

Crafty FOX

Jaiden Drought tests the Hustler Spraysmart liquid sprayer, which is helping one Taranaki farmer keep on top of production



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With land prices rising and the growing intensification of dairy units – an increase in production has become essential for servicing debt. This in turn has resulted in the need to either spread more nitrogen to grow more grass, or import feed for the high numbers of livestock.

In terms of nitrogen application, this was once limited to granular urea in one form or another. Scientists then figured that this could be done with a product called Gibberellic acid. It's found naturally in plants, and when applied in small amounts, functions as a growth hormone.

It can be used to stimulate and increase growth but can also protect plants from frost. This essentially brings forward two to three weeks of growth to allow farmers to fill a feed pinch. It's a very different product from urea because it only lasts one grazing and turns the pasture yellow, whereas nitrogen can last up to three grazings (depending on conditions) and turns the grass a deeper green.

In addition to Gibberellic acid being spread in liquid form there is now the opportunity to spray liquid nitrogen at the same time. The success of this combination has seen a dramatic increase in farmers using it, allowing them to do two jobs in one pass. It not only saves time and money, but also allows farmers to let two quite different growth promoters do their individual jobs.

Unlike urea, which is easily applied – there are a couple of things you need to keep in mind when using Gibberellic acid. Firstly, plants can build up a tolerance to it and spraying on the same paddock more than twice in a season will see the responses drop off. Secondly, it should be applied less than five days post-grazing in a soil temp range of 7-13°C.

The benefit of spraying a liquid fertiliser rather than applying it in granular form is that the plant's uptake of the nutrients is significantly quicker because they absorb the nitrogen more rapidly. They don't have to wait for the granular product to breakdown before it can be absorbed into the root structure.

Seeing the benefit of this has resulted in farmers inquiring after larger, high-spec sprayers to cover more ground more quickly. These sprayers allow the farmers to do the jobs themselves (they're traditionally carried out by contractors).

Hustler Engineering has a long history building farm machinery in New Zealand and is probably associated with bale clamps and bale feeders rather than sprayers. But more than 50 years ago Hustler made its very first sprayer and, like the rest of its products, the latest SPRAYSMART range is very impressive.

Although most of the range is manufactured overseas and assembled here in New Zealand, customers can take comfort in the fact that these sprayers and components have been hand-picked by Hustler, based on structural integrity and ease of use. The range has also been subjected to plenty of testing here in New Zealand, and a large range of spares is on hand.

Cue this month's test: we are in coastal Taranaki where Chris Putt has been using his SPRAYSMART Fox 1500 for the past 12 months and is delighted with it.

Chris bought the sprayer for the reasons I alluded to earlier: he can apply Gibberellic acid and liquid nitrogen products when he chooses, without having to wait for a contractor. Over the past year he has sprayed more than 1000ha. Based on hourly rates for a contractor, the sprayer has more than paid for itself.

The Fox range is manufactured by Italy's Caffini. It is one of the world's largest sprayer manufacturers, employing more than 3000 people and investing millions of dollars on R&D to improve its product.

The Fox 1500 is equipped with a 12m boom and was the obvious choice for Chris as his main requirement was a large tank, allowing him to spend more time in the paddock. The 1500L capacity is the largest of all the linkage-mounted sprayers, and has the option for an additional 1000L front-mounted tank.

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The Tank

The incorporation of a 18-litre, hand-washing tank and 80-litre clean water tank with a three-way valve also allows users to keep chemicals off their hands, particularly if you spec the tank with the Venturi tank filler c/w five metre filling hose and filter. This allows you to refill the tank from a fresh water source anywhere on the farm.

The 80L cleaning tank allows you to rinse the tank after spraying roundup, and if you want to switch to fertiliser there's no trace of the herbicide in the tank (you may also want to clean out the nozzles, just in case).

Inside the tank are the high volume, infinitely variable, twin-turbo Venturi mixing agitators ensuring you get a consistent mix of chemicals without inducing foaming. The tank is surrounded by a heavy-duty, hot-dipped galvanized chassis, which links to the back of the tank to add strength to the boom lift function at the rear of the tank (see boom section).

Pump and Valves

The Fox 1500 test tank was specified with the 130l/min Comet diaphragm pump (these are also available in 180, 215 and 280l/min versions depending on you application requirements).

Coupled with the anti-drip, air induction nozzles on the boom, the combination created a consistent application rate with little spray drift even though there was a gentle (for Taranaki standards) on-shore sea breeze. The boom was almost 1.5m off the ground.

What is called the “Hub service” is located on the side of the tank with two multifunction valves, a self-cleaning filter as well as a fold-down ladder for loading the tank manually. The optional chemical mixing hopper is neatly located under



- Boom agility
- Large 1500L tank capacity
- “Hub” valve cluster
- Auto-rate controller
- Boom-locking system
- Hydraulic boom height adjustment
- Venturi variable agitators



- Solenoids are uncovered, prone to corrosion
- Wire rope boom suspension should mount to the boom for strength

Specifications Spraysmart Fox 1500

Capacity	1500L
Boom width	12-18m
Pump capacity	130L/min
Washing tank	80L
Hand was tank	18L

the “Hub service centre” located on the side. This is ideal as all the components are located in a central location. They're easy to use and are clearly coded with diagrams on each valve.

The only improvement I could identify are the valves mounted to the side of the left-hand linkage arm. They are right in the path of mud coming off the tractor tyre. The same applies to the solenoids on the back of the tank for the electronic boom sections. Both could be covered to prevent corrosion.

Chris has spec'd his sprayer with a foam marker for added accuracy. This is located on the opposite side of the sprayer from the “Hub” and is adjustable by simply turning a small nozzle to vary the amount of foam based on the operator's requirements. The in-cab controller for this is separate to that of the sprayer.

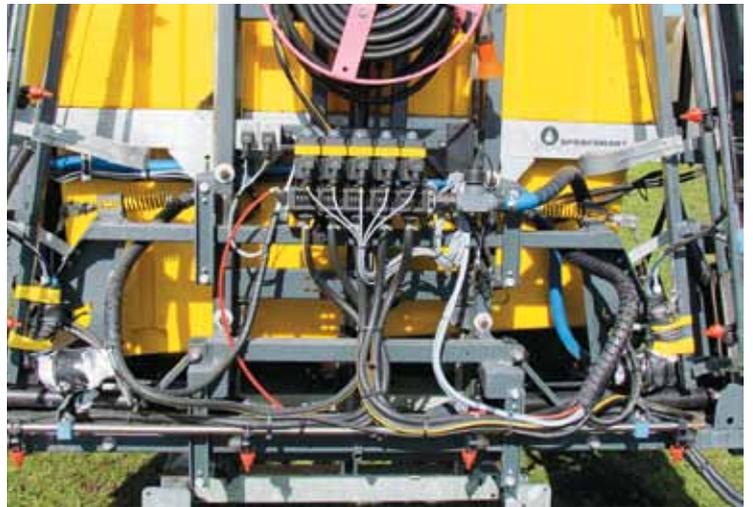
The Boom

This boom is by far the best set-up I have come across to date – it carries everything you could ever want and more. Both Chris and his right hand man John (who between them do all the spraying) can't speak highly enough of its flexibility and user-friendliness.

The 12m boom on the test tanker was equipped with the hydraulic lift feature, which is excellent for lifting or lowering the boom around obstacles in the paddock. The boom is not directly mounted to the tank – it is run through a sway arm type setup allowing sideways movement in a pendulum-style motion.

This used in conjunction with the self-levelling and suspended system, and creates a unique setup. The suspension uses wire ropes to take the weight of the boom, reducing the stresses on the rear of the tank. The ropes go to the hinge point between the two sections and are relayed back through shock absorbers mounted on the rear of the chassis.

The self-levelling feature is also run through a rope-and-pulley system with a patented, automatic locking system. Once one side is lifted, the wire rope is pulled tight and locks one side of the boom in. This allows the operator to spray with just one of the booms down and he still has



all of the suspension and self-levelling luxuries. This is due to the boom balancing itself by locking the one side tight yet allowing the other side complete flexibility-genius. Located on the outer sections of the boom is the break-away feature. It's also aided by a steel loop two feet in from the end of the boom. When it comes into contact with an obstacle, the outer section moves either up, forward or backwards.

This is works very effectively on a 12m boom but on larger booms (particularly those of 28m), this outer section would be 12m away from the tractor, severely accentuating any small bumps you hit, making this a must-have accessory.

The only problem Chris has had with the sprayer is the bolt that holds the wire suspension onto the boom (it's also the bolt that hinges the two outer sections). This may be better located on the boom itself (it currently places a lot of weight on the end of the bolt, causing it to shear off). Other than this small issue, the boom is of excellent quality and design.

The Monitor

Chris opted for the auto-rate spray controller, designed and made by Germany's Muller.

This allows him to switch off any of the boom's five sections (it can do up to nine on the larger boom) electronically from within the cab at the touch of a button.

This also allows you to increase or decrease the application rate, and when coupled with a ground speed sensor it will do this automatically. The monitor also displays your speed, tank level, hectares sprayed, as well as keeping a cumulative total. On top of the monitor is the foam marker controller, which allows you to turn on either one or both foam markers with a little toggle switch. The monitor's clear LCD screen is easy to read and buttons are well laid out for easy use.

The Verdict

I would buy this sprayer based on the boom design alone. I was extremely impressed by its agility and flexibility because booms are usually the first things to get smashed off the back of any sprayer. The large 1500L tank capacity in conjunction with the valve "Hub" and auto-rate controller make it very simple to use and allows you to spend more time spraying and less time filling. ■

Others in this class

Specifications Silvan Slimline 1200

Capacity	1200L
Width	2200mm
Height	2300mm
Depth	1200mm
Boom width	6-15m
Pump capacity	121l/min
Washing tank	100L
Empty weight	220kg

Specifications Sprayrite Tempo 1201

Capacity	1258L
Width	1850mm
Height	2120mm
Depth	900mm
Boom width	15-18m
Pump capacity	N/A
Washing tank	127L
Empty weight	375kg