

Precision Agriculture in the paddock – grower experience

Geoff Brosnan, 'Plainlands'

Biloela, Queensland

Farming area: Geoff and his brother Tim farm 1700 hectares (ha) at Biloela and are leasing 'Royles', a 1300ha property 85km north-west of Dingo.

Crops: Sorghum in summer and Wheat and Barley in winter when opportunity arises. Some pulses grown occasionally.

What changes have been made?

'Originally we were using a Miller Nitro 36m self-propelled boom but had heard about the savings that could be made using spot spraying technology in fallow sprays. We started to do our research and decided that the WeediT was the way we wanted to go,' says Geoff.

'We looked at other optical spot spraying technology, however, leasing 'Royles' meant that it was important that we were able to transport our equipment easily between properties as they are 2085km apart,' says Geoff.

As the Croplands WeediT doesn't fold up, Geoff decided to invest in a 36m Hayes trailing boom which has a cradle the boom folds backwards into.

'Hayes were willing to fit the boom to suit our needs and made the brackets for the WeediT technology,' says Geoff.

As well as this, WeediT parts are stocked in Biloela making repairs and maintenance easier.

Geoff's Hayes boom has WeediT red-light technology fitted and has a 6000L tank. His John Deere 8530 front wheel assist (FWA) tractor also has a 1500L tank where Geoff has installed an extra line so that he can use both tanks at the same time, allowing him to apply a residual in a blanket application using the larger tank whilst spot spraying out of the smaller tank.



Figure 1: Brosnan's Hayes trailing boom fitted with WeediT technology. Photo: Hayes.

Geoff is still using the Miller Nitro for in-crop sprays and blanket sprays, with the WeediT being purchased due to the savings that could be made in chemical and ease of transport.

'Having the WeediT technology fitted onto the Hayes boom means it can be folded up to fit on the back of our truck so we can transport it between properties easily.'

Benefits

Geoff has seen a huge saving in chemical since using his new boom.

'It depends on rain but we have gone from spraying the whole paddock to spraying 18% in our first spray and now only spraying 6-8% of the paddock,' says Geoff.

Geoff estimates in a 100ha paddock doing a blanket spray of glyphosate and 2,4-D amine and a wetter using his old boom would cost him \$11/ha. Using his Hayes WeediT boomspray he doesn't use 2,4-D amine as it antagonises the glyphosate and so uses extra glyphosate instead as it does the same job.

This costs him \$1.40/ha, meaning he is saving \$9.60/ha. However, 'you have to remember it takes 2.2 times longer to spray each paddock so there is some cost there to take into account as well,' he says.

He can do the whole 1700ha at Biloela using the 6000L tank which has also allowed him to use more expensive chemicals with different modes of action to aid in reducing herbicide resistance in his paddocks.

‘Feathertop Rhodes Grass has been getting harder and harder to control so being able to rotate in new herbicides that we couldn’t afford in our previous program has been crucial.’

He has also been able to do 18km/hr in his paddocks and has had no trouble going over contours or washouts as the gauge wheels are suspended and don’t touch the ground. The Hayes boom also has a hydraulic levelling system that maintains optimal boom height which allows the camera sensors to operate successfully. The cameras are spaced 1m apart and control four nozzles to enable an optimised detection zone that more accurately finds weeds in the paddock. The boom can also be adjusted up and down from 0.9m-2.5m above ground.

Geoff paid \$360,000 for his Hayes WeediT trailing boom and estimates with an average season it will take him 3 years to pay it back.



Figure 2: Extended 36m Hayes trailing boom. Photo: Hayes.

Issues

So far Geoff has not had any issues with the WeediT. However, he has made some changes to the timing in relation the distance

when the nozzles switch on and off between when he first got the machine.

‘The nozzles were spraying 100mm either side of the weed, but I have now changed this to 150mm, meaning the nozzle now sprays for longer than what it was to improve the chances of killing the weed. It does mean slightly more chemical is used but if it was missed then it would be hit with more chemical the second pass anyway,’ he says.

He’s also anticipating some issues with shading in sorghum stubble and has cut it lower than normal at harvest. However, the nozzles on his boom are mounted 800mm, whereas they are 650mm on the Croplands WeediTs. As a result, there should be less shadowing which should improve the accuracy of spot spraying weeds in taller stubble.

Future opportunities

Geoff is currently happy with how the boom is running. However, as the WeediT monitor is very basic, so he is going to get a flush switch fitted on the tank so as the tank can be flushed without having to hop back into the cab.

Recommendations

The biggest recommendation Geoff can give is to ‘Go and see the bank man and get one. The sooner you get it, the sooner you start saving on your chemical.’

Geoff also suggests that if you’re wanting a similar set up then to get a second-hand trailing rig, strip it down and get the technology fitted to save money. ‘It will still get the job done and it will be lighter on the pocket.’