

THE Tow and Fert TIMES

TOW AND FERT
BY METALFORM

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SEE INSIDE FOR | NEW CASE STUDIES | EXPERTS CORNER - GRANT RICHARDS | AROUND THE WORLD - WALES

HIGH PAYOUTS - RISING EVERYTHING.

Record milk solid prices are being eaten away on many fronts.

As the post pandemic world shifts and re-balances itself for the new normal, market forces are creating a constantly changing and, seemingly unforeseen, uncertain future for farmers.

HIGH PAYOUT - HIGH FERT PRICES

With the dairy payout approaching \$10/kg of milk solids it is easy to sit back and say, 'let the good times roll'. However, as we have all seen, the rising cost of fertiliser, in particular 'N' based fertiliser, has seen a consistent whittling away of the gains and profits that have been obtained from these high prices. The 'N' based fertiliser market has been going through a series of 'perfect storm' style changes, delays and events that have seen prices rise to historically high levels with no end in sight.

Long before the war in Ukraine took hold there were problems with Natural Gas supplies in Europe, a key component in the manufacture of Urea. The UK, Ireland, and Europe in general saw prices double and European Fertiliser plants shutdown due to the rising price of Natural Gas. Production dropped to a staggering 45% of capacity.

The Ukraine war has only served to exacerbate the problem with products such as Potash no longer being bought from Belarus and Russia due to the imposition of sanctions.

Whilst all this is a long way from us here in New Zealand the impact filters through and we have seen the large fert companies, Ballance and Ravensdown, lift prices significantly in the last 12 months as the impacts of these issues overseas affect world markets.

Rising inflation has now seen inflation rates head beyond 6% and the resulting pressure on business to raise wages by that amount at least, has resulted in prices rising significantly across many sectors in the market.

For farmers they will know all too well the problems in getting new machinery and the time delays in importing these machines due to shipping lines delaying or cancelling ships whilst raising prices. And whilst we cannot blame the shipping lines alone, there is a unique set of circumstances they have managed to take advantage of to capture record profits after many years of very low returns due to low prices and over-capacity.

And who can forget the property market. The government have long paid lip-service to the ever-increasing prices of property throwing 'solution' after 'solution' at it with little to no impact whatsoever. It seems now though that market forces have returned to control the out-of-control price inflation in property as mortgage interest rates increase and are set to increase further still.

The labor shortage, especially for dairy farmers, due to border closures and travel restrictions has left many working extremely long hours to make up the shortfall and trying to attract labor with increased wages and benefits.

All the above have led to a perfect storm of influences leading to inflationary pressure in many areas of the economy and serving to eat away at the gains that have been coming the way of dairy farmers in recent years.

HIGH PAYOUT - LOWER N LIMITS

It is one area that has bucked the trend, at least as far as this article goes. The imposition of N limits at 190 Units of N/ha have now been in place for almost a year and farmers have responded almost universally by finding ways of dropping below the cap.

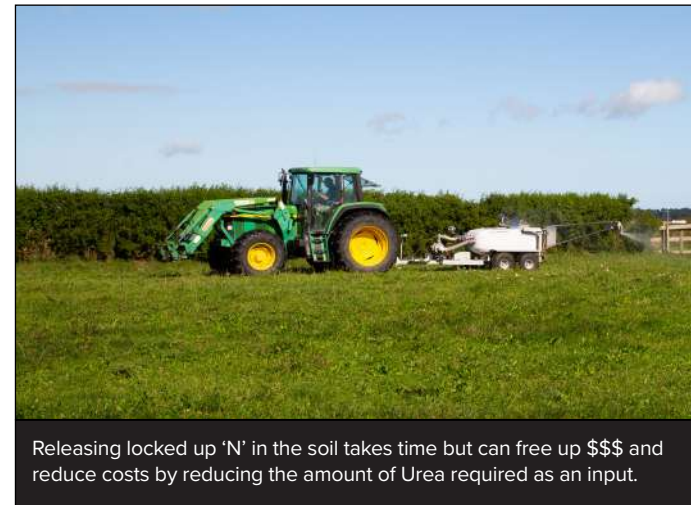
This has resulted in several positive outcomes – reduced spending on fertiliser and reduced environmental impact of fertilisers to name two. However, if you have followed our Tow and Fert Times and the articles over the last 7 Volumes we have published you will know of the focus we have had on these lower 'N' inputs. Our very first edition was released just after the government indicated it would be looking at regulation to reduce the impact of 'N' on our waterways. Volume two also looked at regulation and how it might impact on the dairy industry. Volume three was released shortly after the introduction and passing of the legislation to limit the input of 'N' and Te Mana o te Wai – "The Mana of the Water" National Water Policy Statement.



The first three editions of the Tow and Fert Times, from 2019/2020, focused on the prospect of regulation being brought in to control the environmental impact of fertiliser application down on the farm. Now, two years later, we are seeing the impacts on farmers across the country.

Throughout these early editions we maintained that the introduction of these limitations was not the be-all and end-all for dairy farming but were in fact a chance for farmers to really look at their systems and find better ways of growing grass and producing milk. To a large degree this has happened across the country. Most farmers we speak to have taken these changes in their stride and found ways to reduce their 'N' inputs whilst supplementing their fertiliser inputs with other products such as biological stimulants, fish hydrolysate, seaweed products, humates and many others.

Of course, the current focus on "Regenerative Agriculture" uses methodologies that help use natural sources of 'N' through the growing or addition of red and white clovers, plantain, chicory, and other legumes, all of which help to fix vital nutrients from the atmosphere the plant can then use to grow.



Releasing locked up 'N' in the soil takes time but can free up \$\$\$ and reduce costs by reducing the amount of Urea required as an input.

A SHAMELESS PLUG - TOW AND FERT

Tow and Fert users across the world are seeing the benefits of fertiliser efficiency on their farms. They are saving significant amounts of money on inputs and improving their environmental footprint in the process. And whilst many are looking at the immediate impacts of changing to the Tow and Fert System the benefits are ongoing and long term.

Fertiliser efficiency in today's market of high pay-outs, high inflation and low input levels is essential to making the most of the high pay-outs. For too long farmers have had to contend with low prices. For high prices to arrive and for these external factors to then eat away at the profits these high prices should afford is disappointing but ultimately out of the control of individual farmers and businesses.

Working in areas on the farm that farmers can control is imperative to creating a business that runs well and creates a lifestyle for the families that rely on the farm for employment.

A Tow and Fert is one-way farmers can save money without compromising on their grass growth or milk production. They are an incredibly versatile machine that once learned can be used in many ways to apply many different products that will benefit the farm.

See inside for:

CASE STUDY TARANAKI FARMER Jeff and Petri Bellamy:

Coming from a high intensity System 5 farm in the Waikato to a smaller boutique farm in The 'Naki has completely changed Jeff and Petri's views on Dairy Farming.



EXPERTS CORNER

GRANT RICHARDS Man on a Mission:

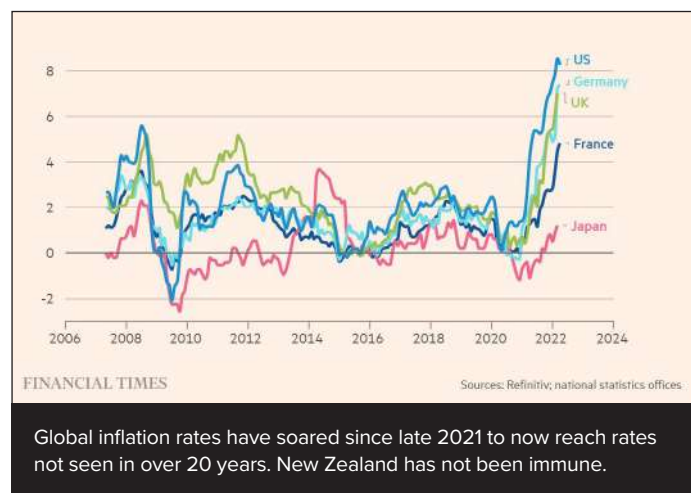
A trained animal and human nutritionist and agronomist, Grant's work has taken him all over New Zealand helping farmers turn around their farming practices.



CASE STUDY FOLLOWUP ONE YEAR ON WITH THE TOW AND FERT.

Georgie Galloway of Southland

In Volume 6 we caught up with Georgie on her farm in Southland. We catch up with her again to track her progress.



EXPERTS CORNER: GRANT RICHARDS

A MAN ON MISSION TO CHANGE FARMING FOR THE BETTER

A trained animal and human nutritionist, and agronomist, Grant’s work has taken him all over New Zealand helping farmers turn around their farming practices.



Contributor article.

A commercial nutritionist’s “hands on” approach to value adding on dairy farms with foliar spray systems.

Foliar spray systems provide a valuable tool to better control seasonal variations, external forces and achieve a more profitable business.

As a commercial nutritionist and farm consultant I am often asked about the benefits of a dairy farm changing from a traditional solid fertiliser regime to a regime that is based around foliar application of products.

Below is a table of what a typical farm can expect to see when this change is made and managed well.

Annual Overview	Autumn	Winter-Early spring	Summer
Yield & Harvest	Late or Early Lactation	Dry Period	Mid Lactation
+0.5 TDM/Ha Year 1	Longer growing period	Faster growth	More grass
+1-2 TDMH Years 1-3	Less reseeding	Quicker rounds	Greener growth
Faster Tillering (LEI)	Less clover shading	Open up earlier	More roots alive
More round per year	Faster LEI	Less protein deficits	Quicker LEI
More uniform cover	Confidence to milk longer	Operate with less cover build up	Quicker comeback after rain-roots alive!
Less Fertility patches	Mores DIMs	Less clover shading	Less Pulling
Cleaner residuals	Stagger dry off	More silage potential	Less fibre NDF issues
More even growing points	More even BCS per cow on average	More leafy buttery, easy to harvest grass	Less protein imports required as greener
Less clumps	Less supps required	Better “base” quality	Less open swards
Fewer weeds, less openness in pastures	Single, double spray pasture post crops	Options beyond low soil temps (<12 deg)	Compete with summer weeds better
Less pulling	Grow more clover	Less Leaching	Crop spraying at est.
2nd silage cut potential	Clover broadcast		FE, Zinc spraying

LEI = Leaf Emmergence Interval, DIM = Days In Milk, BCS = Body Condition Score

Foliar application of fertiliser leads to bio-economic, environmental and sustainability benefits with no known side effects.

An integrated foliar and granular fertiliser system means less acidic granular fertilisers are required. This allows soil pH levels to hold up better. When foliar fertilising, less lime is required to neutralise the added acidity per annum an all granular (SOA, DAP, Urea etc.) system would create. The neutralising value of lime application for some clients has been up to 1.5 Tonne of Aglime per hectare per annum.

Lime should be managed as a scarce resource and applied only when and where required. With optimum N fixation via the nitrification cycle being in the 6.0-6.4 pH range, excess acidic fertilisers are not helping clovers nor the environment. Options exist such as the Tow and Fert to foliar broadcast clover and N fixing bacteria to make innate nitrification more self-sufficient.

Weed spraying should be done before applying clovers. Carbon conditioning and elevating agents can be applied also in a foliar form where carbon % and quantity are low or C:N ratio is low.

“Why lose 40% to leaching each year?” Less leaching and runoff are the goals.

Foliar leaching is minimal especially when rain-fast sticking agents including salt, or molasses are used strategically at minimal levels. Applications should be set up around leaf emergence. Spraying 3-4 days before and after the tillering date means volatilisation, wash off and leaching are minimal.



White Clover is one the best ways to fix Nitrogen from the atmosphere in the soil to maximise growth, and developing organic matter in poorer soils. Red clover is a taprooted legume diving deeper into the soil.

Strategic use of UAN, Liquid Urea, Liquid Sulphur, Progibb, Lime, salt and molasses featured strongly in this farms foliar fertiliser planning, as well as the vital \$10 soil thermometer. As you can see from the figures in the previous table the payback on the investment in the machine was only 6 months.

On-farm marginal growth responses were 6-9c/kgDM grown in the initial early days of measuring responses. That compared to PKE costs of 20-25c/kgDM at the time. Growth responses under low soil temperature (June, 8 degrees) were an additional 28kgDMHa/ day.

Comparative and marginal DM costs.

While all costs have ramped in todays terms, costs per extra kgDM grown are still 12-20c/kgDM for a 15-25 kgDM/Ha response. Compared to PKE and Soy hulls as grass/DM replacers, that are costing \$45-55c/kg right now, the value add to your business of purchasing a Tow and Fert and growing more grass is easy to calculate.

Home grown grass is the “bird in the hand”, whereas being at the mercy of all the external uncontrollables loses attraction quickly when you are growing more grass through foliar fertiliser application.

The bottom line is: do your homework. Profit proof your farm system and enlarge your farm management toolbox to live above and beyond the weather, supply chains, and pricing so that these do not dictate and control your business.

Do a worms eye view at grass level of the day to day operation and find out what the problems and issues are, is it animal health? is it poor soil health? or not enough grass being grown? Then take a birds eye view of your entire operation and look for ways that you can change your systems or your whole operation to achieve a different outcome and fix the problem. Finally be sure to search out integrationist experts who are independent of outside forces with a track record of helping as needed.

About Grant Richards

Grant has a simple philosophy “Join the dots”. Simply put, this means when he meets with a new client he is looking for the causes of the problems they are facing and working through the processes to diagnose, treat, and fix any problems down on the farm. He is looking to join the dots to find the cause and then fix the problem. He is no ‘ambulance at the bottom of the cliff’ man and he keeps a very transparent and simple business model: he doesn’t sell fertiliser, or animal health products or anything else. In fact, Grant is simply your farm consultant and he will recommend what he knows will fix the problems a farmer is having.

Grant helps his clients to create a farm that is thriving for the animals, the environment, and the business. It is a holistic approach to farming that renders remarkable results when put into practice.

(Grant Richards (Newtrition Solutions Ltd) is an independent animal and human nutritionist with 35 years of commercial experience. Contact Grant on 027 437 9741 or newtrition@xtra.co.nz)

“Joining the Soil-Plant-Cow-Human optimum nutrition ‘dots’ towards better productivity, profitability and sustainability outcomes is essential.”

Where there is a problem there is always an opportunity.

It’s what you learn after you think you know everything that’s really important.

Alternate plans to minimise the need for palm kernel and additional supplements on dairy farms are needed.

Excess reliance on external feeds and market forces means the industry needs some urgent “re-set” critical thinking around supplementary feeds. With supply, logistics, pricing, pay-out volatility, compliance regulation barriers and other external factors it is necessary for farmers to find and implement more flexible options on farm to accommodate these growing dilemma’s and business risks. *Foliar spraying is becoming an essential tool towards more on-farm self-sufficiency.*

Days In milk and cash are king!

Growing grass faster and for longer are vital if this objective is to be met. Improving harvest outcomes in winter, early spring, summer and late autumn can be achieved with strategic foliar spraying especially when soil temperatures are less than 12 degrees, heat energy is low and soil temperatures are dry.

Return on investment: Can it work? A retrospective client case study

Productivity	Outcomes Year 1 - Actual
Extra Harvest	+0.63 TDM/Ha
Extra Milk	+20,000 kgMS
Extra DIM	+20 days
Equiv PKE Tonnes	126 TDM
Extra Income	+ \$138,240
Energy Audit	+ 7000MJ/Ha
Sprayer Cost	\$72,000
Margin	\$66,240
Payback	6 Months

Farm details: 200Ha, 540 Cows, Feed Silo, Molasses, Tow and Fert Multi 2800

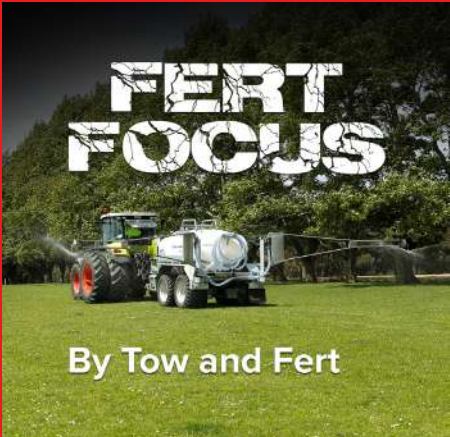
Listen to our Podcast
FERT FOCUS



Episode 4

Joining the Dots
with Grant Richards of
Newtrition.

<https://anchor.fm/fertfocus>



CASE STUDY

Jeff & Petri Bellamy, Taranaki

ANIMAL HEALTH THE BIG WINNER!



Coming from a System 5 farm with 850 cows in the heart of the Waikato to a small boutique style farm in Taranaki was a change that Jeff and Petri Bellamy were not expecting.

Originally, they had wanted to stay in the Waikato however prices were prohibitive for entering into owning your own farm.

Jeff and Petri spent almost 9 months looking for their perfect farm including looking on the West Coast of the South Island. During this time Jeff was also looking at farm equipment and specifically a fert spreader when he “stumbled upon” the Tow and Fert.

Jeff says “I think it was a YouTube video that started our journey down the rabbit hole of Tow and Fert”

For Jeff and Petri that Tow and Fert video became the catalyst for a complete change in thinking and eventually they found their perfect farm in South Taranaki.

Now at home on the farm in Mokoia, South Taranaki their farm is an open book.

Both Jeff and Petri have had to ‘learn farming all over again’ due the complete change in system. On this farm they walked onto a farm that presented a clean slate. It had had minimal inputs over the years so there were no pre-ordained input systems or products to follow or wean the property off. Instead, Jeff and Petri have been able to begin a journey to a different type of dairy farming.

Jeff says **“Michael came and visited us with a Tow and Fert machine and that was an eye opener that started our thought patterns to go somewhere different to where we had been. The Tow and Fert became the catalyst to thinking outside of where we had normally been.”**

“In the end no matter which system we decided to run, we locked in on the Tow and Fert.”

And now on the farm in Taranaki Jeff says that he has not even used the Tow and Fert for Urea “On our farm here we had no history of fertiliser input.”

Jeff says that he has done everything but Urea application with the Tow and Fert. Instead, they have been applying their Mag

Oxide, Lime flour and other animal health products onto the grass, ensuring each of the cows is getting what it needs. Additionally, they have begun to apply Fish Hydrolysate and Molasses to begin the process of feeding the soil biology helping to release locked up nutrients in the soil.

“For us the animal health side of things has been fantastic. We are 6 X less cost per cow than what we were in terms of animal health costs, which is mind-blowing for us. We have staggering animal health”

Petri adds “We have such a calm herd in the cow shed. We had no down cows, no jittery or unsettled cows putting the Mag Oxide through the Tow and Fert. It’s been so good to be able to spread the whole paddock and to know that there is not one patch of white and one patch of nothing.”

Jeff says “Our goal or plan is to not just deal with the here and now and chuck Urea on the grass. We are wanting to feed the ground and look after the biology in the soil.”

The animal health side of things has been an unexpected bonus for Jeff and Petri highlighting the versatility of the Tow and Fert Multi 1000. And Jeff is all too aware that they are only scratching the surface of what the machine can do for them.

“We know we are only at the start of our Tow and Fert journey, and we are excited about what it can still do for us.”

“Even if the machine was only to save us on the animal health side, as it already has, it would still have been well worth the investment.”



Jeff applying animal health products such as Mag Oxide to one of his paddocks in South Taranaki with a Tow and Fert Multi 1000

From the DID YOU KNOW File

#01

FOLIAR FEEDING FERTILISER LITTLE AND OFTEN GIVES THE PLANT THE NUTRIENTS IT NEEDS TO GROW WHEN IT NEEDS IT MOST

In conventional fertiliser circles it is often a case of dump on the capital fert once a year. However, plants go through cycles of growth where they need different nutrients at different times of the year depending on the seasons.

At Tow and Fert we have long been proponents of the idea of applying fert ‘little and often’ when the plant needs it to maximise its growth and Tow and Fert users know that this type of system works.

#02

MICHAEL SMITH, TOW AND FERT SALES MANAGER WAS ONCE A DAIRY FARMER AND TOW AND FERT CONTRACTOR

He’s been called Mr Tow and Fert and there is a reason for it. Michael has been both a dairy farmer and was one of our very first Tow and Fert Contractors in and around Southland.

He has an incredible knowledge of dairy farming, and when coupled with his knowledge and experience of being a Tow and Fert Contractor, you have a resource that can assist most farmers with advice on how to improve their farm changing to the Tow and Fert system.



WINTERING IN THE DEEP SOUTH.

GEORGIE GALLOWAY CONTINUES TO CHANGE THINGS UP DOWN ON THE FARM WITH REMARKABLE RESULTS.



Georgie Galloway

Georgie Galloway has come a long way in the last few years. Running a wintering farm with her boss Graeme in Southland, Georgie has been the catalyst for change and growth in finding a new and better way of growing

grass for bailage and kale crops. When Graeme ran out of solid Urea halfway through application in a paddock they thought they would clearly see the difference. They didn’t. And that led them down the path of trying new things.

Their path has taken them to a Fish Hydrolysate, Fishlt, and in combination with other products they have developed and evolved their farm over 3-4 years with amazing and inspiring results.

Q: So, Georgie, since we last saw you, 12 months ago you hadn’t had to bring in any additional bailage. Is that still the case?

Georgie: “Yes, absolutely. Because we have focused on getting those healthier soils working for us, during that dryer time this year it has meant that we have been able to maintain grass growth.”

Q: The changes you have made to the farm have taken time. Have you perfected what you are doing?

Georgie: “I say that the transition has been fast in that we made the changes in one go. The

perfecting of the system has taken all of 4 years. This would be our ‘where we want to be year’. Last year we came up with 20kgs of Urea and 20l of fish just to give the Kale that boost when it needed it and to keep the insects at bay and keep it nice and healthy. That has meant that this year it has been really easy to implement across the farm and keep it going. Even at canopy time I’d waited 3 weeks to apply that little bit of Urea and little bit of Fish and I could see that the Kale was starting to yellow so it needed that boost just a little bit sooner. I was able to head out and do that when the plant needed it.”

Q: That’s a great example of watching what is going on on the farm and making decisions based on what you see. How do you use the ‘eye-ometer’ on the farm?

Georgie: “To me that is farmer led science. We make decisions based around what we know and what we see, then trial and error. We find what works and keep doing it.”

Q: And are you putting on Urea now?

Georgie: “We do put small amounts of Urea, along with the fish, on to our Kale plants because Kale loves Urea, but on our grass paddocks we have not put any on so the clover has to send its roots down and exchange N with all the other grasses.”

Q: You’ve come a long way, so where do you see it going in the future?

Georgie: “We are looking down the regenerative pathway in a way and improving our soil health. We are tossing around ideas of how we can improve the Kale crop and we are going to try a couple of hectares where we mix up a multi species paddock. We are still looking into where to from here but that is what is exciting.”

Q: And what would you say to farmers wanting to give this a go?

Georgie: “Just talk to the crazy neighbour that is doing something different and give it a go.”

CASE STUDY FOLLOW UP

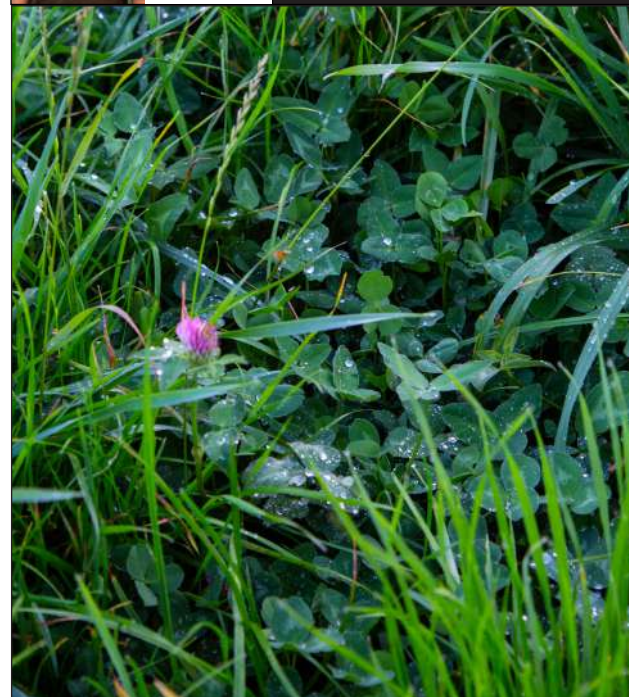


Georgie out in the paddock applying Fishlt to one of her paddocks with a Tow and Fert Multi 1200



Left: Listen to Georgie on our PodCast Fert Focus: Episode 5 - Wintering in the Deep South

Below: Clover is prolific in the grass paddocks on Georgies farm.



AROUND THE WORLD

From Dannevirke to Wales

**SAVING 63% IN NITROGEN USE
AFTER JUST 2 YEARS.**

The growth in Tow and Fert over the last 2 years has been driven by an increased focus on the impacts of fertiliser on the environment. Across the world farmers of all sorts are looking for better ways to run their businesses, reducing the impact they have on the environment around them.

It's not just local farmers struggling with the price of Urea and the impact of Nitrogen fertilisers on the environment. With prices increasing for Urea, Farmers around the world are discovering the benefits of foliar applied Urea and enjoying the versatility that their Tow and Fert Machine provides by developing their own brews and recipes.

Over the last few years, we have sent Tow and Fert's out to Australia, South Africa, Ireland, Wales, and England. In all these markets the push has been to reduce Urea use and to assist in beginning to transition the farm away from a reliance on Urea and Nitrogen. Longer term most of these clients are looking to apply multiple products with a view to improving their soil health and growing more grass with less reliance on imported fertiliser.

In Wales one farmer, Andrew Rees has led the way. Late last year we held a webinar with Andrew for our European clients and Andrew has since featured in several publications as pioneering a new way of working with fertiliser inputs on the farm.

His story begins when he and wife Vicky decided to take the plunge and purchase a Tow and Fert Multi 2800 for their Dairy farm in 2020.



Andrew Rees

each paddock."

Andrew now also adds Humic Acid and Molasses into the Urea solution helping to increase the uptake of Nitrogen and feed the soil bacteria to help improve soil health.

For Andrew and Vicky, the high capital cost of the machine, manufactured and imported from New Zealand, has already been recouped through fertiliser savings, however it is the machines versatility that excites Andrew moving forward.

"We have used it (Tow and Fert Multi 2800) for over-sowing chicory, plantain and clover and the seed can be applied at the same time as the fertiliser."



The newspaper in Wales Featuring Andrew Rees' story.



Left: At Moor Farm in Wales Andrew Rees' cows are healthier, an unexpected benefit from the change to a foliar fertiliser system. Right: A multi-species paddock on Andrews farm.

After just 2 years Andrew had saved 63% on his 'N' use compared to the first year dropping the milking platform down to 82 kg/ha of 'N' compared to 220 kg/ha in 2019.

Other changes Andrew has made to the dairy are to increase the round length slightly and follow the cows a little later than previously to enable the grass sward to regrow enough to be able to absorb the applied liquid fertiliser. Andrew says he always looks to apply product in the early morning or late evening when there is a little bit of atmospheric moisture around. This helps to minimise the potential for any leaf burn.

Additionally, the farm is now able to target specific paddocks with the products it requires to maximise growth. Andrew says, "We targeted the fields with a phosphorus product in spring, the versatility of the Tow and Fert Machine means that we can potentially customise every mix for

Up to 12 percent of Moor Farm is growing multi species pasture with another considerable number of paddocks containing clovers, chicory, and plantain. Andrew says that now "20% of the farm will have some type of herb in it."

For Andrew and Vicky, the measures they have taken are playing a significant role in supporting Nitrogen efficiency.

"You will get a gain from switching from granular to foliar application, but you are not going to get the same level of gains without focusing on other aspects that might be limiting nutrient uptake by the plant."

"The cost savings cannot be ignored but we need to be able to meet nitrate legislation and a way to do that is to do what we can to reduce the amount of N we are losing to the environment. By feeding the plant what it needs, we are not losing anything through leaching."

Andrew has also seen improvements in animal health since making the change to foliar application, an unexpected benefit. His advice to other farmers wanting to head down this route is to do their own research thoroughly, visit a farm with a Tow and Fert operating, and he says,

"It might also be worth doing a small, split paddock trial, a proof of concept on your own farm is worthwhile."

The Tow and Fert Range.



MULTI 500



MULTI 1000



MULTI 1200



MULTI 2800



MULTI 4000

**For more information or to BOOK A FREE on-farm DEMONSTRATION
CALL 0800 337 747 or email sales@towandfert.co.nz**