milton	15 Union Street Sarah Swinbourn (TFR)	03 417 8403 027 563 9213
Ashburton	447 West Street Leigh Garner (TFR)	03 307 8737 027 431 4046		Mosgiel	16 Factory Road	03 489 4174
Balclutha	196-200 Clyde Street Kevin Thomson (TFR)	03 418 1332 027 242 1077		Motueka	26 Old Wharf Road Andrew Young (TFR)	03 528 8680 027 235 6999
Blenheim	20 Westwood Avenue Mark Best (TFR) Rachael Davis (TFR)	03 579 3733 027 598 1719 027 598 1720		Murchison	89 Fairfax Street Mark Prosser (TFR)	03 523 1030 027 598 9948
Cheviot	Main Road Andrew McWhannell (TFR)	03 319 8772 027 672 7008		Oamaru	230 Thames Highway Ross Wilson (TFR) Josh Dalziel (TFR)	03 433 1340 027 590 4213 027 403 4091
Christchurch	411 Blenheim Road	03 341 4318		Otautau	178 Main Street Andrew Cade (TFR) Harry Cuttance (TFR) Allister Gibson (TFR)	03 225 9710 027 432 0422 027 406 2038 027 538 8064
Cromwell	5 Iles Street Gerard McCarthy (TFR)	03 445 3730 027 473 0614		Outram	Holyhead Street Pam Vanderhilst (TFR) Gerrard Pile (TFR)	03 486 2991 027 444 3304 027 488 6411
Culverden	48 Main Road David White (TFR) Storm Clark (TFR)	03 315 3040 027 448 6269 027 434 4097		Palmerston	61 Tiverton Street Neil Martin (TFR)	03 465 4080 027 459 1005
Darfield	1 Ross Street Richard Goldie (TFR)	03 318 7850 027 434 4077		Rakaia	56 Railway Terrace West Kaye Duncan (TFR)	03 303 5790 027 568 8068
Fairlie	Main Road Gerry O'Neill (TFR) Maree Ferriman-Smith (TFR)	03 685 9090 027 431 4057 027 591 8420		Ranfurly	6 Northland Street John Kreft (TFR)	03 444 1033 027 273 9790
Geraldine	Main Road Matt Cooper (TFR)	03 693 1025 027 590 8064		Rangiora	67 Victoria Street Kaleb Bolton (TFR) Blair Murdoch (TFR)	03 313 0880 027 432 8224 027 403 6328
Gore	Cnr River and Medway Streets Garth Cleland (TFR) Lester Howden (TFR) Roger Collins (TFR) Paul Henry (TFR)	03 209 0314 027 529 7759 027 504 1144 027 435 0740 027 837 6330		Richmond	6 Gladstone Road Andrew Young (TFR)	03 544 6115 027 235 6999
Greymouth	116-120 Tainui Street Alan Steel (TFR) Hannah Nicholls (TFR)	03 768 0200 027 454 3618 027 457 4416		Roxburgh	99 Scotland Street Aimee Dyke (TFR)	03 446 8016 027 839 7081
Hawarden	11 High Street Hamish Black (TFR)	03 314 4458 027 434 4076		Takaka	Buxton Lane Graeme McCleely (TFR)	03 525 7891 027 590 7502
Heriot	59 Roxburgh Street Gordon Scott (TFR) Garth Cleland (TFR)	03 204 2021 027 436 4140 027 529 7759		Tapanui	Bushyhill Street Gordon Scott (TFR) Paul Henry (TFR)	03 203 0280 027 436 4140 027 837 6330
Invercargill	Cnr Dee and Earnslaw Streets Phil Simons (TFR)	03 211 3160 027 664 4317		Te Anau	37 Caswell Road Jeff McFarlane (TFR) Jason Robson (TFR)	03 249 8610 027 598 9947 027 590 2501
Kaikoura	98 Beach Road Sky Horton (TFR)	03 319 5012 027 702 9152		Temuka	Wood Street Murray Spence (TFR)	03 615 0050 027 836 7958
Kurow	36 Bledisloe Street Paul Verdonk (TFR) Josh Dalziel (TFR)	03 436 0534 027 235 0051 027 403 4091		Timaru	Evans Street Andrew Brosnahan (TFR) Murray Spence (TFR)	03 687 7338 027 595 6457 027 836 7958
Leeston	High Street Jim Fuller (TFR)	03 324 8180 027 591 8437		Tuatapere	Main Street Andrew Cade (TFR)	03 226 9360 027 432 0422
Lumsden	135 Flora Road Jeff McFarlane (TFR) Trevor Todd (TFR) Jason Robson (TFR)	03 248 9000 027 598 9947 027 705 6624 027 590 2501		Waimate	12 Shearman Street Dave Keane (TFR) Wayne Fisher-Hewitt (TFR)	03 689 8059 027 705 8137 027 807 4808
Mayfield	Main Road, RD8 Peter McKnight (TFR)	03 303 6011 027 477 4046		Winton	12 Brandon Street David Wheeley (TFR) Allister Gibson (TFR) Jaimee Elder (TFR)	03 236 6121 027 263 3233 027 538 8064 027 532 1354
				Wyndham	Balaclava Street Allister Gaudie (TFR)	03 206 2020 027 434 5213