

Outlook Ag Pty Ltd
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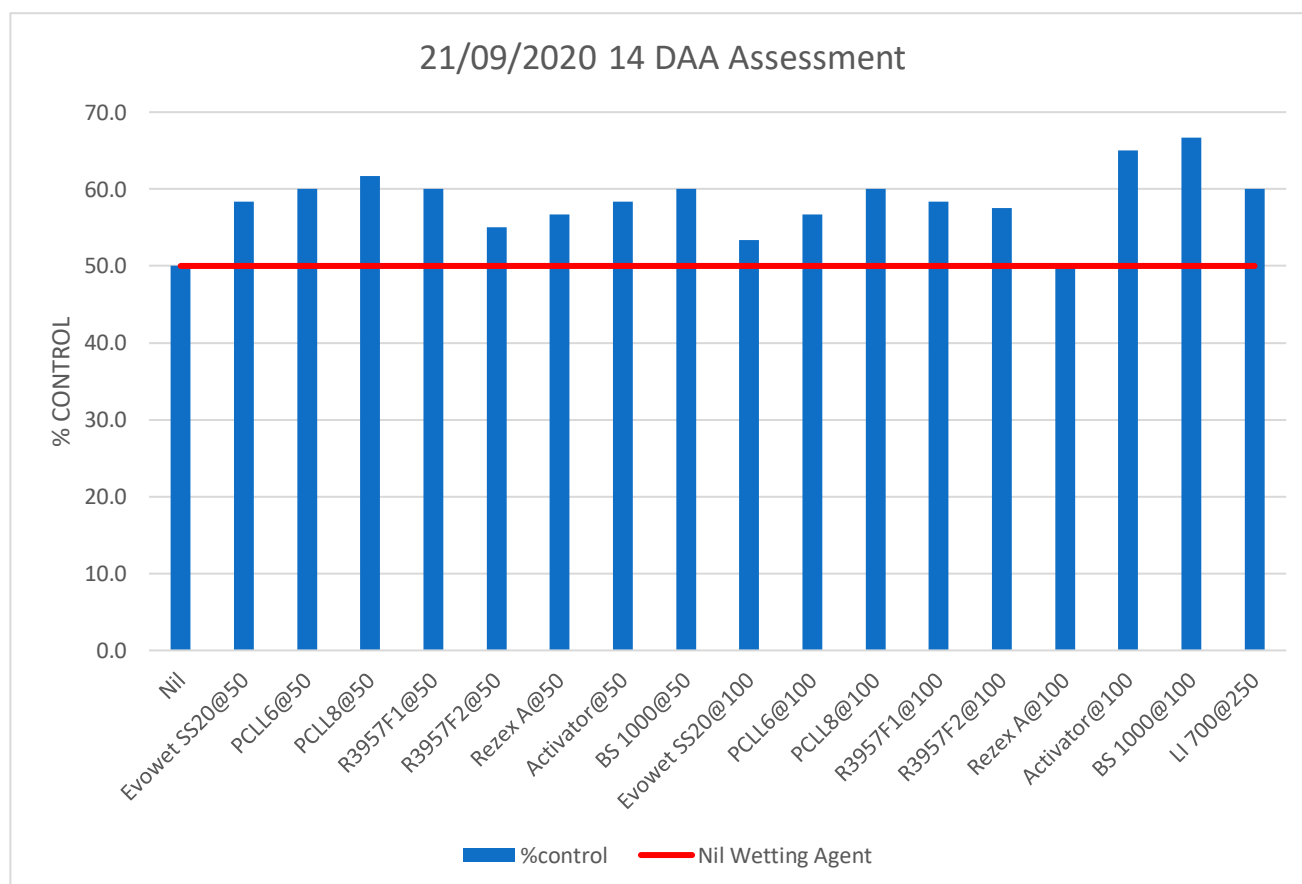
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Outlook Ag has conducted four small replicated plot trials and one strip for Raymond Roberts of Advanced Wetting Technologies. All trials have been looking at the use of different wetting agents with glyphosate mixes and comparing the commercial product that we commonly use in the current farming system, that product is BS 1000 and is predominantly the most common wetting agent used in the Australian agricultural industry.

The current trial being conducted is looking at 6 experimental wetting agents and 3 commercial wetting agents mixed with Glyphosate and has been sprayed on wheat plots. The glyphosate has been applied at a sub lethal rate of 500ml/ha so the power of the wetting agent can be easily assessed in this trial.

Early results look to be trending towards previous data with the lower rate outperforming the higher rate. This trial will run for the next month and be assessed fortnightly.

The graph below was the first assessment conducted 14 days after application (14DAA).

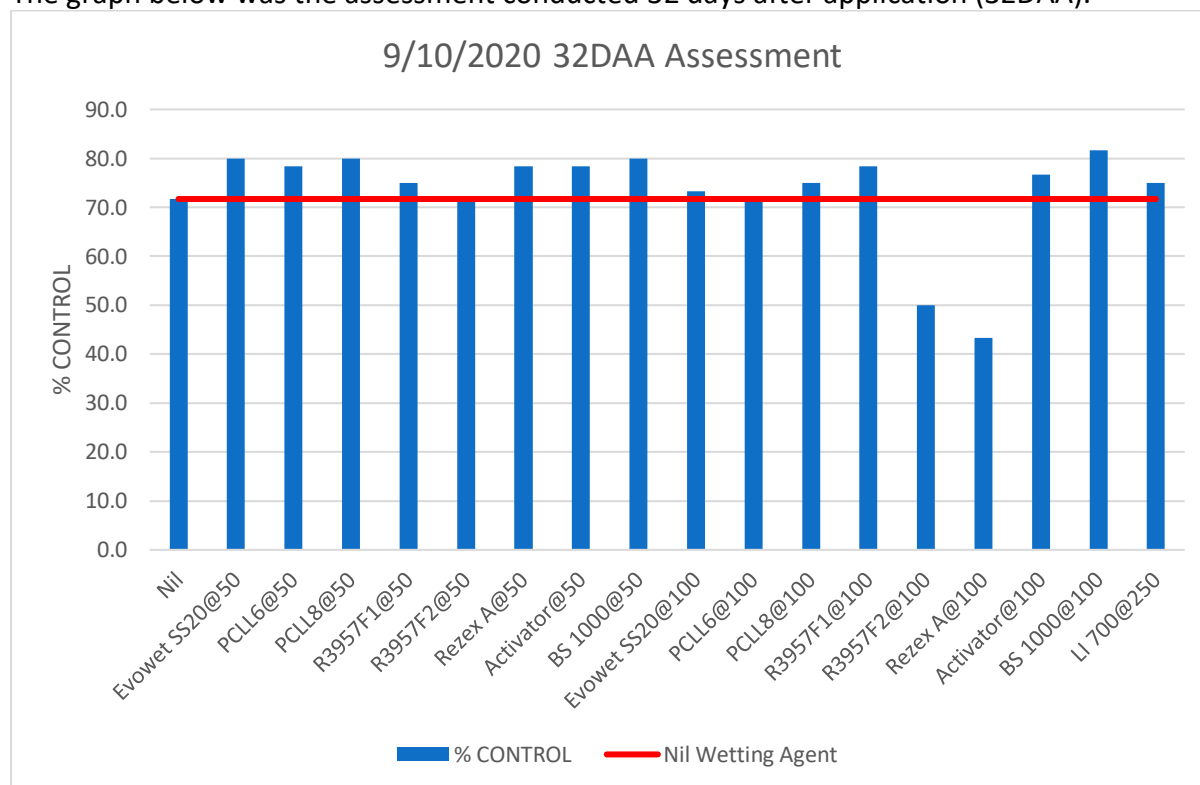


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The graph below was the assessment conducted 32 days after application (32DAA).



Recommendations:

From the latest assessment we can conclude that there is a significant reverse rate response within all experimental products. The data is suggesting that the experimental products Evowet SS20 and Rezex A are providing similar control to the commercial standard of BS 1000.

Going forward products SS20 and Rezex A need to be further examined in the next trial with glyphosate at 3 rates 25, 50 and 100 ml/100L. As there is a reverse rate response, we need to determine whether the 25ml rate will give greater control. Awnless barnyard grass, milk thistle and pigweed will all be assessed in the next trial.

We will also investigate how these products react with paraquat in a separate trial on the same weeds, as paraquat is a contact herbicide will these wetters increase the efficacy.

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Treatment List

Treatment	Water Quality	Adjuvant	Adjuvant Rate ml/100L Water	Product	Rate ml/Ha
1	AMS+Bore Water	Nil		Glyphosate 450	0.25
2	AMS+Bore Water	Evowet SS20	50	Glyphosate 450	0.25
3	AMS+Bore Water	PCLL6	50	Glyphosate 450	0.25
4	AMS+Bore Water	PCLL8	50	Glyphosate 450	0.25
5	AMS+Bore Water	R3957F1	50	Glyphosate 450	0.25
6	AMS+Bore Water	R3957F2	50	Glyphosate 450	0.25
7	AMS+Bore Water	Rezex A	50	Glyphosate 450	0.25
8	AMS+Bore Water	Activator	50	Glyphosate 450	0.25
9	AMS+Bore Water	BS 1000	50	Glyphosate 450	0.25
10	AMS+Bore Water	Evowet SS20	100	Glyphosate 450	0.25
11	AMS+Bore Water	PCLL6	100	Glyphosate 450	0.25
12	AMS+Bore Water	PCLL8	100	Glyphosate 450	0.25
13	AMS+Bore Water	R3957F1	100	Glyphosate 450	0.25
14	AMS+Bore Water	R3957F2	100	Glyphosate 450	0.25
15	AMS+Bore Water	Rezex A	100	Glyphosate 450	0.25
16	AMS+Bore Water	Activator	100	Glyphosate 450	0.25
17	AMS+Bore Water	BS 1000	100	Glyphosate 450	0.25
16	AMS+Bore Water	LI 700	250	Glyphosate 450	0.25

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Drone Shot of Rep 1 14DAA

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Row 1 Treatments 1 to 5 LtoR**Drone Shot of Rep 1 32 DAA**

1	Rezex A	25ml/100L	Paraquat 1.1L/ha
2	Rezex A	100ml/100L	Paraquat 1.1L/ha
3	Rezex A	250ml/100L	Paraquat 1.1L/ha
4	EvoWett	25ml/100L	Paraquat 1.1L/ha
5	EvoWett	100ml/100L	Paraquat 1.1L/ha
6	EvoWett	250ml/100L	Paraquat 1.1L/ha
7	BS 1000	250ml/100L	Paraquat 1.1L/ha

**Paraquat + Wetting Agent
Strip Trial**

A small strip trial was conducted on awn less barnyard grass near Narrabri NSW. The trial was looking at different wetting agents at increasing rates used with Gramoxone 360. This trial was un-replicated and conducted in strips and the protocol reflected the double knock situation of the grass weeds.

In this strip trial we found that there was a reverse rate response in wetting agents with the lower rate looking to out perform the higher rate. As this was a strip trial we can not conclude the data with significance, however it supports previous trial results in the lower wetter rates give better efficacy. Also found in this strip trial the lower rates provided better control compared to the BS 1000.

Pictures Below:

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EvoWett 25ml/100L



EvoWett 100ml/100L



EvoWett 250ml/100L



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Rezex A 25ml/100L



Rezex A 100ml/100L



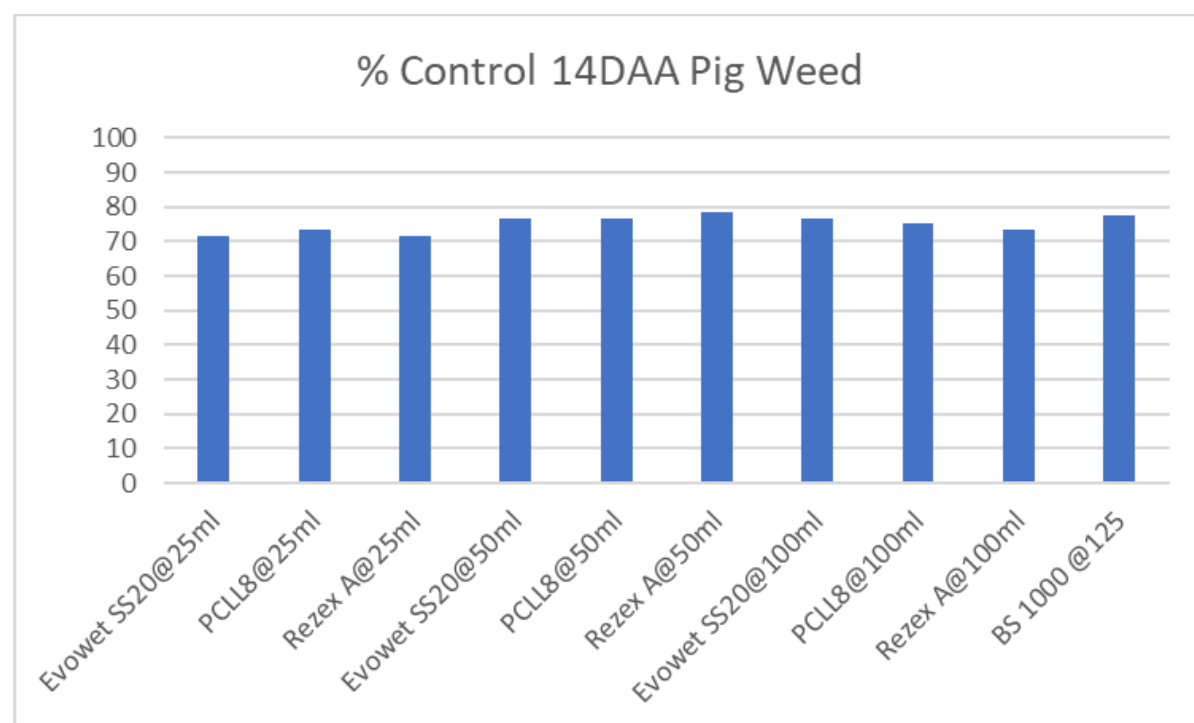
Rezex A 250ml/100L



Another small plot trial was conducted near Narrabri. The trial was looking at the weed species red pig weed. The trial again was looking at dose rates of the experimental wetting agents.

Treatment List

Treatment	Water Quality	Adjuvant	Adjuvant Rate ml/100L Water	Product
1	AMS+Bore Water	Evowet SS20	25	Glyphosate 450 @1.5L/ha
2	AMS+Bore Water	PCLL8	25	Glyphosate 450 @1.5L/ha
3	AMS+Bore Water	Rezex A	25	Glyphosate 450 @1.5L/ha
4	AMS+Bore Water	Evowet SS20	50	Glyphosate 450 @1.5L/ha
5	AMS+Bore Water	PCLL8	50	Glyphosate 450 @1.5L/ha
6	AMS+Bore Water	Rezex A	50	Glyphosate 450 @1.5L/ha
7	AMS+Bore Water	Evowet SS20	100	Glyphosate 450 @1.5L/ha
8	AMS+Bore Water	PCLL8	100	Glyphosate 450 @1.5L/ha
9	AMS+Bore Water	Rezex A	100	Glyphosate 450 @1.5L/ha
10	AMS+Bore Water	BS 1000	100	Glyphosate 450 @1.5L/ha



Treatment differences were minimal in this trial however similar trends were seen in this trial to others previously done. We wanted to look at the wetting agent at a very low dose rate to see how low we can go with the rate, the data trended towards the rate being to low. A reverse rate response also trended between the 50ml and 100ml rate which again we found in other trials. Compared to the commercial standard BS 1000 (125ml/100L) the 50ml/100L water rate looked to be similar with Evowett and PCL 8 however the Rezex A looked to show better efficacy.

The next trial will be put down in the next few weeks, the protocol is shown below in the table. In this trial we will be looking at the 50ml rate of the wetting agents compared to BS 1000, we will also be experimenting with the glyphosate dose rate to see if there will be an interaction between products.

Treatment	Water Quality	Adjuvant	Adjuvant Rate ml/100L Water	Product	Rate ml/ha
1	AMS+Bore Water	Evowet SS20	50	Glyphosate 450	2000
2	AMS+Bore Water	PCLL8	50	Glyphosate 450	2000
3	AMS+Bore Water	Rezex A	50	Glyphosate 450	2000
4	AMS+Bore Water	BS 1000	100	Glyphosate 450	2000
5	AMS+Bore Water	Evowet SS20	50	Glyphosate 450	1500
6	AMS+Bore Water	PCLL8	50	Glyphosate 450	1500
7	AMS+Bore Water	Rezex A	50	Glyphosate 450	1500
8	AMS+Bore Water	BS 1000	100	Glyphosate 450	1500
9	AMS+Bore Water	Evowet SS20	50	Glyphosate 450	1200
10	AMS+Bore Water	PCLL8	50	Glyphosate 450	1200
11	AMS+Bore Water	Rezex A	50	Glyphosate 450	1200
12	AMS+Bore Water	BS 1000	100	Glyphosate 450	1200

Treatment	Water Quality	Adjuvant	Adjuvant Rate ml/100L Water	Product	Rate ml/ha
1	AMS+Bore Water	Evowet SS20	50	Glyphosate 450	1500
2	AMS+Bore Water	PCLL8	50	Glyphosate 450	1500
3	AMS+Bore Water	Rezex A	50	Glyphosate 450	1500
4	AMS+Bore Water	BS 1000	125	Glyphosate 450	1500
5	AMS+Bore Water	Evowet SS20	50	Glyphosate 450	2000
6	AMS+Bore Water	PCLL8	50	Glyphosate 450	2000
7	AMS+Bore Water	Rezex A	50	Glyphosate 450	2000
8	AMS+Bore Water	BS 1000	125	Glyphosate 450	2000
9	AMS+Bore Water	Evowet SS20	50	Glyphosate 450	2500
10	AMS+Bore Water	PCLL8	50	Glyphosate 450	2500
11	AMS+Bore Water	Rezex A	50	Glyphosate 450	2500
12	AMS+Bore Water	BS 1000	125	Glyphosate 450	2500

A small plot trial was established at Narrabri on a population of milk thistle. In this trial we looked at the 50ml rate of the wetting agents compared to BS 1000 at 125ml/ha with increasing dose rates of glyphosate. This concluded a clear trend that PCLL8 provided higher levels of control on milk thistle compared to BS 1000. The data is shown in the graph below as well as the ANOVA table. The data was checked for normality of variance, a fundamental assumption of analysis of variance.

The ANOVA firstly shows that there was no interaction between adjuvant type and dose of Roundup. However there were clear trends when both were analysed as main effects. The probability that the effect of adjuvant type on percentage kill was 0.231 in other words that the probability that this was a chance event is 23.1% so the probability that adjuvant type had on percentage kill is 76.9%, and for Roundup rate it is also the probability was 76.8%.

PCLL8 and BS1000 were tested for compatibility and stability with Tordon 242 and the fungicide chlorothalonil over 24 hours and there was no difference between the two adjuvants.

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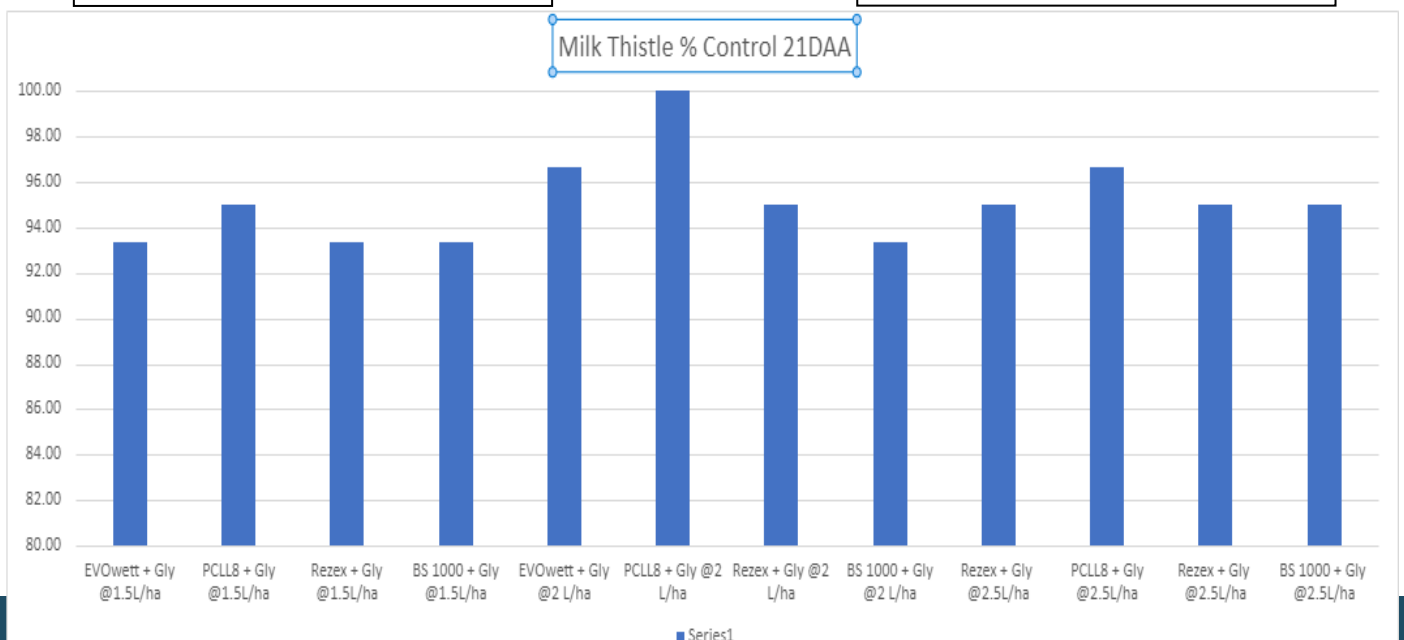
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Glyphosate 2L/ha + PCLL8
50ml/100L
21DAA



Glyphosate 2L/ha + BS1000
125ml/100L
21DAA



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**** Analysis of variance ****

Variate: Percent killed observed on 25th May 2021 with interaction

Source of variation <i>Effect</i>	d.f.	s.s.	m.s.	v.r.	F pr.
Adjuvant 0.769	3	57.64	19.21	1.54	0.231
Roundup rate/ha 0.768	2	38.89	19.44	1.56	0.232
Adjuvant x Roundup rate/ha	6	27.78	4.63	0.37	0.891
Residual	24	300.00	12.50		
Total	35	424.31			

***** Tables of means *****

Variate: Percent killed observed on 25th May 2021

Grand mean 95.14

Adjuvant	BS1000 93.89	Evowet SS20 95.00	PCLL8 97.22	Rezex A 94.44
Roundup rate/ha	1500 93.75	2000 96.25	2500 95.42	

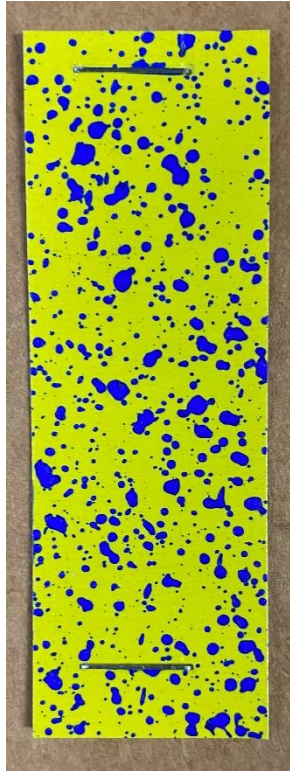


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PCLL8 Under Boom



PCLL8 Edge of Boom



PCLL8 1m from Boom



BS1000 Under Boom



BS1000 Edge of Boom



BS1000 1m from Boom

The spray pattern of PCLL8 and BS 1000 was compared on water sensitive paper using a small plot boom at 80L/ha. From the images on the previous page, we can see that the droplet spectrum seems to be more consistent in the PCLL8 under the boom compared to the BS1000.

A difference to note is there is a larger number of fine droplets in BS 1000 compared to PCLL8, this is evident in the photos on the previous page especially 1 meter away where there is only 1 fine droplet resulting from PCLL8 and hundreds from BS1000. In addition there were many more fine droplets with both of the locations for BS1000 than with PCLL8.

A detailed testing of spray drift will be undertaken at the University of Queensland wind tunnel facility under Andrew Hewitt, the results of which should be available in 4 – 6 weeks. The following are the formulations being used with three different nozzle types at a water rate of 100L and possible two pressures will be added to the design. The design will be fully orthogonal.

Products No.	Product	Product rate
1	Roundup Ready PL	1.91 L/ha
2	Xtendimax 2	1.17 L/ha
3	Gravitate 707	0.5%
4	Intact	0.5%
5	On-Coarse	0.25%
6	PCLL8 (AWT)	0.05%
7	LI700	0.25%
8	BS1000	0.125%

As a result of all of the trials, Outlook Ag Narrabri is going to recommend to it's clients that PCLL8 once it is registered with the APVMA be used in lieu of BS1000 and LI700.

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