

THE Tow and Fert TIMES



TOW AND FERT
BY METALFORM

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FERT MYTHS BUSTED | ON FARM CASE STUDIES | HOW TO BOOST PROFITABILITY ON YOUR FARM

TAXES, REGULATION & LOW PAYOUTS

With technology & innovation there is a way to remain profitable

It seems it's all bad news for dairy farmers these days. But with foresight and a drive to innovate there is a way to buck the trend.

With the focus on dairy farming firmly sitting around the viability and structure of share-holder owned dairy companies, farmers have been disappointed with the results delivered to them by these dairy giants. It seems that no matter how realistic the payout forecasts seem to be these companies have been struggling to consistently deliver the benefits that were promoted.

Ultimately, for dairy farmers the lack of success and the mistakes they have continued to make have cost them on the bottom line of their businesses. Profits are down, margins are squeezed, costs are rising and public perception of this once revered farming practice has turned negative. We have seen the media turn to the environmental damage dairy farming is doing to our waterways, animal cruelty carried out on a minority of farms, and more recently the focus on the use of fertiliser on the land, as all filling the negative cycle of all things dairy farming.



Heavily stocked or over stocked paddocks are in the governments sights for possible regulation.

Further, the Government have set their sights on our industry through water taxes, environmental regulation, stock numbers and water quality concerns.

“Throw into the mix Mycoplasma Bovis and stock movement concerns and it seems that whichever way we look there is something telling us we cannot do what we have always done.”

So let's look at where the opportunities are for dairy farmers and why the opportunity to change their farming practices is one to be embraced rather than feared.

Innovation through technology and efficiency will produce a more profitable farm.

Many people, farmers included, think of innovation as simply a new development or way to use technology to improve how things are done. And whilst this is absolutely true, innovation can happen anywhere, at any point, on the farm.

Once upon a time there was no tractor to pull the rotary hoe, nor did we apply fertiliser to our pastures to increase growth. Both are obvious innovations that have driven the dairy industry forward, improved efficiency and the production of milk. But innovation can touch on any aspect or system of a farm, from the improvement of a certain operational system within the milking shed to the app on your phone that gives you the numbers you require for your

animals and milk delivered that day, to the animals themselves through bio-technology developments.

Each innovation we implement is designed to have a positive impact on our business. These days however, the need for innovation has gone beyond the confines of our farms boundaries and into the surrounding environment. Talk of taxes and regulation, nutrient loading and limitations etc. have meant that farmers now have to consider what the impact of changes and innovations on their farms will have on the greater, broader environment.

We have seen stricter rules come into place around effluent management, fertiliser application and the loading we are allowed to apply and the prospect of decreased stock numbers on our farms. This means that maintaining a profitable farm operation is going to become increasingly difficult and expensive.

Innovation has therefore turned beyond the milking shed and outside the tractor to focus more on how we as farmers can find ways to not only save money and time and therefore increase profitability, but also reduce the impact of our industry on our environment, the animals themselves and the community as a whole.

Entering uncharted territory. Fertiliser efficiency.

The efficiency of how we use fertiliser on farm to grow more grass is one area that has been highlighted as having huge potential for innovation and improvement in the way we farm. In fact, at the recent Pasture Summit held in Hamilton and Ashburton the message was clear; the future of efficient farming and the ability to be profitable relies on one thing: growing high-quality grass more efficiently.

In New Zealand our competitive advantage has always been our ability to grow high-quality grass and lots of it. Innovation in grass growing has continued as we have refined the type of grass we grow and innovated around the use of synthetic fertilisers. No farmer can ignore fertiliser innovations such as the move to ultra-fine particle fertilisers which allow farmers to use less fertiliser with better coverage and better results or the addition of Urease inhibitor to Urea (N) fertilisers, which slow down the release on N into the soil and surrounding environment.



At the 2018 Pasture Summit in Hamilton and Ashburton the message was clear: Profitable farming relies on growing high quality grass more efficiently.

These types of innovations in the products we apply to our pastures enable farmers to save considerable amounts of money and get better results and returns in terms of dry matter growth. Their added advantage is that they can have a significant impact in reducing the future environmental damage that previous products have caused.

Many synthetic based fertiliser companies are developing new and innovative products in an attempt to move away from their commodity-based business model to a more value-added

business model. We are seeing the rise of new and innovative products in the Bio-stimulant market, such as seaweed-based nutrition products.

“However, one area that innovation has been slow to pick up on is the application side of fertiliser use.”

Application technologies like the Tow and Fert machines have taken well known scientific knowledge, ie. the benefits of foliar applied fertiliser and made them available to all farmers and more importantly, more efficient. This has led to more time for farmers, better grass growth and more dry matter production.

Importantly however, beyond the farm gate, the application of fertiliser using a Tow and Fert machine has enabled farmers to drastically improve the impact their livelihood has on the environment around them.

“Reducing the amount of fertiliser they are using has benefits to farmers in meeting their nutrient budget, reducing their environmental footprint, meaning they are prepared for the eventual outcome of any potential regulations or taxes.”

Already, hundreds of New Zealand farmers are using a Tow and Fert machine to reduce their environmental impact and control the application of fertiliser on their farm. These farmers are preparing for the future and the eventual reality of regulation and change.

Of course, reducing fertiliser use reduces costs. Reducing costs means operating more efficiently and creating a more profitable business that can withstand the ups and downs of the market place, weather patterns and the giant dairy co-op we all rely on.

See inside for: REAL WORLD CASE STUDIES

The Tow and Fert is changing farming practices across New Zealand, saving farmers money and improving environmental footprints.



Miah Smith, Atiamuri

“If any farmers out there want to cut their N use, grow the same amount of grass, and save money like I have, then this is definitely the way to go.”



Alistair Neville, Reporoa

“We need to be environmentally friendly and with new environmental regulations coming in we need to be smarter about how we use our fertiliser, especially Nitrogen, and I think the Tow and Fert is the answer to quite a lot of that.”

**Book a FREE DEMONSTRATION
CALL 0800 337 747**



FERTILISER INPUTS: CAN “LESS IS MORE” REALLY IMPROVE FARMING PRACTICES?

Improving animal nutrition through soil regeneration and plant health also improves environmental outcomes.

With Uptake NZ

As the less environmentally-friendly aspects of many forms and applications of fertilisers are called into question in the agricultural community all over New Zealand, many fertiliser and agricultural companies have resolved to focus on what they believe to be the key aspect of farming: nutrition.

The health of farm animals is the key to a farmer’s success, and the quality of the pasture is vital to animal health. A balance of essential elements, such as Copper, Zinc, Selenium, Sodium and others, is crucial to maintaining a farm animal’s healthy diet, promoting strength and size and helping the animals fight off illness and lower stress levels.

While many farmers believe an excess of granular Urea is sufficient for healthy grass growth, recent research into New Zealand soil health has shown that a disproportionately large amount of Nitrogen, and subsequently inadequate amounts of other elements, is ultimately both insufficient for soil, plant and animal health, and harmful to the environment.

Many Kiwi farmers are made to believe that laying on the Nitrogen and Phosphate thick and heavy will get the job done, and as a

result of that pour a hefty chunk of their budget into purchasing these elements in large quantities, resulting in funds pouring in for the large fertiliser companies even as they empty from the pockets of the farmers in question.

For thousands of farmers all over the country, the health of their animals is paramount. Deer, sheep, cows, goats and more all receive their nutrition from the land, and if they aren’t getting as much nutrition as they could be from the plants and soil, then farmers are losing money and their customers are losing quality.

As the farming process removes nutrients from the soil, this must be replaced by the farmer if they are to maintain the health of soil, plant and animal alike. A total of 13 elements are required for balanced, nutrition-rich soil, and another three to ensure animal health.

With the right elemental balance, and right application of fertiliser, the result is healthy soil, providing nutrition to both plants and animals. The benefits will also eventually pass to the farmers themselves, and of course, to the consumers they supply.

In the wake of these findings, businesses such as Taupo-based fertiliser company Uptake have streamlined and simplified their mission: quality over quantity. Owner and CEO of Uptake John Davis, a veteran farmer of more than 40 years, firmly believes that the “more is better” philosophy is made redundant in the light of proven results; good nutrition passing from the soil, to the plants it grows, to the animals the plants feed.

“ The Tow and Fert range of products play a key role in enabling quality to be applied to pasture rather than quantity and will help to significantly reduce the amount the fertiliser your farm requires. ”

For more information on the products and services of Uptake New Zealand, contact them on 07 378 2604 or visit their website at www.uptake.co.nz



FIELD TESTS GRANULAR FERT vs FOLIAR FERT: which is better?

As a contractor spraying capital fertiliser onto his clients farms pasture using a Tow and Fert Multi 4000, Michael Smith was often asked about the benefits of foliar applied fertiliser. A number of questions from customers led him to conduct the following field test comparing granular fertiliser application with foliar fertiliser application.

THE TEST:

Paddock 13: *The less is more test:* Does applying less fertiliser in liquid form in a Tow and Fert render the same or better results than granular application?

METHOD:

- 01** Paddocks were selected based on the average from soil tests of the property. A 18x6 metre test area was fenced off and divided into three sections; the granular square, the control square and the Tow and Fert square.

02 Each area was mown to 1500 kg/DM/ha and fertilised in the two areas:

 - 100kg/ha of granular Urea.
 - 65kg/ha of foliar applied Urea in a Tow and Fert.
- 03** Once the paddock was due to be grazed a plate meter was used to measure each section (minimum 100 readings).

04 Each section then had a one square metre area mown and the clippings collected to be weighed.

05 The weight was taken and recorded.

06 Each section was then left until the next grazing when the process was repeated.

RESULTS:

After 33 days, the dry matter produced was 22% higher than that of granular Urea using 35% less fertiliser. However when you look at the grass grown per unit of Nitrogen applied (NRE) you will see the response of 332% more than granular application (NRE of 22.2 for the Tow and Fert and 6.6 for granular). By day 90 and after the 2nd application of fertiliser, the NRE of foliar applied Nitrogen was 570% higher than that of the area fertilised by granular Urea suggesting there was residual Nitrogen in the ground from foliar applied Urea.

CONCLUSION:

The results clearly show that foliar application of Urea with a Tow and Fert grows **more grass, more efficiently.**

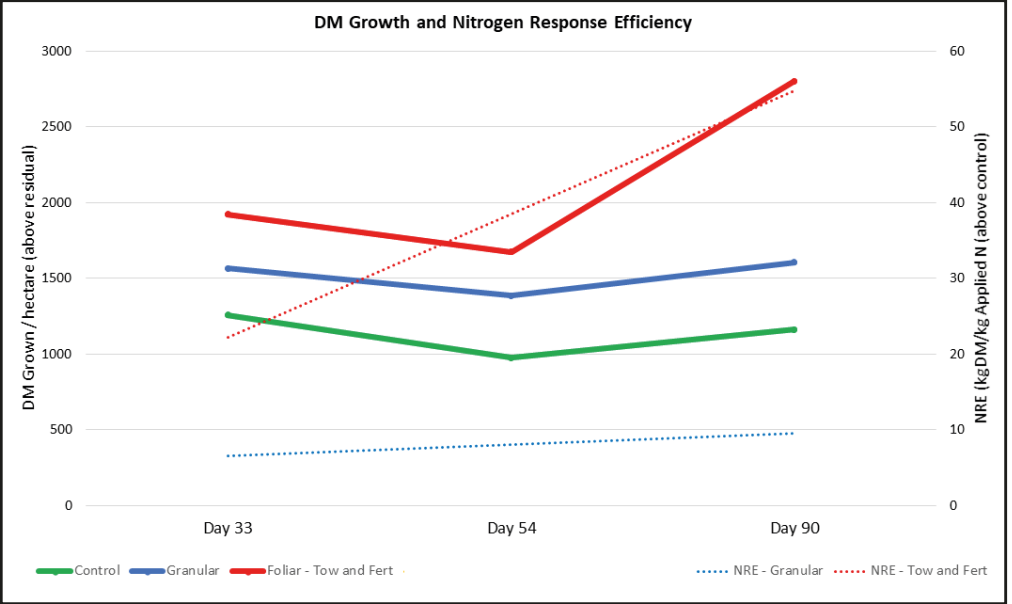
Michael Smith is a former dairy farmer, Tow and Fert contract fertiliser applicator and now Tow and Fert manager for the North Island.

For more of Michael's tests visit www.towandfert.co.nz or call 0800 337 447.

HOKONUI DAIRIES LTD 2014/2015 Paddock 13: THE LESS IS MORE TEST

Paddock 13	Day 1	Day 33	Day 54	Day 62	Day 90
Control square		1,259	975		1,164
Granular square 100kg/ha of granular Urea	Application on 1500kg/DM/ha	1,565 NRE = 6.6	1,386	Application on 1500kg/DM/ha	1,607 NRE = 9.6
Tow and Fert square 65kg/ha of foliar Urea – Tow and Fert		1,923 NRE = 22.2	1,675		2,803 NRE = 54.8

*Graph shows kg/DM/ha grown (above residual).
*NRE (Nitrogen Response Efficiency) is kgDM/kg N applied.



OVERSEER – Friend or foe?

Nutrient budgeting with Overseer has become a part of our daily job down on the farm. But does it work? Is it accurate? And can we really trust the outcomes it gives us?

Overseer has become a tool farmers have increasingly had to get used to using. As the focus in the general public arena has increasingly turned to the environment and the impacts of industrial dairy farming, nutrient budgeting has increasingly, and will continue to be, an essential part of farm management. We have seen over the last six months or so an increase in the publicity surrounding Overseer and its usability, accuracy and value to farmers.

Currently Overseer is the *only tool* that farmers have available to measure their inputs onto their farm compared to their outputs. Originally developed in the 1980's it was based on years of scientific research based around pastoral farming. However, as the environmental impacts of dairy farming have come to the fore, Overseer has increasingly been turned to by farmers, councils, regulatory bodies and even the government to measure the impact of certain agricultural activities on the land.

So does Overseer work? The short answer is yes, sort of.

The general consensus is that Overseer is the best tool (*it is currently the only tool*) we have for the job of nutrient budgeting and modelling, but it does have its limitations. As Overseer has begun to be used for regulatory purposes by councils, and its accuracy questioned for different types of farming including horticulture, these limitations have been highlighted by farmers ultimately resulting in the current coalition government committing \$5 million dollars over four years to enhance the science and scope of Overseer.

Is it accurate? The short answer is, kind of.

Overseer is based on sound science. However, there is still a lot of information and data that needs to be gathered and modelled for Overseer to be considered highly accurate. The most obvious of these is in the types of soil that the Overseer programme models. Currently there are only eight types of soil modelled. Additionally, how fertiliser is applied is another area where improvement is required. Currently the only option for applying fert is via a bulky in solid form with no consideration given to the use of liquid fertiliser application.

Can we trust the outcomes? The short answer is, yes and no.

With scrutiny of our profession and its environmental impact ever increasing, Overseer is simply one way for us to measure the impact of what we do on the land. It is the best available in a market place where action on cleaner farming practices is not only an obligation but is increasingly likely to be a regulation. So we have to use Overseer, it is more accurate than the alternative, using nothing. Not only that, as Overseer improves with its added investment and importance to the primary sector as a whole, it will work better, become more accurate and we will be able to increasingly trust the outcomes it gives us.

In the washup of all this then is Overseer a friend or foe? In our opinion it is more like that cousin or family member you might not quite get on with. They are family, so you get on with it and accept that that is just the way things are.

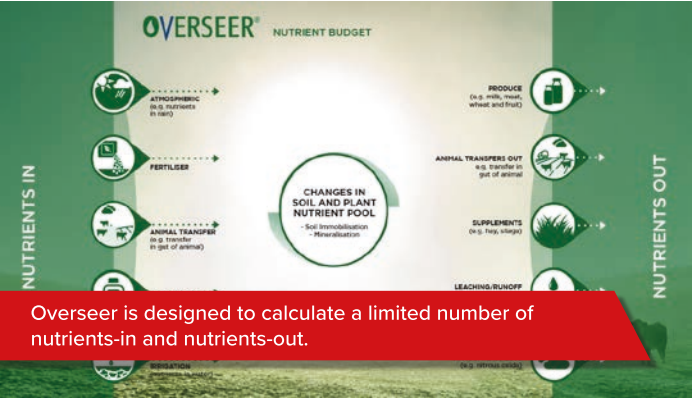
OVERSEER OVERSIGHT:

Application of fertiliser is currently only measured based on the solid application method and the associated environmental impact it has. By reducing the amount of fertiliser you apply by dissolving Nitrogen using a Tow and Fert you will reduce your inputs significantly.

Additionally, what **Overseer does not currently take into account is the significant reduction** in fertiliser lost into the ground through leaching and run off when applying your Nitrogen fertiliser as a liquid.

Studies have shown that this reduction, over solid fertiliser application, can be as much as 75%*.

*According to John Barnes, Director, Fertilizer NZ, www.fertnz.co.nz.



Fertiliser MYTHS BUSTED.

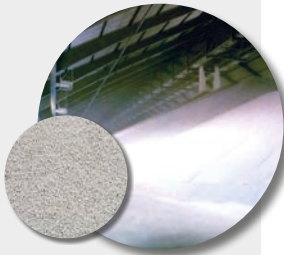
#01 IT'S ALL ABOUT THE PASTURE!

Whilst pasture is important to the production of milk and a profitable farm, dairy farming is a system where each element in the system; soil, pasture, animals, farmer, profit etc. intersect and rely on each other. Managing each and, all of these aspects requires an incredibly high skill level and knowledge base.



#02 NITROGEN, NITROGEN, NITROGEN!

We hear a lot about Nitrogen but most of us know that good healthy pasture requires good healthy soil. Good healthy soil requires a balance of nutrients to ensure healthy pasture for the animals to consume and to ensure good milk production.



#03 THE GOVERNMENT WON'T REGULATE!

Yes, we've actually heard this one thrown around the traps. One thing is certain, we do not know what the future will bring but we do know that we, as farmers, have to keep improving our practices. We can either wait for the regulators to tell us what to do, or we can future proof our farms by improving our practices, making them more efficient, better businesses all around.



“WE HAVE CUT OUR FERTILISER BILL IN HALF IN THE FIRST YEAR AND PRODUCED THE SAME AMOUNT OF GRASS”

Real world CASE STUDY

The return on investment in the Tow and Fert Multi 2800 for Miah Smith from Atiamuri will be less than 18 months.

Atiamuri in the central North Island is a place with hilly terrain traditionally suited to sheep and beef farming or forestry. So, it is a change to the norm to find Miah Smith and his family running a 350 hectare dairy farm with 530 cows.

When Miah and his wife Jenny first arrived on this land, they found a converted forestry block that was baron and dry with not much life in the soil, weeds and gorse running rife and a lot of work on the horizon. Over the course of the last seven years they have set about reestablishing the farm as a successful dairy operation and breathing new life into the soil and pasture.

Having started with a conventional approach to fertiliser application using approximately 150kgs of N per hectare Miah's results were proving frustrating. Searching for a new way of producing better results and growing more grass Miah decided to move away from the conventional fertiliser approach and to give biological stimulants, specifically seaweed products produced by AgriSea NZ, a go.

“We knew we wanted to regenerate the farm with biological stimulants and also reduce our Nitrogen use back to 50-60 kgs.” Application was the next piece of the puzzle and Miah new that the Tow and Fert would do what he wanted it to do but the terrain of the farm meant that the models Tow and Fert offered were either too small or too big.

Enter the Tow and Fert Multi 2800. At National Fielddays at Mystery Creek in 2018 Miah bought the very first Multi 2800 the team at Metalfarm had built. It was the perfect size for their farm and was built with a specification that enabled him to use it on the hills with relative ease. Miah has now managed to cover over 90% of the farm using the Tow and Fert 2800.

With Miah's unconventional approach to growing pasture, going down the biological stimulant route with AgriSea products, the Tow and Fert 2800 has meant that he is able to spray small seeds with the Tow and Fert 2800 such as Plantain, Chickory and Clover. These plants play an important role in Miah's system so being able to apply them in one-pass with his Nitrogen and seaweed products means he is saving considerable amounts of time.

Super Phosphates and DAP fertilisers have now been removed, replaced by the biological products which release these nutrients already in the soil making them plant available. All in all Miah has cut his fertiliser bill in half.

“We have cut our fertiliser bill in half in the first year and produced the same amount of grass. The Tow and Fert 2800 will be paid for in only one and half years. That's a good return on investment.”

“I am able to now go out and follow the cows 2 – 3 days after grazing giving the pasture an immediate boost. We have just as much grass saving half the fert costs and putting on extra seed is a real benefit to us because we are wanting to get a lot more

species into our pastures. Its just been so easy. We can put everything we need into one tank.”

“Its been really good to not lose any production and save money at the same time”.

“If any farmer's out there want to cut their N use, grow the same amount of grass, and save money like I have then this is definitely the way to go.”



Miah Smith, Dairy Farmer, Atiamuri, New Zealand

Key Stats: 530 cows | 350 hectares with 260 effective Tow and Fert Multi 2800

TOW AND FERT: THE ANSWER TO INCOMING ENVIRONMENTAL REGULATIONS?

Real world
CASE STUDY

Alistair Neville has a penchant for using technology for improving farming returns and the Tow and Fert is a big part of improving farm performance and environmental compliance.

The use of technology to improve farming practices and returns has always been something that Alistair Neville has had a passion and interest in. Whilst studying at Massey University he came across a paper advocating for the benefits of foliar applied fertiliser. He quickly latched on to the idea and came across the Tow and Fert range about six years ago.

Being an early adopter of the Tow and Fert, Alistair runs a Tow and Fert Multi 800 (now the multi 1000) and is quick to sing it's praises for the system they are running. "We are putting mostly Nitrogen through the machine, Urea and SOA mix or an N and Elemental Sulphur brew. We will also run Giberillic acid in the colder months."

Alistair is also making the move to an Autumn calving run to take advantage of the premium payout available from Fonterra for winter milking and to make the most of summer with his boat and bach.



"With us going into winter milking the Tow and Fert will be a key component of the whole system to grow as much grass as we can. So we will look to things like UAN. Another great thing about the Tow and Fert is the ability to put herbicide down whilst we do our N application. This will save me time".

Currently Alastair is using the Tow and Fert Multi 800 2 - 3 times a week following the cows. He is also able to make use of the excess green water on the farm as the base in which to mix the fertiliser brew. Some of the additional uses that Alistair has found for the Tow and Fert Multi 800 include using it as a trash pump, cleaning culverts and troughs and every now and again giving the garden a bit of help with some green water as well.

Environmentally speaking Alistair is well aware of the benefits being achieved. "We need to be environmentally friendly and with new environmental regulations coming in we need to be smarter about how we use our fertiliser, especially Nitrogen, and I think the Tow and Fert is the answer to quite a lot of that."

“I recommend to those in environmentally sensitive catchments to seriously look at a Tow and Fert.”

It's a simple way to get more out of your fertiliser inputs, cut down your current N use, and still get the same benefits as you would from what you have been doing."

And of the Tow and Fert team, Alastair has this to say: "we have been dealing with the Tow and Fert team for six years and the backup service has been second to none. The new service program means we are getting a regular service, once or twice a year and there has always been a quick turnaround. It's an easy machine to keep tidy and is low maintenance."

Moving forward Alastair still has his eye on technological improvements. He is eyeing up a new milking shed with all the bells and whistles and is keen on taking the new Tow and Fert Multi 2800 for a spin.

"In terms of other machines on the market there is really no other. In terms of build-quality and mixing-quality there is really nothing on the market that is even near it. At this stage the Tow and Fert is the only machine you can look at".

“Tow and Fert have really nailed it with a machine that can both mix and spray.”



Alistair Neville, Dairy Farmer, Reporoa, New Zealand

Key Stats: 150 cows | 150 hectares
Tow and Fert Multi 800

THE FACTS AND THE FIGURES

Your farm is a business, it's your livelihood and as costs seem to be on a never ending upward spiral it's important to find ways to reduce costs, boost profitability and increase milk productivity.

Nitrogen applications are costly, yet when you consider how much of your solid Nitrogen is being wasted into the air during application, or simply not dissolving into the ground, then finding a better, more efficient and cost saving way to apply N fertiliser is a win all around.

At Tow and Farm we've been working on a better, more efficient way of applying Nitrogen fertiliser to paddocks and pasture. Developed in Dannevirke, New Zealand, the Tow and Fert range of Spray Machines enables the benefits of liquid application of dissolvable Nitrogen fertiliser and other minerals to be obtained whilst significantly reducing the cost of N. In fact, our clients already report savings on N fertiliser costs of up to 50% from day one, for the same result in pasture growth.

To put this into perspective from a profitability point of view, on a typical farm of 150 hectares milking 400 cows, a typical application of granular Urea at 80kg/ha six times a year would equate to approximately 72 tonne of Urea equalling approximately \$43,000. If it were to be dissolved and applied as a foliar spray in the Tow and Fert, then the annual saving on Nitrogen alone could be up to \$21,500.

From an environmental point of view, the N escaping into the environment, as ammonia, leached beyond the plant's root zone or as the greenhouse gas, Nitrous oxide, would be largely eliminated because the Urea will not enter the soil but is directly absorbed by the leaves where it lands.

Tow and Farm developed Tow and Fert, a fertiliser applicator, to quickly dissolve normal granular Urea in cold water on the way to the paddock which means turning Urea into a dissolved foliar spray is quick, convenient and most of all more cost effective and environmentally responsible. With specific agitation patents and boom recirculation technology, the Tow and Fert doesn't only dissolve soluble products, but can also keep insoluble products like fine lime or RPR in suspension which means you can do one-pass applications eliminating the need for another pass across your farm. This includes animal health products, soil amendment products, weed-spray, humates, gibberellic acid and even small seeds.

You will know that grass is the cheapest form of feed.

“The Tow and Fert is a key part of significantly reducing input costs whilst also reducing your environmental footprint and increasing your ability to meet regulations. Quite simply it's a win-win all around.”

Talk to the team at Tow and Farm today about a real life working demonstration on your farm today. Call 0800 337 747.

The Tow and Fert range LIQUID FOLIAR SPRAY MACHINES

THERE IS ONE FOR YOUR FARM



Multi 1000



Multi 1200



Multi 2800



Multi 4000

THE BENEFITS OF OWNING A TOW AND FERT:

- Save on fertiliser costs
- Reduce nutrient loading
- Improve grass quality
- Improved soil health
- Better animal health
- Better milk productivity

For more information or to BOOK A FREE on-farm DEMONSTRATION

CALL 0800 337 747

or email

dairy@towandfarm.co.nz

The Tow and Fert A MACHINE FOR ALL FARMS



A one-pass solution.



Load solid Nitrogen and quickly dissolve in liquid.



There is one for all farm sizes.

TOW AND FARM
BY METALFORM

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