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ELDERS TRIAL RESULTS BOOKLET

2015



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EVALUATION OF ANNUAL RYEGRASS CONTROL OPTIONS IN RT CANOLA



INTRODUCTION

The trial near Grass Valley, WA in 2015 evaluated a range of commercially available herbicides and application timings for best control of annual ryegrass (*Lolium rigidum*) in dual tolerant (RT) canola Hyola 525 RT.

Herbicide application timing included incorporated by sowing (IBS), post-sowing – pre-emergent (PSPE) and post-emergent applications at both 2-4 leaf and 4-6 leaf growth stages.

Results indicate that product choice and timing can impact ryegrass control and canola yield.

SOWING DETAILS		
Seeding Date	30/4/2015	
Variety	Hyola 525 RT	
Seeding Rate	3kg/ha	
Nutrition	Pre	100kg/ha Gusto Gold
	Post	50kg/ha Urea
Tillage Type	Knife points and press wheels	
Row Spacing	25.4cm	
Sowing Speed	6.5km/hr	
Moisture	Moist @ 10-15cm, dry on surface (canola not expected to germinate)	
Seed Bed	Grazed wheat stubble	
Clod size	Small (0-10mm diameter)	
Soil Throw	Sufficient to cover 80-90% of interrow	
Stubble loading	5-10% groundcover of previous pasture (capeweed, barley grass and ryegrass)	
Soil Throw at Seeding	Good. Sufficient to cover 90% of interrow	
Herbicides Applied	Pre-emergent	As per treatment list
	Post-emergent	As per treatment list
Insecticides applied	Pre-emergent	500 ml/ha Chlorpyrifos 200 ml/ha Bifenthrin
	Post-emergent	100 ml/ha Transform

ASSESSMENT DATA SCORING SYSTEMS

Notations Used:

- IBS = Incorporated By Sowing
- PSPE = Post-Sowing – Pre-Emergent
- DAS = Days After Sowing
- DAA-C = Days After Application Timing C
- DAA-D = Days After Application Timing D
- fb = “followed by”

Percent Control

A subjective score was given based on the level of weed control as compared to the untreated control plots.

Weed Counts

The number of weeds from four 33 x 33 cm quadrats was counted within each plot and the resulting numbers converted to number of plants per square meter.

Yield

Plots were harvested with a Haldrup trial header and the weights in kg/plot recorded, then converted to t/ha.

WEATHER DATA

Weather

10120

GRASS VALLEY

Day	Rainfall							
	Apr	May	Jun	Jul	Aug	Sep	Oct	
1	0.0	0.0	0.0	0.0	14.6	0.8	0.0	
2	0.0	0.0	0.2	1.2	0.2	0.0	0.0	
3	0.0	0.0	0.2	3.6	0.2	0.2	0.0	
4	0.0	0.2	0.4	0.4	0.0	0.0	0.0	
5	0.0	0.0	0.0	0.4	0.0	0.2	0.	
6	0.0	0.0	0.0	0.8	0.0	0.2	0.0	
7	1.4	0.0	0.0	0.0	2.0	0.0	0.0	
8	7.8	0.0	0.2	1.4	0.4	0.0	0.0	
9	2.0	0.0	0.0	0.2	5.0	0.0	0.0	
10	6.6	0.0	0.0	0.0	0.6	0.0	0.0	
11	0.2	0.0	0.0	0.0	0.2	1.8	0.0	
12	0.0	0.0	0.0	0.0	0.0	4.8	0.0	
13	0.0	0.0	0.0	0.0	0.0	2.4	0.0	
14	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
15	0.0	0.0	0.0	0.0	0.0	0.0	0.4	
16	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
17	0.0	11.6	0.0	0.0	6.8	0.0	0.0	
18	0.0	14.8	4.0	0.0	2.4	0.0	0.0	
19	0.0	0.0	0.6	0.0	1.6	0.0	0.4	
20	0.0	0.0	1.2	5.2	12.0	0.0	0.0	
21	0.0	0.0	12.6	3.6	0.2	0.0	0.0	
22	0.0	0.0	9.8	0.0	6.4	0.0	0.0	
23	0.0	0.0	0.0	1.0	0.6	0.0	0.0	
24	0.0	0.2	0.2	0.2	0.0	0.0	0.0	
25	0.0	0.0	0.2	0.0	0.0	0.0	0.0	
26	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
27	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
28	0.0	0.0	0.0	4.2	0.0	0.0	0.0	
29	0.0	0.0	0.0	33.6	1.0	0.0	0.0	
30	0.0	0.0	0.0	0.0	1.2	0.0	0.0	
31			0.0		26.0	0.2	0.0	
Total	18.0	26.8	29.6	81.8	55.6	10.4	1.2	
				Sow/Spray				
				2-4 leaf spray				

Day	Temperature (min)							
	Apr	May	Jun	Jul	Aug	Sep	Oct	
1	14.6	12.8	2.6	5.3	10.1	2.5	7.1	
2	12.6	10.5	6.1	10.8	5.8	0.0	8.1	
3	12.4	13.5	10.7	12.5	2.2	5.1	13.0	
4	13.5	8.1	9.7	9.8	5.1	0.3	13.0	
5	16.0	2.2	6.0	11.0	4.5	7.5	15.2	
6	15.4	2.5	8.0	7.3	5.5	3.2	1.1	
7	15.3	4.2	4.5	8.8	8.1	1.2	6.8	
8	15.0	3.2	5.0	7.2	6.0	3.1	8.8	
9	16.1	5.5	6.9	-0.6	0.3	2.9	11.2	
10	18.6	9.0	4.9	3.0	4.1	11.4	15.8	
11	14.4		4.6	0.2	8.3	5.8	16.3	
12	15.5	10.1	9.6	0.2	5.0	10.0	13.4	
13	15.5	7.1	8.4	3.1	6.3	1.2	11.3	
14	11.4	5.1	6.9	5.2	3.1	1.1	10.5	
15	11.6	4.1	4.5	6.1	4.3	6.2	7.9	
16	9.6	12.4	5.4	3.4	5.2	3.4	4.5	
17	8.6	11.0	10.0	1.4	9.9	1.2	9.8	
18	10.4	11.6	10.7	5.0	11.0	3.3	13.5	
19	12.0	8.6	12.7	7.5	9.5	9.0	8.9	
20	12.2	6.8	13.4	11.5	10.5	1.5	8.0	
21	7.1	5.3	13.5	7.6	6.9	5.9	12.1	
22	6.7	8.9	7.2	3.5	3.9	7.0	12.2	
23	10.9	4.0	0.2	7.6	4.3	3.5	12.0	
24	8.5	6.2	2.2	-0.4	8.2	5.8	12.1	
25	8.5		0.2	4.3	4.5	9.3	13.7	
26	8.5	5.1	3.9	1.5	3.1	9.3	14.2	
27	7.5	5.1	6.6	3.6	4.2	11.7	12.7	
28	6.6	0.6	6.4	7.0	4.5	9.3	16.1	
29	9.8	4.8	1.3	9.2	10.4	8.5	14.3	
30	13.8	3.6	2.4		10.3	6.4	16.0	
31		2.5		14.4	4.0		15.5	
Avg	12.0	6.7	6.5	5.9	6.1	5.2	11.5	
				4-6 leaf spray				

Day	Temperature (max)						
	Apr	May	Jun	Jul	Aug	Sep	Oct
1	24.0	21.5	20.1	19.7	14.0	14.4	34.9
2	26.7	24.5	20.9	16.9	14.0	14.7	31.4
3	29.0	22.9	23.0	20.7	15.8	19.1	28.4
4	31.5	17.2	23.0	20.7	16.7	21.1	28.3
5	29.5	19.0	25.9	20.4	16.4	19.8	22.2
6	24.3	21.1	22.2	17.9	17.6	17.1	20.9
7	18.0	22.1	20.8	19.9	17.0	22.9	26.9
8	24.0	23.7	19.9	13.4	14.0	25.4	33.4
9	23.5	22.5	21.6	13.8	14.7	30.1	37.0
10	26.4	23.2	23.5	15.5	19.0	24.6	36.0
11	24.5	23.0	25.4	15.3	17.5	22.0	31.0
12	25.1	22.2	22.3	15.4	15.6	16.9	35.7
13	23.4	21.8	18.7	16.3	17.1	17.8	35.3
14	22.9	25.6	18.4	16.9	22.0	18.9	22.7
15	22.0	24.9	18.3	16.2	25.0	16.1	21.2
16	22.0	17.6	20.4	18.0	23.7	19.7	25.0
17	25.0	18.9	18.0	21.4	19.6	26.0	34.1
18	26.6	20.2	21.0	22.9	19.8	29.8	24.1
19	26.6	17.0	23.1	19.7	19.7	19.0	24.2
20	27.0	15.8	21.3	20.0	18.1	18.8	28.7
21	27.1	18.0	18.1	15.6	15.4	21.9	35.5
22	27.6	20.8	15.2	18.0	16.5	24.7	31.2
23	24.9	22.2	15.0	16.2	16.5	28.9	26.0
24	20.5	20.8	18.0	16.7	17.0	31.7	26.7
25	21.5	21.8	19.4	16.8	17.7	27.5	25.2
26	24.0	20.4	18.5	16.0	19.9	24.8	27.8
27	24.4	18.5	18.0	20.3	23.7	25.1	27.3
28	23.5	18.0	19.8	12.3	22.7	30.0	29.5
29	27.0	19.6	22.1	19.0	22.6	24.2	33.1
30	28.2	21.8	22.0	19.0	18.6	27.6	31.0
31		22.2		17.6	17.0		28.4
Avg	25.0	20.9	20.5	17.7	18.2	22.7	29.1

AIMS

Evaluate a range of commercially available herbicides and applications timings for the control of Annual Ryegrass in dual tolerance canola.

Trt No.	Treatment Name	Rate per Hectare	Application Timing	Appl. Code
1	Untreated Control			
2	Atrazine	1.1 kg	IBS	A
3	Atrazine	2.2 kg	IBS	A
4	Atrazine + Trifluralin	1.1 kg + 2.5 L	IBS	A
5	Trifluralin	2.5 L	IBS	A
6	Propyzamide	1 l	IBS	A
7	Dual Gold	500 ml	IBS	A
8	F9133-1	3 kg	IBS	A
9	F9133-1	3 kg	PSPE	B
10	FMZ 1204	1 L	IBS	A
11	Atrazine + Trifluralin fb	1.1 kg + 2.5 L	IBS	A
	Atrazine + Select + Uptake	1.1 kg + 500 ml + 1 %v/v	4-6 Leaf	D
12	Trifluralin fb	2.5 L	IBS	A
	Glyphosate fb	900 g	2-4 Leaf	C
	Glyphosate	900 g	4-6 Leaf	D
13	Atrazine + Trifluralin fb	1.1 kg + 2.5 L	IBS	A
	Atrazine + Glyphosate fb	1.1 kg + 900 g	2-4 Leaf	C
	Glyphosate	900 g	4-6 Leaf	D
14	Atrazine + Select + Uptake	1.1 kg + 500 ml + 1 %v/v	4-6 Leaf	D
15	Glyphosate fb	900 g	2-4 Leaf	C
	Glyphosate	900 g	4-6 Leaf	D
16	Atrazine + Glyphosate fb	1.1 kg + 900 g	2-4 Leaf	C
	Glyphosate	900 g	4-6 Leaf	D
17	Atrazine fb	1.1 kg	2-4 Leaf	C
	Select + Uptake	500 ml + 1 %v/v	4-6 Leaf	D
18	Select + Uptake	500 ml + 1 %v/v	4-6 Leaf	D
19	Select + Uptake	1 L + 1 %v/v	4-6 Leaf	D
20	Factor + Select + Supercharge	80 g + 500ml + 1 %v/v	4-6 Leaf	D
21	Select + Verdict + Uptake	500 ml + 100 ml + 1 %v/v	4-6 Leaf	D



TABLE 2: : ANNUAL RYEGRASS COUNTS (PLANTS/M²) 36, 55 AND 92 DAS.

Trt	Treatment Name	Rate	Appl code	14 DAA*	294 DAA*	55 DAA*C
1	Untreated Control			223 a	222 a	399 a
2	Atrazine	1.1 kg	A	93 b	135 bc	129 b-e
3	Atrazine	2.2 kg	A	89 b	91 cd	97 def
4	Atrazine + Trifluralin	1.1 kg + 2.5 L	A	38 cd	36 ef	56 fgh
5	Trifluralin	2.5 L	A	46 bcd	63 de	89 ef
6	Propyzamide	1 L	A	36 d	13 gh	19 ij
7	Dual Gold	500 ml	A	87 bc	117 bc	119 cde
8	F9133-1	3 kg	A	16 d	25 fg	33 hi
9	F9133-1	3 kg	B	43 bcd	92 cd	90 ef
10	FMZ 1204	1 L	A	15 d	33 efg	44 ghi
11	Atrazine + Trifluralin fb	1.1 kg + 2.5 L	A	17 d	23 fg	36 hi
	Atrazine + Select + Uptake	1.1 kg + 500 ml + 1 %v/v	D			
	Trifluralin fb	2.5 L	A			
12	Glyphosate fb	900 g	C	34 d	5 h	17 ij
	Glyphosate	900 g	D			
	Atrazine + Trifluralin fb	1.1 kg + 2.5 L	A			
13	Atrazine + Glyphosate fb	1.1 kg + 900 g	C	34 d	2 h	3 j
	Glyphosate	900 g	D			
	Atrazine + Select + Uptake	1.1 kg + 500 ml + 1 %v/v	D			
14	Glyphosate fb	900 g	C	-	-	174 bc
	Glyphosate	900 g	D			
	Atrazine + Glyphosate fb	1.1 kg + 900 g	C			
15	Glyphosate fb	900 g	C	-	29 fg	34 hi
	Glyphosate	900 g	D			
	Atrazine + Glyphosate fb	1.1 kg + 900 g	C			
16	Glyphosate	900 g	D	-	38 ef	23 i
	Atrazine fb	1.1 kg	C			
	Select + Uptake	500 ml + 1 %v/v	D			
17	Select + Uptake	500 ml + 1 %v/v	D	-	151 b	79 efg
18	Select + Uptake	500 ml + 1 %v/v	D	-	-	193 b
19	Select + Uptake	1 L + 1 %v/v	D	-	-	149 bcd
20	Factor + Select + Supercharge	80 g + 500ml + 1 %v/v	D	-	-	120 cde
	Select + Verdict + Uptake	500 ml + 100 ml + 1 %v/v	D			
21	Select + Verdict + Uptake	500 ml + 100 ml + 1 %v/v	D	-	-	107 de
			l.s.d.	-	-	-
			c.v.	26.5	18.7	18.0
			f-prob.	<0.001	<0.001	<0.001

CONCLUSION / SUMMARY

In this trial:

- IBS applications of Trifluralin, Trifluralin + Atrazine, F9133-1 and Propyzamide gave the best early control of Annual Ryegrass.
- Post emergent applications including Glyphosate showed the highest control of Annual Ryegrass 93 DAS. The lower control observed in response to 4-6 leaf applications of Select could be is likely related to Annual Ryegrass still dying at that assessment time.
- IBS Propyzamide applications maintained very good control throughout the trial period (96% - 93 DAS), reducing Annual Ryegrass density by more than 97%.
- Annual Ryegrass density in response to IBS application of F9133-1 was significantly lower than the corresponding PSPE application.

PRE-EMERGENT LUPINS TRIAL



INTRODUCTION

The trial 5km south of Grass Valley, WA in 2015 evaluated a range of commercially available herbicides and application timing for control of annual ryegrass (*Lolium rigidum*) in Lupins Mandellup. Combinations of herbicides applications included Incorporated by sowing (IBS), and post emergent (PE) applications at the 406 leaf growth stage. Early post emergent control of annual ryegrass was most effective in response to IBS applications of Trifluralin + Simazine+Diuron. Post emergent applications containing select showed the highest overall control of Annual Ryegrass 11 weeks after seeding and was the highest yielding.

CROP & SOWING DETAILS

Date Sown	30th April 2015	
Variety	Mandellup	
Seeding Rate	100kg/ha	
Nutrition	Pre	80kg/ha Gusto Gold
Tillage Type	Knife points and press wheels	
Row Spacing	25.4cm	
Moisture	Dry to 4cm	
Clod size	Small	
Stubble loading	15-20 % ground coverage, 5% standing	
Herbicides Applied	Pre-emergent	As per treatment list
	Post-emergent	As per treatment list Whole site received 2l/ha RoundUp late in the season (during grainfill)
Insecticides Applied	Pre-emergent	1L/ha Chlorpyrifos 200mL/ha Bifenthrin
	Post-emergent	150 ml/ha Transform

ASSESSMENT DATA SCORING SYSTEMS

Notations Used:

IBS = Incorporated By Sowing

WAS = Weeks After Sowing

PE = Post-emergent

DAA = Days After Application

DAA-C = Days After Application Timing C

Percent Control

A visual subjective score was given to each plot based on the percentage of weed control as compared to untreated control plots, where 0 = no observed control and 100 = full weed control.

Weed Counts

Four 33cm² quadrats per plot were counted (excluding the header rows) and the average taken and converted to plants/m².

Yield

Plots were harvested with a Haldrup trial header and the weights in kg/plot recorded, then converted to t/ha.

WEATHER DATA

Weather

10520

Grass Valley

Day	Rainfall						
	Apr	May	Jun	Jul	Aug	Sep	Oct
1	0.0	0.0	0.0	0.0	14.6	0.8	0.0
2	0.0	0.0	0.2	1.2	0.2	0.0	0.0
3	0.0	0.0	0.2	3.6	0.2	0.2	0.0
4	0.0	0.2	0.4	0.4	0.0	0.0	0.0
5	0.0	0.0	0.0	0.4	0.0	0.2	0.4
6	0.0	0.0	0.0	0.8	0.0	0.2	0.0
7	1.4	0.0	0.0	0.0	2.0	0.0	0.0
8	7.8	0.0	0.2	1.4	0.4	0.0	0.0
9	2.0	0.0	0.0	0.2	5.0	0.0	0.0
10	6.6	0.0	0.0	0.0	0.6	0.0	0.0
11	0.2	0.0	0.0	0.0	0.2	1.8	0.0
12	0.0	0.0	0.0	0.0	0.0	4.8	0.0
13	0.0	0.0	0.0	0.0	0.0	2.4	0.0
14	0.0	0.0	0.0	0.0	0.0	0.0	0.0
15	0.0	0.0	0.0	0.0	0.0	0.0	0.4
16	0.0	0.0	0.0	0.0	0.0	0.0	0.0
17	0.0	11.6	0.0	0.0	6.8	0.0	0.0
18	0.0	14.8	4.0	0.0	2.4	0.0	0.0
19	0.0	0.0	0.6	0.0	1.6	0.0	0.4
20	0.0	0.0	1.2	5.2	12.0	0.0	0.0
21	0.0	0.0	12.6	3.6	0.2	0.0	0.0
22	0.0	0.0	9.8	0.0	6.4	0.0	0.0
23	0.0	0.0	0.0	1.0	0.6	0.0	0.0
24	0.0	0.2	0.2	0.2	0.0	0.0	0.0
25	0.0	0.0	0.2	0.0	0.0	0.0	0.0
26	0.0	0.0	0.0	0.0	0.0	0.0	0.0
27	0.0	0.0	0.0	0.0	0.0	0.0	0.0
28	0.0	0.0	0.0	4.2	0.0	0.0	0.0
29	0.0	0.0	0.0	33.6	1.0	0.0	0.0
30	0.0	0.0	0.0	0.0	1.2	0.0	0.0
31		0.0		26.0	0.2		0.0
Total	18.0	26.8	29.6	81.8	55.6	10.4	1.2
				Sown/Sprayed A			
				Sprayed C			

Day	Temperature (min)						
	Apr	May	Jun	Jul	Aug	Sep	Oct
1	14.6	12.8	2.6	5.3	10.1	2.5	7.1
2	12.6	10.5	6.1	10.8	5.8	0.0	8.1
3	12.4	13.5	10.7	12.5	2.2	5.1	13.0
4	13.5	8.1	9.7	9.8	5.1	0.3	13.0
5	16.0	2.2	6.0	11.0	4.5	7.5	15.2
6	15.4	2.5	8.0	7.3	5.5	3.2	1.1
7	15.3	4.2	4.5	8.8	8.1	1.2	6.8
8	15.0	3.2	5.0	7.2	6.0	3.1	8.8
9	16.1	5.5	6.9	-0.6	0.3	2.9	11.2
10	18.6	9.0	4.9	3.0	4.1	11.4	15.8
11	14.4		4.6	0.2	8.3	5.8	16.3
12	15.5	10.1	9.6	0.2	5.0	10.0	13.4
13	15.5	7.1	8.4	3.1	6.3	1.2	11.3
14	11.4	5.1	6.9	5.2	3.1	1.1	10.5
15	11.6	4.1	4.5	6.1	4.3	6.2	7.9
16	9.6	12.4	5.4	3.4	5.2	3.4	4.5
17	8.6	11.0	10.0	1.4	9.9	1.2	9.8
18	10.4	11.6	10.7	5.0	11.0	3.3	13.5
19	12.0	8.6	12.7	7.5	9.5	9.0	8.9
20	12.2	6.8	13.4	11.5	10.5	1.5	8.0
21	7.1	5.3	13.5	7.6	6.9	5.9	12.1
22	6.7	8.9	7.2	3.5	3.9	7.0	12.2
23	10.9	4.0	0.2	7.6	4.3	3.5	12.0
24	8.5	6.2	2.2	-0.4	8.2	5.8	12.1
25	8.5		0.2	4.3	4.5	9.3	13.7
26	8.5	5.1	3.9	1.5	3.1	9.3	14.2
27	7.5	5.1	6.6	3.6	4.2	11.7	12.7
28	6.6	0.6	6.4	7.0	4.5	9.3	16.1
29	9.8	4.8	1.3	9.2	10.4	8.5	14.3
30	13.8	3.6	2.4		10.3	6.4	16.0
31		2.5		14.4	4.0		15.5
Avg	12.0	6.7	6.5	5.9	6.1	5.2	11.5

Day	Temperature (max)						
	Apr	May	Jun	Jul	Aug	Sep	Oct
1	24.0	21.5	20.1	19.7	14.0	14.4	34.9
2	26.7	24.5	20.9	16.9	14.0	14.7	31.4
3	29.0	22.9	23.0	20.7	15.8	19.1	28.4
4	31.5	17.2	23.0	20.7	16.7	21.1	28.3
5	29.5	19.0	25.9	20.4	16.4	19.8	22.2
6	24.3	21.1	22.2	17.9	17.6	17.1	20.9
7	18.0	22.1	20.8	19.9	17.0	22.9	26.9
8	24.0	23.7	19.9	13.4	14.0	25.4	33.4
9	23.5	22.5	21.6	13.8	14.7	30.1	37.0
10	26.4	23.2	23.5	15.5	19.0	24.6	36.0
11	24.5	23.0	25.4	15.3	17.5	22.0	31.0
12	25.1	22.2	22.3	15.4	15.6	16.9	35.7
13	23.4	21.8	18.7	16.3	17.1	17.8	35.3
14	22.9	25.6	18.4	16.9	22.0	18.9	22.7
15	22.0	24.9	18.3	16.2	25.0	16.1	21.2
16	22.0	17.6	20.4	18.0	23.7	19.7	25.0
17	25.0	18.9	18.0	21.4	19.6	26.0	34.1
18	26.6	20.2	21.0	22.9	19.8	29.8	24.1
19	26.6	17.0	23.1	19.7	19.7	19.0	24.2
20	27.0	15.8	21.3	20.0	18.1	18.8	28.7
21	27.1	18.0	18.1	15.6	15.4	21.9	35.5
22	27.6	20.8	15.2	18.0	16.5	24.7	31.2
23	24.9	22.2	15.0	16.2	16.5	28.9	26.0
24	20.5	20.8	18.0	16.7	17.0	31.7	26.7
25	21.5	21.8	19.4	16.8	17.7	27.5	25.2
26	24.0	20.4	18.5	16.0	19.9	24.8	27.8
27	24.4	18.5	18.0	20.3	23.7	25.1	27.3
28	23.5	18.0	19.8	12.3	22.7	30.0	29.5
29	27.0	19.6	22.1	19.0	22.6	24.2	33.1
30	28.2	21.8	22.0	19.0	18.6	27.6	31.0
31		22.2		17.6	17.0		28.4
Avg	25.0	20.9	20.5	17.7	18.2	22.7	29.1

RESULTS

Weed species present in this trial are Annual Ryegrass (*Lolium rigidum*).

WEED COUNTS

TABLE 1: ANNUAL RYEGRASS COUNTS (PLANTS/M²) 4, 7 & 11 WAS.

Trt No.	Treatment Name	Application Rate	Appl code	4 WAS*	7 WAS* 9 DAA-C	11 WAS 38 DAA-C	
1	Untreated Control			231 a	226 a	119 a	
2	Simazine	1.1 kg/ha	A	158 ab	210 ab	93 b	
3	Simazine	0.55 kg/ha	A	121 a-d	140 bcd	70 bcd	
	Atrazine	0.55 kg/ha	A				
4	Simazine	1.1 kg/ha	A	83 b-e	127 cde	90 b	
	Diuron	0.4 kg/ha	A				
5	Simazine	0.9 kg/ha	A	67 b-e	80 d-g	50 d-g	
	Metribuzin	0.4 kg/ha	A				
6	Propyzamide	1 l/ha	A	62 b-e	35 g	30 gh	
7	Terbyne	1.2 kg/ha	A	148 abc	167 abc	85 bc	
8	Trifluralin	2.5 l/ha	A	33 de	48 fg	42 efg	
	Trifluralin	2.5 l/ha	A				
9	Simazine	1.1 kg/ha	A	23 e	35 g	28 ghi	
	Diuron	0.4 kg/ha	A				
10	Simazine	1.1 kg/ha	A	88 b-e	98 de	84 bc	
	Terrain	180 g/ha	A				
11	Sakura	118 g/ha	A	46 cde	41 fg	38 fgh	
12	FMZ1204	1 l/ha	A	47 cde	42 fg	49 d-g	
13	Boxer Gold	2.5 l/ha	A	37 de	88 def	74 bcd	
14	F9133	3 kg/ha	A	30 de	42 fg	60 c-f	
15	Select	500 ml/ha	C		119 cde	13 hi	
	Uptake	1% v/v	C				
16	Select	1 /ha	C		80 d-g	2 i	
	Uptake	1% v/v	C				
17	Select	500 ml/ha	C		103 cde	11 hi	
	Elantra Xtreme	150 ml/ha	C				
18	Uptake	1% v/v	C		125 cde	68 b-e	
	Factor	180 g/ha	C				
19	Supercharge	1% v/v	C		76 efg	15 hi	
	Factor	180 g/ha	C				
19	Select	500 ml/ha	C		76 efg	15 hi	
	Supercharge	1% v/v	C				
				LSD	-	-	24.3
				CV	33.2	16.4	27.5
				f-prob.	0.004	<0.001	<0.001

*Data presented as back transformed means (Square Root).

Application C not applied at 4 WAS assessment.

RESULTS

PERCENT WEED CONTROL

TABLE 2: ANNUAL RYEGRASS CONTROL (%) 4, 7 & 11 WAS.

Trt No.	Treatment Name	Application Rate	Appl code	4 WAS*	7 WAS* 9 DAA-C	11 WAS 38 DAA-C
1	Untreated Control			o e	o f	o e
2	Simazine	1.1kg/ha	A	47 c	o f	14 d
3	Simazine	0.55 kg/ha	A			
	Atrazine	0.55 kg/ha	A	58 bc	27 e	39 c
4	Simazine	1.1 kg/ha	A			
	Diuron	0.4 kg/ha	A	77 a	27 e	33 cd
5	Simazine	0.9 kg/ha	A			
	Metribuzin	0.4 kg/ha	A	83 a	82 a	76 b
6	Propyzamide	1 l/ha	A	87 a	90 a	83 b
7	Terbyne	1.2 kg/ha	A	17 d	23 e	37 c
8	Trifluralin	2.5 l/ha	A	85 a	83 a	78 b
	Trifluralin	2.5 l/h	A			
9	Simazine	1.1 kg/ha	A			
	Diuron	0.4 kg/ha	A	90 a	90 a	87 ab
10	Simazine	1.1 kg/ha	A			
	Terrain	180g/ha	A	73 ab	40 d	33 cd
11	Sakura	118 g/ha	A	87 a	88 a	80 b
12	FMZ1204	1 l/ha	A	85 a	88 a	87 ab
13	Boxer Gold	2.5 l/ha	A	85 a	85 a	50 c
14	F9133	3 kg/ha	A	88 a	85 a	72 b
15	Select	500 ml/ha	C		119 cde	13 hi
	Uptake	1% v/v	C		65 b	97 a
16	Select	1 l/ha	C		80 d-g	2 i
	Uptake	1% v/v	C		65 b	97 a
17	Select	500 ml/ha	C		103 cde	11 hi
	Elantra Xtreme	150 ml/ha	C			
18	Factor	180 g/ha	C			
	Supercharge	1% v/v	C			
19	Factor	180 g/ha	C		76 efg	15 hi
	Select	500 ml/ha	C			
	Supercharge	1% v/v	C		60 bc	98 a
			LSD	16.2	11.9	-
			CV	14.1	12.4	13.2
			f-prob.	<0.001	<0.001	<0.001

*Data presented as back transformed means (ArcSine).

Application C not applied at 4 WAS assessment

RESULTS

CROP YIELD

TABLE 3: CROP YIELD (T/HA).

Trt No.	Treatment Name	Application Rate	Appl code	t/ha
1	Untreated Control			1.01 h
2	Simazine	1.1 kg/ha	A	1.08 gh
3	Simazine	0.55 kg/ha	A	1.33 ef
	Atrazine	0.55 kg/ha	A	
4	Simazine	1.1 kg/ha	A	1.40 def
	Diuron	0.4 kg/ha	A	
5	Simazine	0.9 kg/ha	A	1.69 abc
	Metribuzin	0.4 kg/ha	A	
6	Propyzamide	1 l/ha	A	1.62 bcd
7	Terbyne	1.2 kg/ha	A	1.06 gh
8	Trifluralin	2.5 l/ha	A	1.40 def
	Trifluralin	2.5 l/ha	A	
9	Simazine	1.1 kg/ha	A	1.74 abc
	Diuron	0.4 kg/ha	A	
10	Simazine	1.1 kg/ha	A	1.42 def
	Terrain	180 g/ha	A	
11	Sakura	118 g/ha	A	1.72 abc
12	FMZ1204	1 l/ha	A	1.49 c-f
13	Boxer Gold	2.5 l/ha	A	1.27 fg
14	F9133	3 kg/ha	A	1.59 cde
15	Select	500 ml/ha	C	1.88 ab
	Uptake	1 % v/v	C	
16	Select	1 l/ha	C	1.89 a
	Uptake	1 % v/v	C	
17	Select	500 ml/ha	C	1.88 ab
	Elantra Xtreme	150 ml/ha	C	
18	Uptake	1 % v/v	C	1.64 a-d
	Factor	180 g/ha	C	
19	Supercharge	1 % v/v	C	1.90 a
	Factor	180 g/ha	C	
19	Select	500 ml/ha	C	1.90 a
	Supercharge	1 % v/v	C	
			LSD	0.234
			CV	9.29
			f-prob.	<0.001

CONCLUSION / SUMMARY

In this trial:

- IBS applications of Trifluralin + Simazine + Diuron gave the best early control of Annual Ryegrass.
- Post emergent applications containing Select showed the highest overall control of Annual Ryegrass 11 WAS and were highest yielding.
- Applications of Simazine, Simazine + Diuron and Simazine + Terrain gave <35% final control of Annual Ryegrass.



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BARLEY AGRONOMY

ABSTRACT

One trial was conducted in Grass Valley, Western Australia, to demonstrate the potential of in furrow, seed treatments and foliar fungicides for the control of foliar diseases in barley (*Hordeum vulgare* cv. Baudin). The trial was sown into moisture on a sandy duplex soil. Seed and in furrow treatments were sown in one direction with foliar sprays applied post emergent perpendicular to the sowing runs. Post emergent treatments were applied when the crop was between Z25 and Z31. Foliar diseases present within the trial were Powdery Mildew (*Blumeria graminis*) and Net Blotch (*Pyrenophora teres*). During the season *Rhizoctonia* (*Rhizoctonia solani*) symptoms were also present within the trial but were not assessed. This trial was not replicated; as such trial observations do not contain statistical rigour.

In this trial, observations suggested that Powdery Mildew severity was reduced through the foliar application of Aviator Xpro or Prosaro, the in furrow application of Intake or the seed treatment Systiva. Assessment of Net Blotch demonstrated a reduction in severity through the foliar application of Radial or the in furrow application of Intake. Yield results were difficult to interpret due to confounding factors such as *Rhizoctonia* and soil type changes across the site; however Uniform, Systiva and Evergol were shown to provide higher yields.

TREATMENT NO	TREATMENT	RATE	APPLICATION METHOD
1	Untreated Control		
2	Uniform	400mL/ha	In Furrow
3	Systiva	150mL/100kg Seed	Seed Treatment
4	Evergol	80mL/100kg Seed	Seed Treatment
5	Vibrance	360mL/100kg Seed	Seed Treatment
6	Raxil	15mL/100kg Seed	Seed Treatment
7	Premis Pro C	100mL/100kg Seed	Seed Treatment
8	Intake	400mL/ha	In Furrow
9	Rancona Dimension	320mL/100kg Seed	Seed Treatment

Foliar Application		
Treatment No	Treatment	Rate
1	Tzar Xpert 1000mL/ha	1000mL/ha
2	Radial 840mL/ha	840mL/ha
3	BASF 70203F 750mL/ha	750mL/ha
4	Amistar Xtra 800mL/ha	800mL/ha
5	ELD001 250mL/ha	250mL/ha
6	Dow Legend 300mL/ha	300mL/ha
7	Dow Legend	300mL/ha
	Propimax	145mL/ha
8	Prosaro	300mL/ha
9	Aviator Xpro	1000mL/ha
10	Cogito	250mL/ha

	UTC	Tzar Xpert 1000ml/ha	Radial 840ml/ha	BASF 70203F 750ml/ha	Amistar Xtra 800ml/ha	Dupont ELD001 250ml/ha	UTC	DOW Legend 300ml/ha	DOW Legend 300ml/ha + Propimax	Bayer Prosaro 300ml/ha	Bayer Aviator 1000ml/ha	Syngenta Cogito 250ml/ha	UTC
utc													
uniform IF 400ml/ha													
Systiva 150ml/100kg													
utc													
Evergol 80ml/100kg													
Vibrance 360ml/100kg													
utc													
raxil													
Premis Pro C 100ml/100kg													
utc													
Intake 400ml/ha													
Rancona Dimension 320ml/100kg													
utc													

EXPERIMENTAL APPLICATION DETAILS

FOLIAR TREATMENTS

Date	18/08/2015	
Spray Time	Start	2:15
	Finish	3:15
Temperature (°C)	Start	18.9
	Finish	20.1
Delta T	Start	4.1
	Finish	3.9
Cloud Cover (%)	Start	30
	Finish	60
Relative Humidity (%)	Start	66.6
	Finish	55.5
Wind Speed (m/s)	Start	2.5
	Finish	2.6
Wind Direction	Start	5
	Finish	5
Soil Moisture	Moist to surface	
Application equipment	Handboom	
Application speed (km/hr)	6	
Pressure (bar)	2	
Spray volume (L/ha)	96	
Spray quality	Coarse	
Nozzles	120-015 Lechler	
Number of Nozzles	4	
Spacing (cm)	50	
Propellant	LPG Gas	

ASSESSMENT DATA SCORING SYSTEMS

Notations Used:

- UTC = Untreated Check
- DAA = Days After Application
- WAA = Weeks After Application
- %LAI = Percent Leaf Area Infection

Disease Severity

Crop parts were conducted in each plot and given a percent leaf area infected (% LAI) in the lower, mid and upper canopy for each disease present.

Yield

Plots were harvested with a Haldrup trial header and the weights in kg/plot recorded, then converted to t/ha. Three grain samples were taken for moisture content.

RESULTS

PRE-SPRAY DISEASE LEVELS

Table 1: Pre-spray leaf area infected (%).

	Untreated			Uniform			Systiva			Untreated			Evergol			Vibrance		
	Lower	Mid	Upper	Lower	Mid	Upper	Lower	Mid	Upper	Lower	Mid	Upper	Lower	Mid	Upper	Lower	Mid	Upper
Powdery Mildew	30	5	1	10	2	0	5	0	0	40	5	0	30	5	0	20	3	0
Net Blotch	5	0	0	1	0	0	2	0	0	2	0	0	5	0	0	5	0	0

	Untreated			Raxil			Premis Pro C			Untreated			Intake			Rancona		
	Lower	Mid	Upper	Lower	Mid	Upper	Lower	Mid	Upper	Lower	Mid	Upper	Lower	Mid	Upper	Lower	Mid	Upper
Powdery Mildew	30	10	0	30	10	0	50	5	0	50	5	0	20	5	0	40	5	0
Net Blotch	10	0	0	10	0	0	15	5	0	5	0	0	5	0	0	10	1	0

DISEASE SEVERITY

POWDERY MILDEW

Table 2: Powdery Mildew (% LAI) 3 WAA

Powdery Mildew	Untreated			Uniform			Systiva			Untreated			Evergol			Vibrance		
	Lower	Mid	Upper	Lower	Mid	Upper	Lower	Mid	Upper	Lower	Mid	Upper	Lower	Mid	Upper	Lower	Mid	Upper
Untreated	10	5	1	2	5	0	3	3	0	7	5	0	3	3	0	3	5	1
Tzar Xpert	5	3	0	2	0	0	2	0	0	2	2	0	2	2	1	3	1	0
Radial	5	3	0	2	3	0	2	0	0	2	1	0	2	1	0	2	1	0
BAS 7020	0	0	0	0	0	2	0	0	0	1	0	0	1	0	0	1	0	0
Amistar Xtra	5	3	0	2	3	0	2	0	0	2	2	0	2	2	0	5	2	0
ELDoo1	2	0	0	3	1	0	3	2	0	2	2	0	3	0	0	2	0	0
Untreated	7	2	0	5	2	0	5	2	0	7	3	0	10	2	0	5	2	0
Legend	5	2	0	5	2	0	0	0	0	5	2	0	3	2	0	3	3	0
Legend + Propimax	5	1	0	3	0	0	0	0	0	2	0	0	3	0	0	2	0	0
Prosaro	1	0	0	0	0	0	0	0	0	1	0	0	1	0	0	3	1	0
Aviator	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cogito	3	1	0	4	1	0	3	1	0	7	3	0	5	2	0	3	1	0
Untreated	30	15	3	20	7	0	5	5	0	20	10	5	30	20	2	30	5	0

Powdery Mildew	Untreated			Raxil			Premis Pro C			Untreated			Intake			Rancona		
	Lower	Mid	Upper	Lower	Mid	Upper	Lower	Mid	Upper	Lower	Mid	Upper	Lower	Mid	Upper	Lower	Mid	Upper
Untreated	5	3	1	5	3	0	5	4	0	10	10	0	3	2	0	15	3	0
Tzar Xpert	5	3	0	3	3	0	10	10	0	10	3	0	3	3	1	5	3	0
Radial	3	2	0	5	3	0	3	3	0	2	1	0	2	0	0	3	1	0
BAS 7020	1	0	0	5	2	0	1	0	0	2	0	0	1	0	0	2	0	0
Amistar Xtra	3	1	0	3	1	0	2	0	0	3	3	3	2	1	0	2	0	0
ELDoo1	3	1	0	3	0	0	5	2	0	2	0	0	5	2	0	3	1	0
Untreated	7	3	1	10	5	1	20	10	3	10	5	1	5	3	1	10	5	1
Legend	5	2	0	3	2	0	3	2	0	10	3	0	5	2	0	5	2	0
Legend + Propimax	2	0	0	3	1	0	3	0	0	3	1	0	2	1	0	3	1	0
Prosaro	1	0	0	1	0	0	1	0	0	2	0	0	1	0	0	1	0	0
Aviator	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
Cogito	7	2	0	3	1	0	5	3	0	3	3	0	7	3	0	3	1	0
Untreated	10	5	0	15	7	0	30	20	0	30	40	0	20	10	0	30	15	1

DISEASE SEVERITY

POWDERY MILDEW

Table 3: Powdery Mildew (% LAI) 7 WAA.

Powdery Mildew	Untreated			Uniform			Systiva			Untreated			Evergol			Vibrance		
	Lower	Mid	Upper	Lower	Mid	Upper	Lower	Mid	Upper	Lower	Mid	Upper	Lower	Mid	Upper	Lower	Mid	Upper
Untreated	15	7	5	5	7	2	7	5	2	12	7	5	7	3	0	7	5	1
Tzar Xpert	10	5	1	5	0	0	5	1	0	7	2	0	5	2	1	5	1	1
Radial	12	5	0	5	2	0	7	1	0	3	2	0	5	1	0	3	1	0
BAS 7020	5	2	0	2	0	0	2	0	0	2	1	0	2	1	0	2	0	0
Amistar Xtra	10	7	2	7	3	2	2	1	0	10	1	0	5	2	0	5	1	0
ELDoo1	5	0	0	5	1	0	7	5	1	5	2	0	7	0	0	5	0	0
Untreated	12	3	1	7	3	0	7	2	0	12	5	1	15	7	1	7	3	1
Legend	7	3	0	7	2	1	1	0	0	7	5	0	5	1	1	5	3	1
Legend + Propimax	7	2	1	5	1	0	2	0	0	3	2	0	5	0	0	3	0	0
Prosaro	1	0	0	1	0	0	1	0	0	2	0	0	1	0	0	5	1	0
Aviator	0	0	0	1	0	0	1	0	0	1	0	0	1	0	0	1	0	0
Cogito	5	1	0	5	2	0	5	1	0	12	2	0	7	2	1	5	1	0
Untreated	40	30	10	30	10	2	7	5	1	30	10	7	40	25	5	20	10	5

Powdery Mildew	Untreated			Raxil			Premis Pro C			Untreated			Intake			Rancona		
	Lower	Mid	Upper	Lower	Mid	Upper	Lower	Mid	Upper	Lower	Mid	Upper	Lower	Mid	Upper	Lower	Mid	Upper
Untreated	10	5	2	15	5	2	10	2	0	20	15	0	7	2	1	25	7	2
Tzar Xpert	10	5	1	5	5	1	15	10	1	15	10	0	5	3	1	20	7	1
Radial	5	2	1	10	5	1	7	3	1	5	1	0	3	0	0	20	5	2
BAS 7020	3	1	0	12	5	1	2	1	0	5	0	0	2	0	0	5	0	0
Amistar Xtra	5	0	0	5	0	0	5	2	0	5	2	0	5	1	1	10	7	1
ELDoo1	5	1	0	5	1	0	7	3	0	3	0	0	10	2	1	5	1	0
Untreated	15	5	2	10	7	3	30	15	7	20	10	2	7	5	2	15	7	1
Legend	10	3	1	5	3	1	5	3	1	15	5	0	7	2	1	7	2	2
Legend + Propimax	3	0	0	5	1	1	5	0	0	5	1	0	3	1	1	3	1	1
Prosaro	2	0	0	2	0	0	2	0	0	5	0	0	2	0	0	2	0	0
Aviator	1	0	0	1	0	0	2	0	0	1	1	0	1	0	0	1	0	0
Cogito	10	3	1	5	1	1	7	3	1	5	3	0	10	5	2	5	1	1
Untreated	15	5	2	20	10	1	40	30	5	40	10	1	30	10	5	30	15	5

DISEASE SEVERITY

NET BLOTCH

Table 4: Net blotch (% LAI) 3 WAA

Net Blotch	Untreated			Uniform			Systiva			Untreated			Evergol			Vibrance		
	Lower	Mid	Upper	Lower	Mid	Upper	Lower	Mid	Upper	Lower	Mid	Upper	Lower	Mid	Upper	Lower	Mid	Upper
Untreated	3	2	0	3	2	0	2	2	0	2	2	0	2	2	1	3	1	0
Tzar Xpert	2	1	0	2	0	0	2	0	0	1	2	0	1	0	0	1	1	0
Radial	2	1	0	0	2	0	1	1	0	0	3	0	1	0	0	1	0	0
BAS 7020	2	2	0	2	3	0	2	0	0	2	2	0	2	2	0	5	2	0
Amistar Xtra	5	3	0	3	3	0	0	0	0	5	0	0	3	2	0	3	1	0
ELDoo1	3	2	0	2	2	0	5	3	1	5	2	5	3	1	0	5	3	0
Untreated	5	2	0	3	2	0	5	2	1	2	2	1	3	3	1	3	2	0
Legend	2	2	0	2	1	0	3	1	1	3	2	1	5	2	1	3	2	0
Legend + Propimax	2	1	0	0	0	0	2	1	0	3	2	0	3	3	0	5	5	1
Prosaro	3	2	0	0	1	0	1	1	0	2	2	0	3	2	0	3	1	0
Aviator	3	1	0	1	1	0	1	0	0	3	2	0	3	1	0	3	2	0
Cogito	5	2	0	3	1	0	3	2	0	5	2	0	5	2	0	5	2	0
Untreated	3	3	0	3	2	0	3	2	0	5	3	0	2	2	0	2	3	0

Net Blotch	Untreated			Raxil			Premis Pro C			Untreated			Intake			Rancona		
	Lower	Mid	Upper	Lower	Mid	Upper	Lower	Mid	Upper	Lower	Mid	Upper	Lower	Mid	Upper	Lower	Mid	Upper
Untreated	5	3	0	3	3	0	10	10	0	11	3	0	3	3	1	5	3	0
Tzar Xpert	1	2	0	2	0	0	2	0	0	2	0	0	2	2	0	2	0	0
Radial	2	0	0	1	0	0	1	0	0	5	2	0	3	2	0	2	0	0
BAS 7020	3	1	0	3	1	0	2	0	0	3	3	3	2	1	0	2	0	0
Amistar Xtra	2	0	0	2	0	0	3	2	2	3	2	0	3	2	0	10	5	2
ELDoo1	5	2	0	1	2	0	5	2	1	5	2	0	3	2	0	3	2	0
Untreated	2	3	1	2	2	1	2	2	0	3	3	1	2	2	0	2	3	0
Legend	5	2	0	3	3	1	3	3	1	3	3	0	2	0	0	3	3	1
Legend + Propimax	3	2	0	3	2	0	7	3	0	5	2	0	2	2	0	3	2	0
Prosaro	2	2	0	2	2	0	3	2	0	3	2	0	3	2	0	3	2	0
Aviator	3	3	1	3	1	0	3	1	0	3	3	0	3	1	0	3	1	0
Cogito	5	2	0	3	3	0	5	3	0	5	3	0	5	3	0	5	2	0
Untreated	3	2	0	2	2	0	2	1	0	2	0	0	2	0	0	3	0	0

DISEASE SEVERITY

NET BLOTCH

Table 3: Powdery Mildew (% LAI) 7 WAA.

Net Blotch	Untreated			Uniform			Systiva			Untreated			Evergol			Vibrance		
	Lower	Mid	Upper	Lower	Mid	Upper	Lower	Mid	Upper	Lower	Mid	Upper	Lower	Mid	Upper	Lower	Mid	Upper
Untreated	5	2	2	7	2	1	7	5	1	7	5	5	5	5	0	7	3	2
Tzar Xpert	5	2	1	3	1	0	5	1	0	2	2	0	1	0	0	1	1	0
Radial	5	2	1	0	5	0	2	1	0	0	5	0	2	1	0	2	0	0
BAS 7020	5	5	2	5	2	0	5	1	0	5	2	0	5	2	0	10	2	0
Amistar Xtra	10	3	2	5	1	0	7	5	1	7	5	2	5	1	1	5	2	0
ELDoo1	5	5	1	7	2	0	10	5	2	10	3	1	5	1	0	5	5	0
Untreated	7	3	0	5	2	2	7	2	1	5	2	1	5	3	1	5	2	1
Legend	3	2	0	3	2	1	5	1	1	5	2	1	7	3	1	5	3	2
Legend + Propimax	3	1	1	1	0	0	3	2	1	7	3	1	5	3	3	7	3	1
Prosaro	5	2	0	0	2	1	2	1	0	5	2	0	5	2	1	5	1	0
Aviator	5	2	0	2	0	0	2	1	0	5	2	1	5	1	0	5	2	0
Cogito	7	3	0	5	2	0	5	2	1	7	1	0	7	3	1	7	3	1
Untreated	7	5	2	3	1	0	5	2	1	10	5	3	5	2	1	5	2	1

Net Blotch	Untreated			Raxil			Premis Pro C			Untreated			Intake			Rancona		
	Lower	Mid	Upper	Lower	Mid	Upper	Lower	Mid	Upper	Lower	Mid	Upper	Lower	Mid	Upper	Lower	Mid	Upper
Untreated	15	5	2	10	5	1	7	3	1	10	5	2	10	5	2	7	5	2
Tzar Xpert	3	5	1	3	1	0	5	1	0	7	0	0	5	2	0	5	3	1
Radial	2	2	1	3	1	0	5	0	0	7	3	1	5	2	1	7	2	1
BAS 7020	5	1	0	5	1	0	5	0	0	7	7	2	3	1	0	5	2	0
Amistar Xtra	5	3	1	7	2	1	5	1	1	7	3	1	5	3	1	3	2	0
ELDoo1	10	3	1	3	1	0	10	3	0	7	2	2	5	2	0	5	2	0
Untreated	5	3	1	5	2	1	5	2	1	5	3	1	5	2	1	3	3	1
Legend	7	3	2	5	3	2	7	3	1	5	3	0	3	0	0	5	3	1
Legend + Propimax	7	2	1	5	3	1	10	5	0	7	2	0	5	2	0	5	2	0
Prosaro	5	2	0	5	3	1	5	2	1	5	1	1	5	2	0	5	2	0
Aviator	7	5	1	5	1	0	5	1	0	5	3	1	5	1	0	5	1	1
Cogito	7	2	0	7	5	0	7	5	2	7	5	1	7	2	1	5	3	0
Untreated	5	2	1	5	2	0	3	2	1	5	0	0	5	0	0	5	2	0

CROP YIELD

Table 6: Crop yield (t/ha)

t/ha	Untreated	Tzar Xpert	Radial	BAS 7020	Amistarr Xtra	ELD001	Untrated	Leend	Legend+ Peopimax	Prosarao	Aviator	Cogito	Untreated
Untreated	2.43	2.78	2.66	2.15	2.08	2.31	1.57	1.90	1.02	0.98	0.93	1.14	0.53
Uniform	2.40	2.69	2.82	2.23	2.56	2.53	1.60	1.81	1.20	1.04	1.28	1.27	0.75
Systiva	1.52	2.31	2.24	2.84	2.65	2.31	1.96	1.57	1.02	1.20	1.46	1.51	1.32
Untreated	2.11	1.85	2.40	2.16	2.66	1.93	1.57	1.31	1.09	1.35	1.42	1.20	1.08
Evergol	1.89	3.28	2.43	1.93	2.38	2.33	1.13	1.56	1.11	1.14	1.64	1.30	1.07
Vibrance	1.81	2.57	2.43	1.97	2.17	1.77	1.31	1.44	0.96	1.38	1.53	1.48	1.17
Untreated	2.14	2.19	1.23	1.78	1.45	1.39	1.61	1.36	0.96	1.23	1.16	1.51	1.33
Raxil	1.84	2.44	1.94	2.37	1.94	1.93	1.83	1.60	1.32	1.22	1.41	1.52	1.22
Premis Pro C	1.67	2.35	1.81	2.74	2.06	1.29	1.34	1.97	1.56	1.42	1.78	1.57	1.39
Untreated	1.75	1.96	1.69	1.67	2.09	1.24	1.26	2.31	1.73	1.52	1.85	1.67	1.42
Intake	1.92	1.52	1.87	1.67	2.13	1.66	1.34	1.71	1.88	1.70	1.88	1.57	1.85
Rancona	1.56	1.40	1.67	1.56	1.64	1.43	0.94	1.26	1.55	1.58	1.53	1.77	1.88
Untreated	1.29	1.29	1.41	1.34	1.38	1.14	0.87	1.59	1.45	1.92	1.64	1.88	1.25

Visual Representation of Yield

t/ha	Untreated	Tzar Xpert	Radial	BAS 7020	Amistarr Xtra	ELD001	Untrated	Leend	Legend+ Peopimax	Prosarao	Aviator	Cogito	Untreated
Untreated	2.43	2.78	2.66	2.15	2.08	2.31	1.57	1.90	1.02	0.98	0.93	1.14	0.53
Uniform	2.40	2.69	2.82	2.23	2.56	2.53	1.60	1.81	1.20	1.04	1.28	1.27	0.75
Systiva	1.52	2.31	2.24	2.84	2.65	2.31	1.96	1.57	1.02	1.20	1.46	1.51	1.32
Untreated	2.11	1.85	2.40	2.16	2.66	1.93	1.57	1.31	1.09	1.35	1.42	1.20	1.08
Evergol	1.89	3.28	2.43	1.93	2.38	2.33	1.13	1.56	1.11	1.14	1.64	1.30	1.07
Vibrance	1.81	2.57	2.43	1.97	2.17	1.77	1.31	1.44	0.96	1.38	1.53	1.48	1.17
Untreated	2.14	2.19	1.23	1.78	1.45	1.39	1.61	1.36	0.96	1.23	1.16	1.51	1.33
Raxil	1.84	2.44	1.94	2.37	1.94	1.93	1.83	1.60	1.32	1.22	1.41	1.52	1.22
Premis Pro C	1.67	2.35	1.81	2.74	2.06	1.29	1.34	1.97	1.56	1.42	1.78	1.57	1.39
Untreated	1.75	1.96	1.69	1.67	2.09	1.24	1.26	2.31	1.73	1.52	1.85	1.67	1.42
Intake	1.92	1.52	1.87	1.67	2.13	1.66	1.34	1.71	1.88	1.70	1.88	1.57	1.85
Rancona	1.56	1.40	1.67	1.56	1.64	1.43	0.94	1.26	1.55	1.58	1.53	1.77	1.88
Untreated	1.29	1.29	1.41	1.34	1.38	1.14	0.87	1.59	1.45	1.92	1.64	1.88	1.25

DISCUSSION

One trial was conducted in Grass Valley, Western Australia, to demonstrate the potential of in-furrow, seed treatments and foliar fungicides to control foliar diseases in barley (*Hordeum vulgare* cv. Baudin). The trial was sown into moisture on a sandy duplex soil. Seed and in-furrow treatments were sown in one direction with foliar sprays applied post emergent perpendicular to sowing. Post emergent treatments were applied when the crop was between Z25 and Z31. Foliar diseases present within the trial were Powdery Mildew (*Blumeria graminis*) and Net Blotch (*Pyrenophora teres*). During the season *Rhizoctonia* (*Rhizoctonia solani*) symptoms were also present within the trial but were not assessed. This trial was not replicated; as such trial observations do not contain statistical rigour and any conclusions should be treated with caution.

Assessment of Powdery Mildew 3 WAA showed infection levels of 10-30% in the lower canopy of the untreated control (Table 2). Foliar application of Aviator Xpro reduced Powdery Mildew to 0% across all seed and in furrow treatments. Of the seed and in-furrow treatments; Intake and Systiva were shown to decrease Powdery Mildew the most. Subsequent assessment of Powdery Mildew 7 WAA still showed high levels of infection in the untreated plots (5-40%), however most of the disease was contained in the lower and mid canopy (Table 3). Aviator and Prosaro demonstrated the lowest disease severity of the foliar fungicides, with Uniform and Systiva continuing to provide the highest control of the in furrow and seed treatments.

Assessment of Net Blotch infection 3 WAA showed infection levels of 0-5% in the lower canopy of the untreated control (Table 4). Results did not highlight any stand out foliar treatments. Of the seed and in furrow treatments; Intake appeared to decrease Net Blotch severity, but only very slightly compared to the untreated control. Further assessment 7 WAA showed increasing levels of Net Blotch infection on the untreated plots (2-10%) with the disease spread throughout the lower, mid and upper canopy (Table 5). Radial appeared to have the lowest disease levels of the foliar treatments, with minimal variation identified in the in furrow and seed treatments.

Assessment of crop yield highlighted some large differences, with yields ranging from 0.53t/ha to 3.28t/ha (Table 6). This large variation can be attributed to foliar disease levels, along with *Rhizoctonia* and soil type changes within the trial. Of the foliar treatments, it appeared that Legend + Propimax produced lower yield results, with Tzar Xpert and Radial showing favorable results. Evaluation of the seed and in furrow treatments suggested increased yields through the application of Uniform, Systiva and Evergol.

CONCLUSION / SUMMARY

In this trial:

- Powdery Mildew severity was reduced through the foliar application of Aviator Xpro and Prosaro, in-furrow application of Intake and seed treating with Systiva.
- Net Blotch severity was reduced slightly through the foliar application of Radial and in-furrow application of Intake.
- Yield results were confounded by soil type and *Rhizoctonia*; however Uniform, Systiva and Evergol all performed well (all *Rhizoctonia* treatments).

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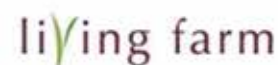
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GRASS WEED CONTROL IN CANOLA



INTRODUCTION

The trial conducted 40km north of Esperance, WA in 2015 evaluated a range of commercially available herbicides and application timings for control of annual ryegrass (*Lolium rigidum*) in dual tolerant Canola Hyolla 525 RT). Combinations of herbicides applications included incorporated by sowing (IBS), post-sowing pre-emergent (PSPE), early post-emergent (EPE) applications at 2-4 leaf growth stage and post emergent (PE) at 4-6 leaf growth leaf stage. Mixed application timing and herbicide groups gave the highest control overall.

CROP & SOWING DETAILS

Date Sown	25th April 2015	
Variety	Hyolla 525RT	
Seeding Rate	3.5kg/ha	
Nutrition	Pre	50kg/ha Urea 125kg/ha Gusto Gold
	Post	150kg/ha SOA
Tillage Type	Knife points and press wheels	
Row Spacing	25.4cm	
Moisture	Marginal, moisture at 3-5cm	
Seed Bed	Grazed pasture	
Clod size	Fine	
Stubble loading	High	
Herbicides Applied	Pre-emergent	As per treatment list
	Post-emergent	As per treatment list
Insecticides Applied	Pre-emergent	150 ml/ha Bifenthrin 400 ml/ha Chlorpyrifos
	Post-emergent	100 ml/ha Transform

ASSESSMENT DATA SCORING SYSTEMS

Notations Used:

RT = Dual herbicide tolerant
 IBS = Incorporated by Sowing
 PSPE = Post-Sowing – Pre-Emergent
 EPE = Early Post Emergent (2 leaf crop stage)
 PE = Post Emergent (4-6 leaf crop stage)
 DAS = Days After Sowing
 DAA-C = Days After Application Timing C
 DAA-D = Days After Application Timing D
 fb = Followed By (e.g. Glyphosate fb Glyphosate)

Percent Control

A visual subjective score was given to each plot based on the level of weed control when compared to the untreated control plots (0 = no control, 100% = complete weed death)

Ryegrass Counts

Four 33cm² quadrats per plot were placed randomly in each plot and counted (excluding the header rows). The average was converted to plants/m².

Yield

Plots were harvested with a Haldrup trial header and the weights in kg/plot recorded, then converted to t/ha.

WEATHER DATA

Weather

9542

Esperance

Day	Rainfall						
	Apr	May	Jun	Jul	Aug	Sep	Oct
1	19.8	0.0	0.0	0.0	18.2	15.6	0.2
2	0.02	0.2	0.0	0.0	0.0	6.2	0.0
3	0.0	0.6	0.0	3.4	1.2	0.4	0.0
4	0.0	8.0	0.0	0.2	0.6	0.0	0.0
5	0.0	15.2	0.0	0.8	1.2	1.4	0.0
6	0.2	5.8	0.0	0.0	0.4	0.0	1.6
7	0.0	2.2	0.0	0.0	0.0	0.0	0.0
8	3.2	0.0	0.0	2.6	0.2		0.0
9	1.6	0.2	0.2	18.8	4.6	0.0	0.0
10	10.0	0.6	0.4	0.2	2.8	0.0	0.0
11	0.0	1.0	0.0	0.8	12.2	0.0	0.0
12	0.8	1.8	0.0	0.2	2.4	0.0	0.0
13	1.6	0.0	1.2	0.0	1.4	15.4	0.0
14	2.8	0.2	2.2	0.6	0.0	4.0	0.0
15	12.8	0.0	4.8	1.4	0.2	6.2	0.0
16	0.0	0.0	0.4	0.0	0.0	0.2	0.0
17	0.2	0.0	0.2	0.6	0.0	0.0	0.0
18	2.2	6.8	1.4	0.0	5.4	0.2	0.6
19	0.6	9.4	10.0	0.0	0.8	0.0	8.2
20	0.0	3.0	0.8	0.2	27.4	3.8	0.2
21	0.0	0.2	8.6	0.8	11.8	0.0	0.0
22	0.0	0.0	9.4	1.8	5.6	0.2	0.0
23	0.0	0.0	18.6	1.4	5.8	0.2	0.0
24	0.6	2.2	0.2	7.4	2.2	0.0	0.8
25	1.0	2.2	0.0	1.0	2.6	0.0	0.2
26	0.0	0.4	0.0	5.0	0.2	0.0	2.8
27	0.2	0.8	2.2	0.8	0.0	0.0	0.4
28	0.0	2.6	0.0	0.0	0.0	0.6	5.2
29	0.0	1.8	0.0	0.2	0.0	0.2	1.2
30	0.0	0.0	0.2	2.0	0.4	0.0	0.0
31		0.4		0.6	0.0		0.6
Total	57.8	65.6	60.8	50.8	107.6	54.6	22.0
				Sown/Sprayed A&B			
				Sprayed C			

Day	Temperature (min)							
	Apr	May	Jun	Jul	Aug	Sep	Oct	
1	14.8	14.4	6.4	11.1	10.12	5.5	11.6	
2	12.2	5.8	11.6	12.6	8.0	4.7	14.8	
3	15.0	14.0	11.9	11.4	7.0	3.3	14.1	
4	14.3	7.8	10.1	9.2	6.2	8.4	12.5	
5	15.5	7.3	8.4	9.7	5.2	11.6	13.6	
6	12.0	10.6	11.0	7.3	6.8	4.0	5.2	
7	10.9	9.0	9.0	7.8	8.7	5.5	5.8	
8	12.9	9.6	8.6	10.0	8.8	8.3	9.4	
9	13.4	9.4	10.7	5.8	5.2	10.2	10.3	
10	15.4	12.9	9.6	6.4	4.3	14.6	15.2	
11	17.0	14.0	6.3	7.1	8.6	8.1	13.7	
12	15.4	11.9	10.7	7.5	8.6	9.0	11.4	
13	15.3	10.6	12.3	6.6	8.8	6.2	16.3	
14	12.7	8.7	8.4	8.8	6.2	5.2	15.7	
15	13.4	8.3	8.5	7.3	9.8	8.1	10.3	
16	9.8	12.8	7.1	5.6	11.0	5.7	5.7	
17	8.2	12.9	7.2	5.9	12.1	5.9	10.2	
18	9.6	11.3	10.0	6.4	13.3	8.1	15.9	
19	8.4	11.0	10.7	8.3	9.3	9.5	9.9	
20	9.9	6.6	11.5	10.8	9.9	6.3	7.1	
21	9.0	5.8	13.8	5.5	7.5	8.1	9.8	
22	9.7	7.2	7.2	4.5	9.7	8.0	12.2	
23	8.6	9.5	9.1	7.3	8.3	9.5	15.5	
24	11.4	7.9	5.4	6.7	5.6	9.7	13.3	
25	6.8	9.9	6.5	7.6	6.5	12.5	13.7	
26	6.1	10.0	6.5	5.9	6.1	10.9	12.9	
27	11.4	8.2	9.9	6.0	7.6	10.0	13.7	
28	9.7	8.5	9.6	7.6	8.7	7.7	14.4	
29	11.0	5.2	9.1	9.0	10.7	11.8	12.9	
30	14.4	5.2	6.5	10.1	10.4	7.5	12.8	
31		6.6		13.1	6.8		16.3	
Avg		22.6		18.6	17.3		26.8	
		Sprayed D						

Day	Temperature (max)						
	Apr	May	Jun	Jul	Aug	Sep	Oct
1	21.8	20.5	20.0	20.3	13.2	12.1	32.1
2	21.8	19.9	21.5	16.7	14.8	13.9	28.8
3	25.3	20.7	22.6	19.8	15.2	18.1	24.5
4	27.8	13.1	22.5	17.4	16.1	24.0	30.5
5	22.9	18.0	26.8	17.8	15.5	18.8	22.4
6	20.2	17.0	20.7	17.9	17.5	16.8	16.7
7	21.2	19.2	19.8	18.9	16.9		21.9
8	20.1	20.9	18.0	13.5	17.6	23.0	26.2
9	25.6	20.5	18.8	13.5	12.0	25.5	31.0
10	31.8	20.1	18.5	15.1	16.3	25.4	32.3
11	25.8	18.9	20.0	14.4	14.5	21.9	20.7
12	23.7	17.2	19.5	14.6	15.8	22.5	29.3
13	19.9	18.9	18.4	15.3	15.8	14.2	35.7
14	22.1	20.6	16.4	14.4	21.1	18.0	23.3
15	19.0	22.4	17.8	13.7	22.9	14.9	19.9
16	18.3	17.8	17.1	14.6	26.0	14.1	24.5
17	21.5	21.6	15.2	15.6	17.9	20.0	30.7
18	17.5	17.7	12.8	19.4	19.9	26.8	35.0
19	22.4	15.3	17.0	20.3	18.8	14.7	19.7
20	22.8	14.9	21.8	17.8	15.3	15.0	20.2
21	23.7	15.8	16.2	13.7	16.4	16.6	28.0
22	25.0	18.7	15.8	15.4	13.9	20.2	34.5
23	19.6	20.4	15.2	13.5	15.0	22.8	25.6
24	17.5	17.0	16.2	14.2	14.2	24.6	21.8
25	18.0	21.5	17.1	14.0	16.4	29.4	17.8
26	20.0	19.0	17.4	13.4	17.9	18.7	18.2
27	21.6	17.2	16.3	15.7	19.5	16.6	20.2
28	23.6	14.8	16.4	12.8	22.3	22.8	24.3
29	24.5	16.7	18.0	16.8	24.9	25.3	27.4
30	28.8	17.7	19.5	16.5	18.0	24.2	33.1
31		19.7		15.3	17.5		24.0
Avg	22.5	18.5	18.4	15.9	17.4	20.0	25.8

AIMS

Evaluate the different methods of grass weed control in dual tolerant Canola using Roundup Ready and Triazine Tolerant technology..

METHODOLOGY

TREATMENT LIST

Trt No.	Treatment Name	Rate per Hectare	Application Timing	Appl. Code
1	Untreated Control			
2	Atrazine	1.1 kg	IBS	A
3	Atrazine	2.2 kg	IBS	A
4	Atrazine + Trifluralin	1.1 kg + 2.5 L	IBS	A
5	Trifluralin	2.5 L	IBS	A
6	Propyzamide	1 L	IBS	A
7	Dual Gold	500 ml	IBS	A
8	F9133-1	3 kg	IBS	A
9	F9133-1	3 kg	PSPE	B
10	FMZ 1204	1 L	IBS	A
11	Atrazine + Trifluralin fb	1.1kg + 2.5 l/ha	IBS	A
	Atrazine + Select + Uptake	1.1 kg + 500 ml + 1 %v/v	4-6 Leaf	D
12	Trifluralin fb	2.5 L	IBS	A
	Glyphosate fb	900 g	2-4 Leaf	C
	Glyphosate	900 g	4-6 Leaf	D
13	Atrazine + Trifluralin fb	1.1 kg + 2.5 L	IBS	A
	Atrazine + Glyphosate fb	1.1 kg + 900 g	2-4 Leaf	C
	Glyphosate	900 g	4-6 Leaf	D
14	Atrazine + Select + Uptake	1.1 kg + 500 ml + 1 %v/v	4-6 Leaf	D
15	Glyphosate fb	900 g	2-4 Leaf	C
	Glyphosate	900 g	4-6 Leaf	D
16	Atrazine + Glyphosate fb	1.1 kg + 900 g	2-4 Leaf	C
	Glyphosate	900 g	4-6 Leaf	D
17	Atrazine fb	1.1 kg	2-4 Leaf	C
	Select + Uptake	500 ml + 1 %v/v	4-6 Leaf	D
18	Select + Uptake	500 ml + 1 %v/v	4-6 Leaf	D
19	Select + Uptake	1 L + 1 %v/v	4-6 Leaf	D
20	Factor + Select + Uptake	80 g + 500ml + 1 %v/v	4-6 Leaf	D
21	Untreated Control			

RESULTS

Weed species present in this trial was Annual Ryegrass (*Lolium Rigidum*).

ANNUAL RYEGRASS COUNTS

TABLE 1: ANNUAL RYEGRASS COUNTS (PLANTS/M²) 30, 61 & 118 DAS.

Trt No.	Treatment Name	Rate per Hectare	Appl code	30 DAS 0 DAA-C	61 DAS* 31 DAA-C 1 DAA-D	118 DAS* 88 DAA-C 58 DAA-D
1	Untreated Control			778 a	752 a	850 a
2	Atrazine	1.1 kg	A	709 ab	644 a	703 ab
3	Atrazine	2.2 kg	A	554 bc	544 ab	593 b
4	Atrazine + Trifluralin	1.1 kg + 2.5 L	A	51 ef	91 ef	119 d-g
5	Trifluralin	2.5 L	A	21 f	57 fg	114 d-g
6	Propyzamide	1 l	A	47 ef	93 ef	135 def
7	Dual Gold	500 ml	A	483 c	588 a	534 b
8	F9133-1	3 kg	A	93 de	115 def	105 d-g
9	F9133-1	3 kg	B	395 c	344 bc	356 c
10	FMZ 1204	1 L	A	140 d	170 de	171 d
	Atrazine + Trifluralin fb	1.1 kg + 2.5 L	A			
11	Atrazine + Select + Uptake	1.1 kg + 500 ml + 1 %v/v	D	37 ef	81 efg	81 efg
	Trifluralin fb	2.5 L	A			
12	Glyphosate fb	900 g	C	60 ef	18 g	54 ghi
	Glyphosate	900 g	D			
13	Atrazine + Trifluralin fb	1.1 kg + 2.5 L	A			
	Atrazine + Glyphosate fb	1.1 kg + 900 g	C	32 ef	17 g	22 i
	Glyphosate	900 g	D			
14	Atrazine + Select + Uptake	1.1 kg + 500 ml + 1 %v/v	D	-	-	167 d
15	Glyphosate fb	900 g	C	-	144 def	60 f-i
	Glyphosate	900 g	D			
16	Atrazine + Glyphosate fb	1.1 kg + 900 g	C	-	232 cd	49 ghi
	Glyphosate	900 g	D			
17	Atrazine fb	1.1 kg	C	-	697 a	108 d-g
	Select + Uptake	500 ml + 1 %v/v	D			
18	Select + Uptake	500 ml + 1 %v/v	D	-	-	143 de
19	Select + Uptake	1 L + 1 %v/v	D	-	-	74 e-i
20	Factor + Select + Uptake	80 g + 500ml + 1 %v/v	D	-	-	92 d-h
21	Untreated Control			-	-	674 ab
			LSD	-	-	-
			CV	16.8	19.7	16.7
			f-prob.	<0.001	<0.001	<0.001

*Data presented as back transformed means (Square Root).

RESULTS

PERCENT WEED CONTROL

TABLE 2: PERCENT ANNUAL RYEGRASS CONTROL (%) 30, 61 & 118 DAS.

Trt No.	Treatment Name	Rate per Hectare	Appl code	30 DAS 0 DAA-C	61 DAS* 31 DAA-C 1 DAA-D	118 DAS* 88 DAA-C 58 DAA-D
1	Untreated Control			0 f	0 f	0 g
2	Atrazine	1.1 kg	A	10 e	6 ef	6 f
3	Atrazine	2.2 kg	A	18 d	18 de	16 ef
4	Atrazine + Trifluralin	1.1 kg + 2.5 L	A	96 a	80 c	77 c
5	Trifluralin	2.5 L	A	96 a	87 abc	78 c
6	Propyzamide	1 l	A	95 a	83 bc	78 c
7	Dual Gold	500 ml	A	50 c	30 d	27 e
8	F9133-1	3 kg	A	92 a	80 c	83 bc
9	F9133-1	3 kg	B	43 c	17 de	54 d
10	FMZ 1204	1 L	A	84 b	77 c	75 c
	Atrazine + Trifluralin fb	1.1 kg + 2.5 L	A			
11	Atrazine + Select + Uptake	1.1 kg + 500 ml + 1 %v/v	D	96 a	82 c	94 ab
	Trifluralin fb	2.5 L	A			
12	Glyphosate fb	900 g	C	95 a	97 ab	96 a
	Glyphosate	900 g	D			
13	Atrazine + Trifluralin fb	1.1 kg + 2.5 L	A			
	Atrazine + Glyphosate fb	1.1 kg + 900 g	C	95 a	98 a	98 a
	Glyphosate	900 g	D			
14	Atrazine + Select + Uptake	1.1 kg + 500 ml + 1 %v/v	D			75 c
15	Glyphosate fb	900 g	C		85 bc	94 ab
	Glyphosate	900 g	D			
16	Atrazine + Glyphosate fb	1.1 kg + 900 g	C		71 c	93 ab
	Glyphosate	900 g	D			
17	Atrazine fb	1.1 kg	C		1 f	80 c
	Select + Uptake	500 ml + 1 %v/v	D			
18	Select + Uptake	500 ml + 1 %v/v	D			70 cd
19	Select + Uptake	1 L + 1 %v/v	D			78 c
20	Factor + Select + Uptake	80 g + 500ml + 1 %v/v	D			80 c
21	Untreated Control					0 g
			LSD	-	-	-
			CV	6.7	17.7	11.9
			f-prob.	<0.001	<0.001	<0.001

*Data presented as back transformed means (Square Root).

CONCLUSION / SUMMARY

In this trial:

- IBS applications of Atrazine + Trifluralin, Trifluralin and Propyzamide gave the best early control of Annual Ryegrass.
- Post emergent applications of Glyphosate fb Glyphosate, Atrazine + Glyphosate fb Glyphosate and Select + Uptake (1000 ml/ha) showed the highest control of Annual Ryegrass 118 DAS.
- IBS fb post emergent applications of Atrazine + Trifluralin fb Atrazine + Glyphosate fb Glyphosate gave the best control of Annual Ryegrass overall and the highest yield.
- Applications of Atrazine (1.1 and 2.2 kg/ha) and Dual Gold gave ~30% final control of Annual Ryegrass.

RESULTS

YIELD

TABLE 3: CANOLA YIELD (T/HA).

Trt No.	Treatment Name	Rate per Hectare	Appl code	t/ha
1	Untreated Control			0.67 j
2	Atrazine	1.1 kg	A	1.15 gh
3	Atrazine	2.2 kg	A	1.01 hi
4	Atrazine + Trifluralin	1.1 kg + 2.5 L	A	1.65 cd
5	Trifluralin	2.5 L	A	1.52 de
6	Propyzamide	1 l	A	1.55 cde
7	Dual Gold	500 ml	A	1.11 gh
8	F9133-1	3 kg	A	1.77 c
9	F9133-1	3 kg	B	1.46 def
10	FMZ 1204	1 L	A	1.53 de
	Atrazine + Trifluralin fb	1.1 kg + 2.5 L	A	
11	Atrazine + Select + Uptake	1.1 kg + 500 ml + 1 %v/v	D	2.28 a
	Trifluralin fb	2.5 L	A	
12	Glyphosate fb	900 g	C	2.03 b
	Glyphosate	900 g	D	
13	Atrazine + Trifluralin fb	1.1 kg + 2.5 L	A	
	Atrazine + Glyphosate fb	1.1 kg + 900 g	C	2.34 a
	Glyphosate	900 g	D	
14	Atrazine + Select + Uptake	1.1 kg + 500 ml + 1 %v/v	D	1.57 cd
15	Glyphosate fb	900 g	C	2.23 ab
	Glyphosate	900 g	D	
16	Atrazine + Glyphosate fb	1.1 kg + 900 g	C	2.26 ab
	Glyphosate	900 g	D	
17	Atrazine fb	1.1 kg	C	1.57 cd
	Select + Uptake	500 ml + 1 %v/v	D	
18	Select + Uptake	500 ml + 1 %v/v	D	1.05 h
19	Select + Uptake	1 L + 1 %v/v	D	1.24 fgh
20	Factor + Select + Uptake	80 g + 500ml + 1 %v/v	D	1.33 efg
21	Untreated Control			0.79 ii
			LSD	-
			CV	6.7
			f-prob.	<0.001

Annual Ryegrass control vs. Yield

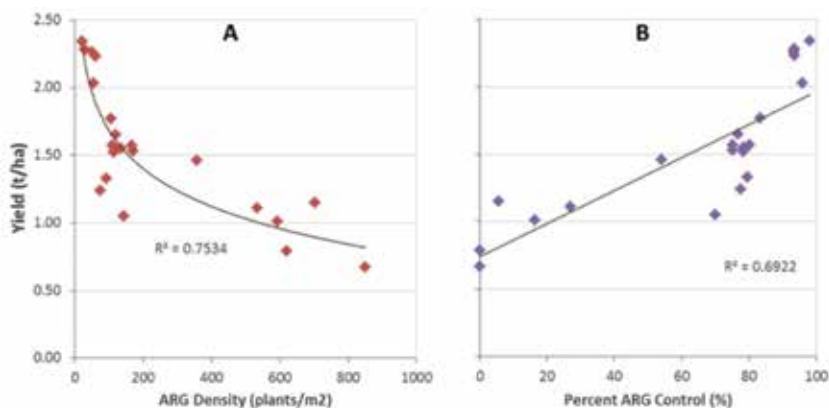


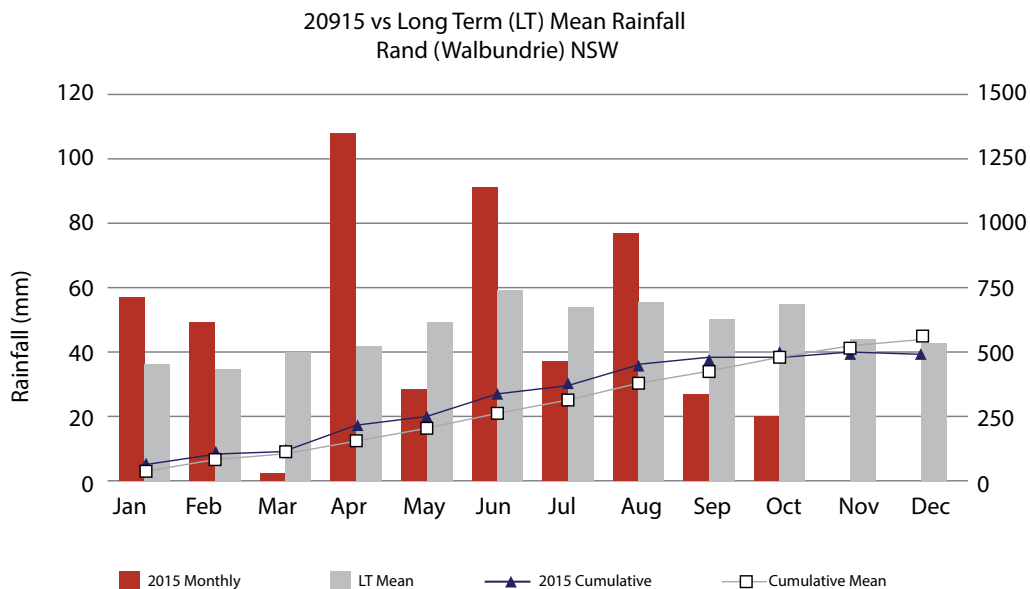
Figure 1: Relationship of (A) Annual Ryegrass density to final yield, and (B) Percent Annual Ryegrass control to final yield.

KNOCKDOWN MIXTURES FOR FENCE LINE SPRAYING



INTRODUCTION

A trial was conducted near Rand, NSW in 2015 to evaluate the efficacy of knockdown mixtures for fence line spraying. The trial was unreplicated and targeted the weeds annual ryegrass (ARG, *Lolium rigidum*), black oats (*Avena* spp.), capeweed (*Arctotheca calendula*), milk thistle (*Sonchus oleraceus*) and graza radish (*Raphanus sativus*).



GENERAL DISCUSSION

A trial was conducted near Rand, NSW in 2015 to evaluate the efficacy of knockdown mixtures for fence line spraying. The trial was unreplicated and targeted the weeds annual ryegrass (ARG, *Lolium rigidum*), black oats (*Avena* spp.), capeweed (*Arctotheca calendula*), milk thistle (*Sonchus oleraceus*) and graza radish (*Raphanus sativus*).

Weather

Growing season rainfall was slightly below average with 258 mm falling between May and September, compared to the long term average of 265 mm. Conditions were very dry through September and October. Temperature was generally average with some severe frosting in low lying, frost prone areas.

General Observations

Weed numbers were generally low and variable across the trial site. Good results were however seen when visual control was assessed (Tables 1, 2 & 3). Weed size had generally increased, as expected, from application timing A to B (Tables 1 & 2). ARG and graza radish were top-dressed across the site, however they did not establish well.

Visual Weed Control

At 15 days after application A (DA-A), all products applied at timing A (treatments 2-14) showed between 70 and 100 % control, except Sharpen at 26 g/ha plus Kwickin which showed very poor control of 10 % (Table 3). By 44 DA-A, visual control had increased to between 95 and 100 % for each product. The exceptions were in areas treated with Spray seed at 1800 ml/ha where reduced visual control was observed and in areas treated with Sharpen plus Kwickin where no visual control was observed.

At 7 days after application B (DA-B), products applied at timing B (treatments 15-23) showed varying levels of control. Paradigm at 50 g/ha plus Roundup Ultra Max at 950 ml/ha and Sharpen at 26 g/ha plus Arsenal Express at 5000 ml/ha plus Hasten at 500 ml/100 l gave the lowest levels of control of 10 and 15 %, respectively. Spray seed at 3200 ml/ha plus Uragan at 3500 g/ha plus BS 1000 at 100 ml/100 l and Alliance at 6000 ml/ha applied alone gave the highest levels of control of 70 and 85 %, respectively

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RESULTS - TABLE 3 - VISUAL WEED CONTROL

Rating Date Rating Type Rating Unit Days After First/Last Application Trt-Eval Interval					19/08/2015 Visual control %	08/09/2015 Visual control %	17/09/2015 Visual Control %
					15 15 15 DA-A	35 35 35 DA-A	44 7 7 DA-B
No.	Treatment	Rate	Unit	Appl			
1	Untreated				0.0	0.0	0.0
2	Spray Seed	1800	ml/ha	A	95.0	90.0	70.0
3	Roundup Ultra Max	950	ml/ha	A	80.0	95.0	100.0
4	Gramoxone 360	1250	ml/ha	A	95.0	70.0	95.0
5	Gramoxone 360	1250	ml/ha	A			
	Sharpen	17	g/ha	A	100.0	90.0	100.0
	Kwickin	1000	ml/100 l	A			
6	Roundup Ultra Max	950	ml/ha	A			
	Sharpen	17	g/ha	A	100.0	100.0	100.0
	Kwickin	1000	ml/100 l	A			
7	Sharpen	26	g/ha	A			
	Kwickin	1000	ml/100 l	A	10.0	0.0	0.0
8	NUL3065	30	g/ha	A			
	Weedmaster DST	1150	ml/ha	A	95.0	100.0	100.0
	Kwickin	500	ml/100 l	A			
9	Roundup Ultra Max	950	ml/ha	A			
	Nail 600	10	ml/100 l	A	90.0	100.0	100.0
	Kwickin	500	ml/100 l	A			
10	Roundup Ultra Max	950	ml/ha	A			
	Hammer 400	15	ml/ha	A	95.0	100.0	100.0
	Kwickin	500	ml/100 l	A			
11	Goal Tender	37.5	ml/ha	A			
	Roundup Ultra Max	950	ml/ha	A	70.0	95.0	100.0
12	Roundup Ultra Max	950	ml/ha	A			
	Starane Advance	450	ml/ha	A	70.0	95.0	100.0
	Uptake	500	ml/100 l	A			
13	F6246	300	ml/ha	A			
	Roundup Ultra Max	950	ml/ha	A	95.0	90.0	100.0
14	F6246	600	ml/ha	A			
	Roundup Ultra Max	950	ml/ha	A	100.0	100.0	100.0
15	Paradigm	50	g/ha	B			
	Roundup Ultra Max	950	ml/ha		0.0	0.0	10.0
16	Hot Shot	1	l/ha	B			
	Roundup Ultra Max	950	ml/ha		0.0	0.0	30.0
17	Garlon Fallow Master	327	ml/ha	B			
	Roundup Ultra Max	950	ml/ha		0.0	0.0	40.0
18	Sprayseed	3200	ml/ha	B			
	Uragan	3500	g/ha	B	0.0	0.0	70.0
	BS 1000	100	ml/100 l	B			
19	Sharpen	26	g/ha	B			
	Arsenal Express	5000	ml/ha	B	0.0	0.0	15.0
	Hasten	500	ml/100 l	B			
20	Alliance	6000	ml/ha	B	0.0	0.0	85.0
21	NUL3065	700	g/ha	B			
	Gramoxone 360	2000	ml/ha	B	0.0	0.0	60.0
22	F6365	370	ml/ha	B			
	Roundup Ultra Max	950	ml/ha	B	0.0	0.0	50.0
23	F6365	750	ml/ha	B			
	Roundup Ultra Max	950	ml/ha	B	0.0	0.0	50.0

Note: Timing B applications are residual sprays and we wouldn't expect full weed control after 7 days.

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PRE-EMERGENT GRASS CONTROL IN WHEAT



INTRODUCTION

GENERAL DISCUSSION

A trial was conducted near Rand, NSW in 2015 to evaluate the efficacy of pre-emergent herbicides for grass control in wheat, cv. Lancer. The trial targeted annual ryegrass (ARG, *Lolium rigidum*) which was evenly sown across the trial site. Both the wheat crop and ARG established well in good soil moisture.

Weather

Growing season rainfall was slightly below average with 258 mm falling between May and September, compared to the long term average of 265 mm. Conditions were very dry through September and October.

Temperature was generally average with some severe frosting in low lying, frost prone areas.

Visual Weed Control and Weed Counts

At 58 days after application (DAA), all treatments gave over 90 % control of ARG with the exception of NUL3065, Avadex Xtend, FMZ 1303 and Terbyne Xtreme plus Avadex Xtend or Trifluralin. The addition of Avadex Xtend, Boxer Gold or Sakura to NUL3065 and Trilogy 600 or FMZ 1407 to FMZ 1303 increased visual control of the weed significantly (Table 1 and Figure 1). By 87 DAA all mixtures gave equal to or over 95 % control of ARG, as did Sakura, Boxer Gold and FMZ 1303 when applied alone. Slightly lower levels of control were given by Avadex Xtend and NUL3065 gave 83 % control at this time. This result was also reflected in ARG weed counts where areas treated with NUL3065 had a mean of 33 plants/m² where all other mixtures were associated with numbers between 0 and 8 plants/m². The plant counts showed that all mixtures were highly effective for the control of ARG as numbers in untreated areas ranged between 105 and 111 plants/m².

Crop Phytotoxicity

At 58 and 87 DAA there was no phytotoxicity evident (Table 2).

Crop Biomass

At 58 DAA, there were no biomass reductions in areas treated with NUL3065 at 120 g/ha plus Sakura at 118 g/ha, FMZ 1303 at 2500 ml/ha and Terbyne Xtreme at 1000 g/ha plus Avadex Xtend at 2500 ml/ha (Table 2). All other mixtures reduced biomass slightly and NUL3065 plus Boxer Gold, Boxer Gold plus Avadex Xtend, FMZ 1303 plus FMZ 1047 and Terbyne Xtreme plus Trifluralin were associated with biomass reductions of 10 % or more at this time. By 87 DAA all treatments, with the exception of FMZ 1303, were associated with some reductions in biomass. Biomass reductions of slightly more than 10 % remained in areas treated with the above mentioned mixtures.

CROP & SOWING DETAILS

Crop Name	Wheat
Variety	Lancer
Planting Date	24/5/15
Planting Method:	Direct Drilled
Planting Rate (kg/ha):	65
Depth, Unit (cm):	2
Row Spacing, Unit (cm):	23
No. Rows:	6
Soil Moisture:	Moist
Seed Bed:	Friable

TRIAL MAINTENANCE

Fertiliser				
Date	Product Name	Description	Rate	Unit
24/05/2015	Granulock Z	Below Seed	80.0	kg
11/09/2015	Urea	Top-dressed @ GS32-37	100.0	kg

MAINTENANCE

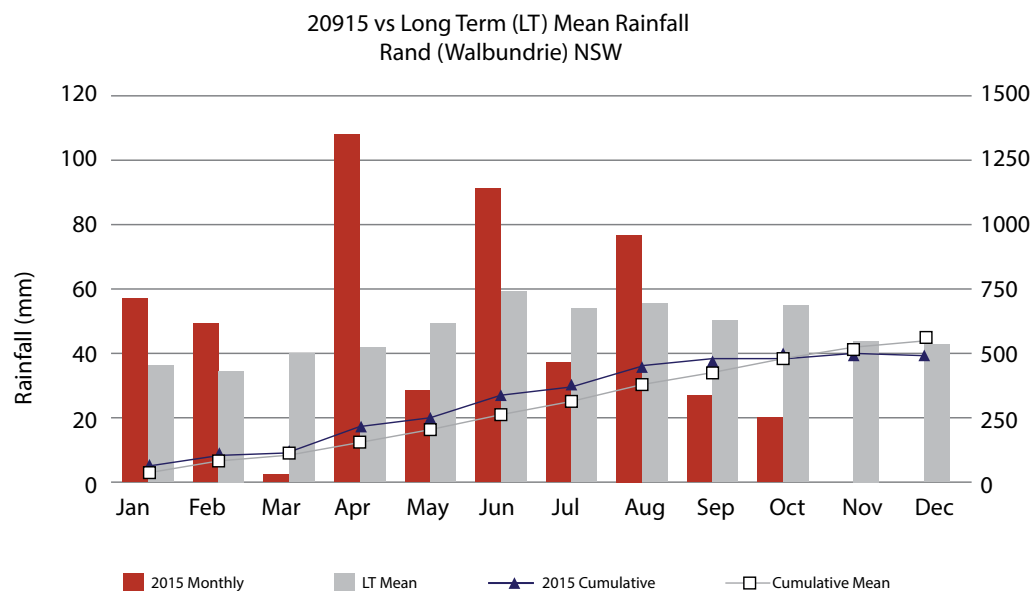
Date	Product Name	Description	Rate	Unit
24/05/2015	Roundup UltraMax	KD	1.5	L
10/09/2015	Precept	GS31-32	1.5	L
	Prosaro		450.0	mL

TREATMENT APPLICATION

Application Description	A	B
Application Date:	24/05/2015	24/05/2015
Application Timing:	IBS	PSPE

RAINFALL

GSR (1st May – 30th September) – 258 mm
 Long-term average GSR (1st May – 30th September) – 265 mm

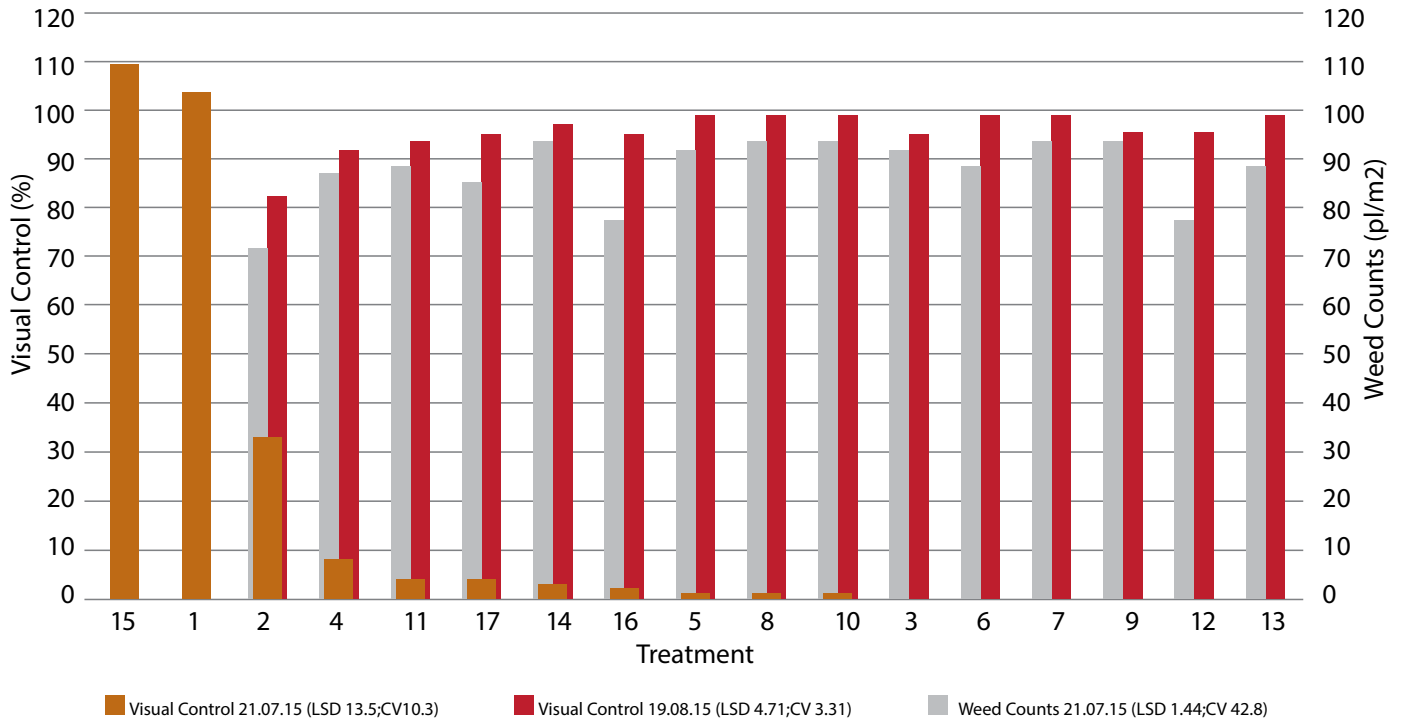


(Source: Walbundrie, NSW – Bureau of Meteorology)

Pest Name					ARG	ARG	ARG
Crop Name					Wheat	Wheat	Wheat
Rating Date					21/07/2015	19/08/2015	21/07/2015
Rating Type					Visual Control	Visual Control	Weed counts
Rating Unit					%	%	plants/m ²
Crop Stage Majority					GS 14-21	GS30-31	GS 14-21
Days After Application					58 DAA	87 DAA	58 DAA
No.	Treatment	Rate	Rate	Appl			
1	Untreated				0 d	0 e	105 a
2	NUL3065	120	g/ha	A	73 c	83 d	33 b
3	NUL3065	120	g/ha	A	93 a	97 abc	0 c
	Avadex Xtend	2500	ml/ha	A			
4	Avadex Xtend	2700	ml/ha	A	88 ab	93 c	8 c
5	NUL3065	120	g/ha	A	93 a	100 a	1 c
	Boxer Gold	2500	ml/ha	A			
6	NUL3065	120	g/ha	A	90 ab	100 a	0 c
	Sakura	118	g/ha	A			
7	Sakura	118	g/ha	A	95 a	100 a	0 c
8	Sakura	118	g/ha	A	95 a	100 a	1 c
	Avadex Xtend	2500	ml/ha	A			
9	Boxer Gold	2500	ml/ha	A	95 a	97 abc	0 c
10	Boxer Gold	2500	ml/ha	A	95 a	100 a	1 c
	Avadex Xtend	2500	ml/ha	A			
11	Boxer Gold	1750	ml/ha	A	90 ab	95 bc	4 c
	Boxer Gold	750	ml/ha	B			
12	FMZ 1303	2500	ml/ha	A	78 bc	97 abc	0 c
13	FMZ 1303	2500	ml/ha	A	90 ab	100 a	0 c
	Trilogy 600	1600	ml/ha	A			
14	FMZ 1303	2500	ml/ha	A	95 a	98 ab	3 c
	FMZ1407	190	ml/ha	A			
15	Untreated				0 d	0 e	111 a
16	Terbyne Xtreme	1000	g/ha	A	78 bc	97 abc	3 c
	Avadex Xtend	2500	ml/ha	A			
17	Terbyne Xtreme	1000	g/ha	A	87 abc	97 abc	4 c
	Trifluralin	2000	ml/ha	A			
LSD P=.05					13.5	4.71	11.53
CV					10.3	3.31	42.8
Treatment Prob(F)					0.0001	0.0001	0.0001

ARG = Annual Ryegrass
DAA = Days After Application
A = IBS application; B = PSPE application
Means followed by same letter do not significantly differ (P=.05, LSD)

Pre-emergent grass control in wheat
ARG Visual Control vs Weed Counts



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BARLEY VARIETY TRIAL



INTRODUCTION

GENERAL DISCUSSION

A trial was conducted near Rand, NSW in 2015 to evaluate seventeen barley varieties. All varieties established well in good soil moisture.

Weather

Growing season rainfall was slightly below average with 258 mm falling between May and September, compared to the long term average of 265 mm. Conditions were very dry through September and October.

Temperature was generally average with some severe frosting in low lying, frost prone areas.

Yield

LaTrobe gave the highest yield of 3.48 t/ha which was 1.28 t/ha greater than the lowest yielding variety Oxford (2.20 t/ha). Hindmarsh (2.96 t/ha), Gairdner (2.70 t/ha), GrangeR (2.86 t/ha), Alestar (2.94 t/ha), Maltstar (2.79 t/ha) and IGB1334T (2.83 t/ha) also yielded significantly higher than Oxford.

CROP & SOWING DETAILS

Crop Name	Barley
Variety	Various
Planting Date	24/05/2015
Planting Method	Direct Drilled
Planting Rate (kg/ha)	55
Depth, Unit (cm)	3.5
Row Spacing, Unit (cm)	23
No. Rows	6
Soil Moisture	Moist
Seed Bed	Friable
Stubble Cover	100
Harvest Date	14/12/2015

Fertiliser

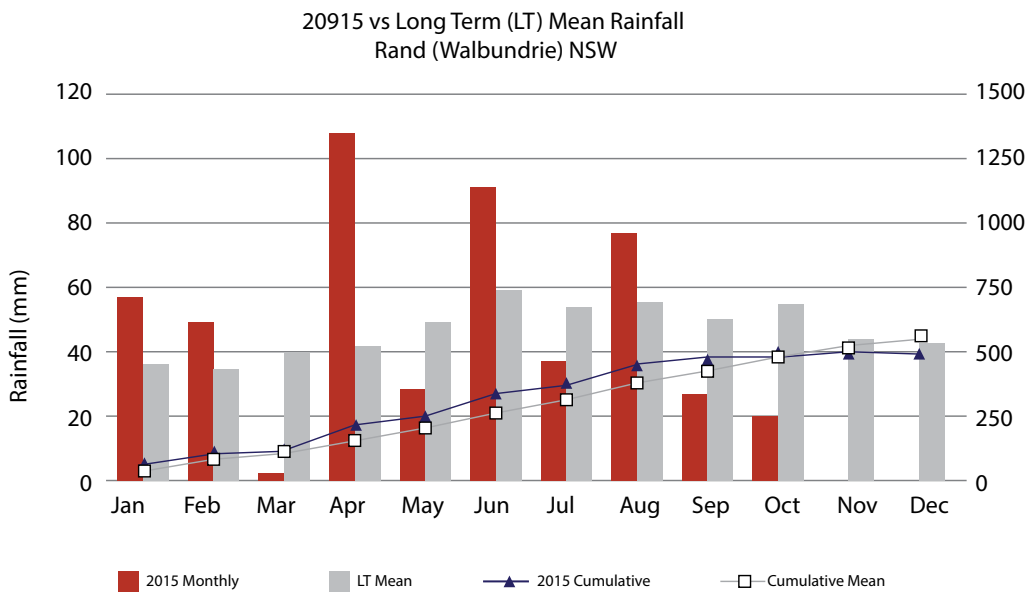
Date	Product Name	Description	Rate	Unit
24/05/2015	Granulock Z	Below Seed	80.0	kg
24/05/2015	Urea	Below Seed	50.0	kg
08/09/2015	Urea	Top-dressed @ GS32	100.0	kg
11/09/2015	Urea	Top-dressed @ GS32-37	100.0	kg

MAINTENANCE				
Date	Product Name	Description	Rate	Unit
24/05/2015	Roundup UltraMax	KD	1.5	L
24/05/2015	Sharpen	KD	25.0	g
24/05/2015	Boxer Gold	IBS	2.5	L
10/09/2015	Precept	GS31-32	1.5	L
	Prosaro		450.0	mL

RAINFALL

GSR (1st May – 30th September) – 258 mm

Long-term average GSR (1st May – 30th September) – 265 mm



(Source: Walbundrie, NSW – Bureau of Meteorology)

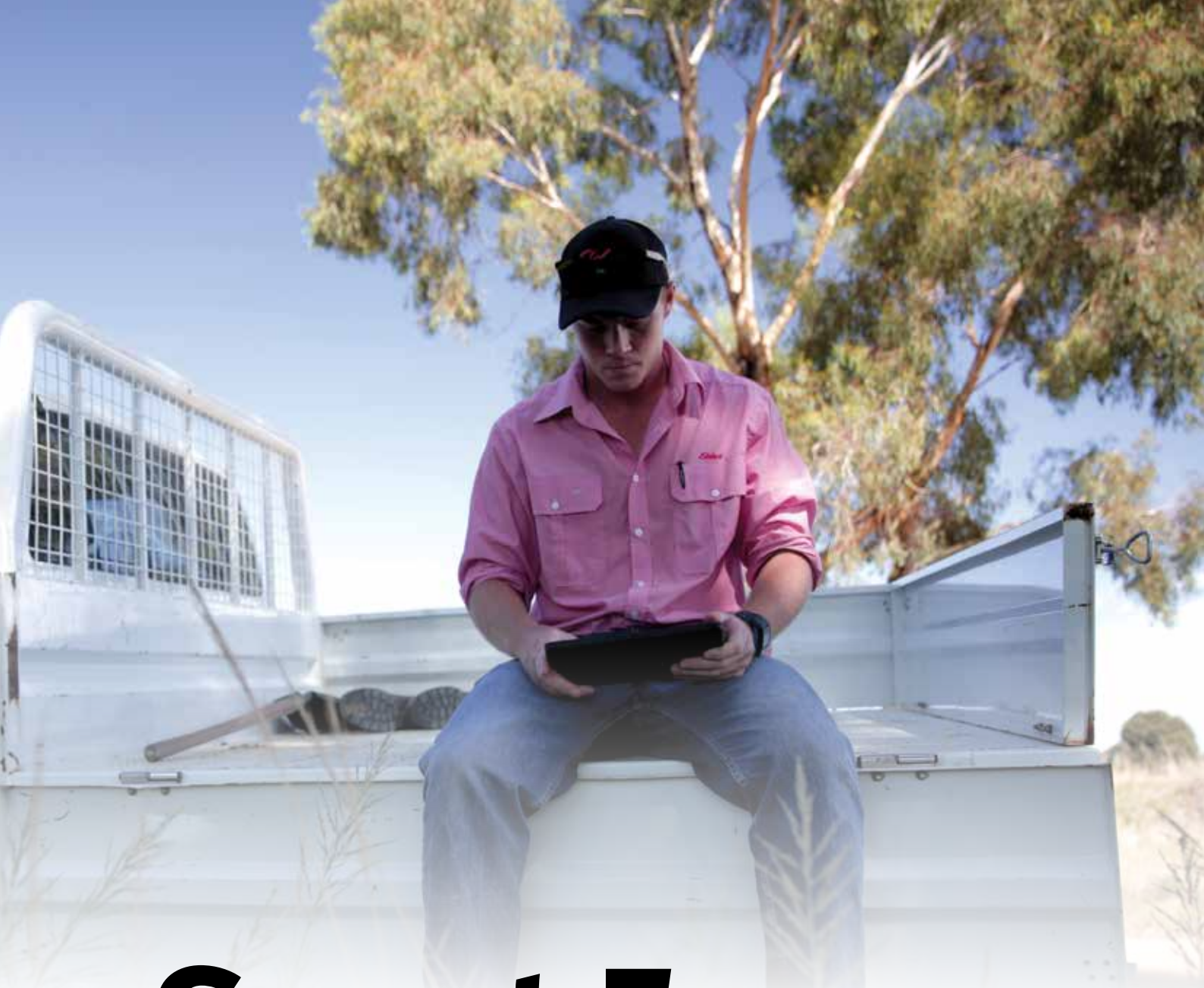
RESULTS

TABLE 1: BARLEY YIELD (T/HA)

Crop Name	Rating Date	Rating Type	Rating Unit	Barley 14/12/2015 YIELD t/ha	
Trt No.	Treatment Name	Rate	Rate Unit	3	
1	Hindmarsh	55	kg/ha	2.96	b
2	LaTrobe	55	kg/ha	3.48	a
3	Baudin	55	kg/ha	2.27	de
4	Buloke	55	kg/ha	2.49	b-e
5	Compass	55	kg/ha	2.55	b-e
6	Commander	55	kg/ha	2.52	b-e
7	Scope	55	kg/ha	2.49	b-e
8	Gairdner	55	kg/ha	2.70	bcd
9	Rattler	55	kg/ha	2.68	b-e
10	Flinders	55	kg/ha	2.44	cde
11	Westminster	55	kg/ha	2.27	de
12	GrangeR	55	kg/ha	2.86	bc
13	Oxford	55	kg/ha	2.20	e
14	Alestar	55	kg/ha	2.94	b
15	Topstar	55	kg/ha	2.49	b-e
16	Maltstar	55	kg/ha	2.79	bc
17	IGB1334T	55	kg/ha	2.83	bc
LSD P=.05				0.496	
CV				11.28	
Treatment Prob(F)				0.0017	

Means followed by same letter or symbol do not significantly differ (P=.05, LSD)

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.



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WHEAT VARIETY TRIAL



INTRODUCTION

GENERAL DISCUSSION

A trial was conducted near Rand, NSW in 2015 to evaluate twenty wheat varieties. All varieties established well in good soil moisture.

Weather

Growing season rainfall was slightly below average with 258 mm falling between May and September, compared to the long term average of 265 mm. Conditions were very dry through September and October.

Temperature was generally average with some severe frosting in low lying, frost prone areas.

Yield

Corack gave the highest yield of 3.57 t/ha, 1.78 t/ha greater than the lowest yielding variety Penne (1.79 t/ha). Wedgetail (2.05 t/ha), Naparoo (1.99 t/ha) and Rotini (1.97 t/ha) all had similar yields to Penne. All other varieties were associated with significantly higher yields than Penne.

CROP & SOWING DETAILS

Crop Name	Wheat
Variety	Various
Planting Date	24/05/2015
Planting Method	Direct Drilled
Planting Rate (kg/ha)	65
Depth, Unit (cm)	2
Row Spacing, Unit (cm)	23
No. Rows	6
Soil Moisture	Moist
Seed Bed	Friable
Stubble Cover	0
Harvest Date	14/12/2015

Fertiliser

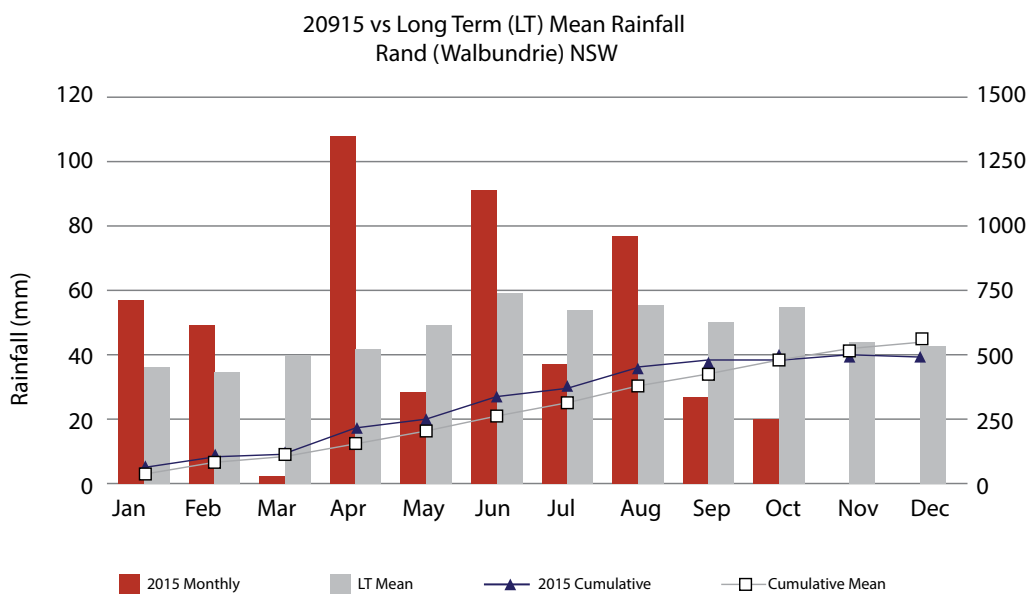
Date	Product Name	Description	Rate	Unit
24/05/2015	Granulock Z	Below Seed	80.0	kg
24/05/2015	Urea	Below Seed	50.0	kg
08/09/2015	Urea	Top-dressed @ GS32	100.0	kg
11/09/2015	Urea	Top-dressed @ GS32-37	100.0	kg

MAINTENANCE				
Date	Product Name	Description	Rate	Unit
24/05/2015	Roundup UltraMax	KD	1.5	L
24/05/2015	Sharpen	KD	25.0	g
24/05/2015	Boxer Gold	IBS	2.5	L
10/09/2015	Precept	GS31-32	1.5	L
	Prosaro		450.0	mL

RAINFALL

GSR (1st May – 30th September) – 258 mm

Long-term average GSR (1st May – 30th September) – 265 mm



(Source: Walbundrie, NSW – Bureau of Meteorology)

RESULTS

TABLE 1: WHEAT YIELD (T/HA)

Crop Name Rating Date Rating Type Rating Unit Crop Stage Majority				Wheat 14/12/2015 YIELD t/ha GS99
Trt No.	Treatment Name	Rate	Rate Unit	2
1	Wedgetail	65	kg/ha	2.05 fgh
2	Forrest	65	kg/ha	2.77 e
3	Naparoo	65	kg/ha	1.99 fgh
4	Gregory	65	kg/ha	3.04 b-e
5	Lancer	65	kg/ha	2.23 fg
6	Trojan	65	kg/ha	2.85 de
7	Viking	65	kg/ha	3.26 b
8	Corack	65	kg/ha	3.57 a
9	Livingston	65	kg/ha	3.05 b-e
10	Suntop	65	kg/ha	2.85 de
11	Jade*	65	kg/ha	2.95 cde
12	Steel*	65	kg/ha	2.97 b-e
13	Penne*	65	kg/ha	1.79 h
14	Rotini*	65	kg/ha	1.94 gh
15	Cobalt*	65	kg/ha	3.16 bc
16	B53*	65	kg/ha	3.03 b-e
17	Condo	65	kg/ha	3.10 bcd
18	Emu Rock	65	kg/ha	2.97 b-e
19	Spitfire	65	kg/ha	2.27 f
20	V43-15136	65	kg/ha	3.02 b-e
LSD P=.05				0.290
CV				6.41
Treatment Prob(F)				0.0001

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 Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

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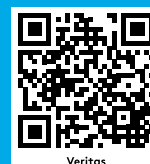
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CANOLA SYSTEM TRIAL



INTRODUCTION

The trial was conducted near Mallala 42 km north of Adelaide South Australia in 2015 to evaluate new and current commercial available chemistry in Canola to assess insect, weed and disease control using many different application techniques including, seed treatment, fertiliser treatment, incorporated by sowing and post emergent.

GENERAL CONCLUSION

Weather

The trial was sown into a canola stubble to promote disease after early rainfall, however conditions dried and below average growing season rainfall fell at the site.

Control of annual ryegrass (*Lolium rigidum*) and snail medic (*Medicago scutellata*)

At 50 and 63 DAA DA-A, All herbicide treatments provided significant control of Snail medic in the canola cv. 43Y85CL. No biomass differences were observed when assessed at 50 and 117 days after planting (DAP)

Annual ryegrass was not present in sufficient numbers to draw any reliable conclusions on herbicide efficacy.

Insect control

Insects were not present in sufficient numbers to conduct any assessments on level of control. Biomass was not reduced by any of the evaluated insecticides.

Control of blackleg (*Leptosphaeria maculans*)

At 116 DAP, severity of blackleg was significantly reduced by treatments of Intake Combi and Amistar Xtra. Aviator Xpro tended to reduce severity of blackleg, but this was not significant.

Bioforge seed treatment

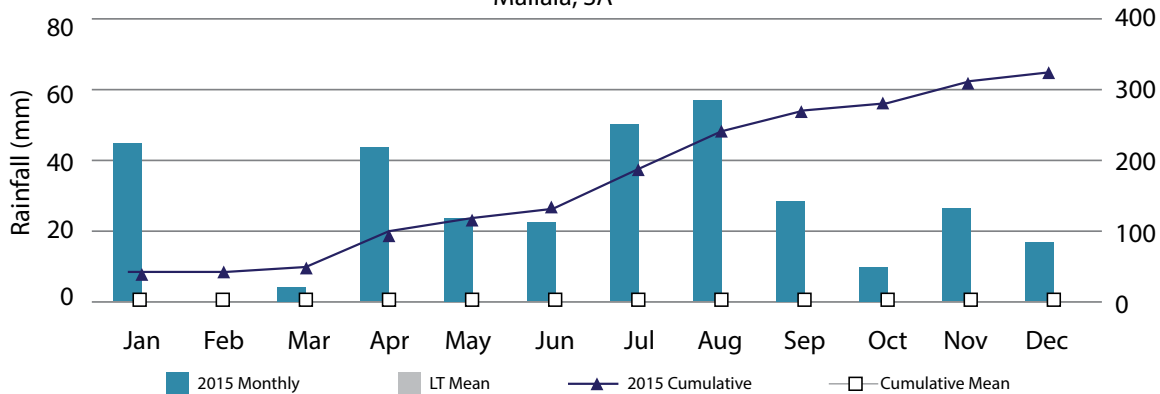
The application of Bioforge as a seed treatment did not increase biomass of the canola cv. 43Y85CL under the conditions of this trial.

SOWING DETAILS	
Crop Name	Canola
Variety	43Y85CL
Planting Date	04/06/2015
Planting Method	Knife Point Press Wheel
Planting Equipment	TPSo12
Planting Rate (kg/ha)	3.5
Depth, Unit (cm)	1
Row Spacing, Unit (cm)	25
No. Rows	5
Soil Moisture	Moist
Stubble Cover	30
Paddock History, 2014	Canola
Paddock History, 2013	Lentils

Trial Maintenance				
Fertiliser				
Date	Product Name	Description	Rate	Unit
04/06/2015	Croplift19	Below Seed	150.0	kg/ha
24/08/2015	Urea	Top Dress (GS 50)	100.0	kg/ha

Maintenance				
Date	Product Name	Description	Rate	Unit
03/06/2015	Roundup UltraMax	IBS	3.0	L/ha
23/07/2015	Lontrel Advanced	GS14-16	170.0	mL/ha
13/08/2015	Roundup	Buffering (GS31)	2.0	L/ha
	Hammer	Buffering (GS31)	35.0	mL/ha
04/09/2015	Prosaro	GS50 - Range 1 only	400.0	mL/ha
	BS 1000	GS50 - Range 1 only	0.1	%v/v
	Amistar	GS50 - Range 2 only	1.0	L/ha
	BS 1000	GS50 - Range 2 only	0.1	%v/v
	Aviator	GS50 - Range 3 only	600.0	mL/ha
29/10/2015	BS 1000	GS50 - Range 3 only	0.1	%v/v
	Reglone	Trial destruction	3.0	L/ha
	Gramoxone	Trial destruction	3.0	L/ha
	BS1000	Trial destruction	0.1	%v/v

2015 vs Long Term (LT) Mean Rainfall
Mallala, SA



(Source: Roseworthy, SA - Bureau of Meteorology)

Application Description				
	A	B	C	D
Application Date:	03/06/2015	05/06/2015	21/07/2015	13/08/2015
Application Timing:	IBS	PSPE	EARLY POST-EM	EXTRA

Crop Stage At Each Application				
	A	B	C	D
Stage Scale Used:	BBCH	BBCH	BBCH	BBCH
Stage Majority, Percent:	00	00	14	22
Stage Minimum, Percent:	00	00	14	22
Stage Maximum, Percent:	00	00	16	22

(Source: Walbundrie, NSW – Bureau of Meteorology)

MAINTENANCE	
Date	
05/06/2015	Weeds present: Snail Medic 2-4 Node, Diameter: 10cm & 2/m ² Ryegrass: GS10-24, Diameter 5-15cm & 1/m ²
26/06/2015	No weeds, no insects or disease present
26/06/2015	HA/NA - Growth stage too young to apply timing C. Mick advised on weekly basis.
21/07/2015	A lot of snail medic weeds 2-3 leaf.
23/07/2015	Rows 11 and 18 sprayed only. Confirmed with Elders, Mick Brom. - HA Photos available on webdocs of untreated plots 308, 202 and 101. - HA Due to low weed count throughout trial whole of plots were recorded with only the untreated plots having slightly more weeds - HA
05/08/2015	Photos available on webdocs for plots 116 and 118. Plot 117 showed similar symptoms but subsequent growth has cure it. - HA No aphids anywhere to be seen so not entered to rating shell. MB confirmed. - HA Remainder of trial had no distinctive diseases detected. - HA
13/08/2015	An extra application to buffer 319 was requested of 800 mL/ha Ecopar and 3% v/v BS1000. - HA
24/08/2015	56 DA-A assessment unable to be assessed due to lack of insect and disease pressure. This was decided between Elders (Mick Brougham) and Kalyx. Majority of Blackleg infection in plots are confined to lower half of plant leaves. - HA
04/09/2015	Range 1, 2 & 3 were applied with different fungicide mixes as per request from Mick Brougham. Refer to maintenance tab for further details.

RESULTS

TABLE 4 – FUNGICIDE TREATMENTS

– Pest severity and incidence percent of (*Leptosphaeria maculans*) at 23, 88 DA-A and 46 DA-D – Analysis of variance

Pest Name	Blackleg Canola		Blackleg Canola		Blackleg Canola		Blackleg Canola		Blackleg Canola	
Crop Name	26/06/2015		26/06/2015		24/08/2015		24/08/2015		28/09/2015	
Rating Date	Pest Severity		Pest Incidence		Pest Severity		Pest Incidence		Pest Severity	
Rating Type	%		%		%		%		%	
Rating Unit	10		10		50		50		67	
Crop Stage Majority	HA/NA		HA/NA		HA		HA		HA	
Assessed By	23 21		23 21		82 11		82 11		117 46	
Days After First/Last Applic.	23 DA-A		23 DA-A		82 DA-A		82 DA-A		46 DA-D	
Trt-Eval Interval	23 DA-A		23 DA-A		82 DA-A		82 DA-A		46 DA-D	
ARM Action Codes	23 DA-A		23 DA-A		82 DA-A		82 DA-A		46 DA-D	
Trt No.	Treatment Name	Rate	Rate Unit	Appl Code						
1	Untreated		kg/ha		0.0 a	0.0 a	7.1 a	100.0 a	27.6 a	0.0 b
15	Intake Combi	333	ml/100 kg	A	0.0 a	0.0 a	8.0 a	97.3 a	11.5 c	100.0 a
16	Aviator Xpro	550	ml/ha	C	0.0 a	0.0 a	10.2 a	100.0 a	18.9 ab	100.0 a
17	Amistar Xtra	1000	ml/ha	C	0.0 a	0.0 a	7.4 a	100.0 a	14.5 bc	100.0 a
LSD P=.05					.	.	NSD	NSD	N/A	.
Standard Deviation					0.00	0.00	1.82	2.31	0.09t	0.00
CV					0.0	0.0	22.2	2.3	8.61t	0.0
Bartlett's X2					0.0	0.0	1.0	0.0	0.6	0.0
P(Bartlett's X2)					.	.	0.796	.	0.899	.
Replicate F					0.000	0.000	1.303	1.000	5.401	0.000
Replicate Prob(F)					1.0000	1.0000	0.3389	0.4219	0.0328	1.0000
Treatment F					0.000	0.000	1.761	1.000	133.717	0.000
Treatment Prob(F)					1.0000	1.0000	0.2542	0.4547	0.0001	1.0000

Means followed by same letter or symbol do not significantly differ (P=.05, LSD)
t=Mean descriptions are reported in transformed data units, and are not de-transformed.
Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.
Could not calculate LSD (% mean diff) for columns 2,3,16 because error mean square = 0.
NSD = Not Significantly Different
N/A = Not applicable
AL = Data transformed using log with resulting letter of separation applied to original means.

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DISEASE MANAGEMENT IN BARLEY TRIAL



INTRODUCTION

The trial was conducted near Mallala 42 km north of Adelaide SA in 2015 to evaluate new and current commercial available fungicide products in Barley.

GENERAL DISCUSSION

Weather

Barley cv. Charger was sown into Barley stubble with high soil moisture after good early rainfall, however below average rainfall was recorded for the growing season after a dry finish. Treatments were applied to seed and fertilizer prior to sowing, with foliar treatments being applied in a water rate of 100 L/ha at 49 days after planting.

Net form of net blotch control (*Pyrenophora teres*)

At 17 days after application timing B (DA-B), treatments containing Systiva, as well as combinations of Tazer Xpert with Banjo, and BAS 70203F most effectively reduced the incidence of net blotch on FL-1, compared with other treatments. A similar trend was observed for severity of net blotch infection, with AD-AU-1408 also providing comparable levels of net blotch control.

On FL-2, the combination of Tazer Xpert and Banjo, with and without Systiva, as well as Systiva alone reduced the incidence and severity of net blotch of FL-2. Furthermore on FL-3, the incidence of net blotch was only significantly reduced by Systiva.

Although insignificant, treatments of Aviator, Tazer Xpert in combination with Banjo, as well as Systiva with a mixture of Tazer Xpert and Banjo, tended to reduce incidence of net blotch on FL-1 at 31 DA-B. At this assessment timing, severity of net blotch on FL-2 was most effectively controlled by Systiva applied alone, and followed by Tazer Xpert and Banjo, as well as the high rate of Tazer Xpert and Banjo, BAS 70203F and Amistar Xtra. Prosaro, ELDo01 and Legend were less effective for control of net blotch on FL-2.

At 47 DA-B, incidence and severity of net blotch on FL-2 was most effectively reduced by treatments containing Systiva, as well as the high rate of Tazer Xpert and Banjo and BAS 790203F. The incidence of net blotch on FL-3 was only significantly reduced by treatments containing Systiva at 47 DA-B.

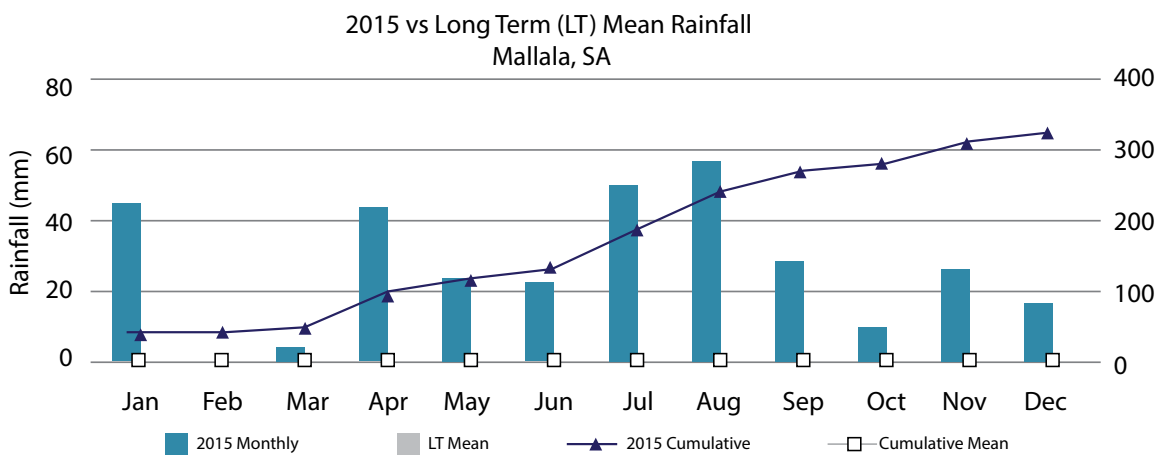
Yield was taken with a plot harvester at 103 DA-B, with no significant differences between treatments recorded.

SOWING DETAILS

Crop Name	Barley
Variety	Charger
Planting Date	04/06/2015
Planting Method	Knife Point Press Wheel
Planting Equipment	TPSo12
Planting Rate (kg/ha)	75
Depth, Unit (cm)	3
Row Spacing, Unit (cm)	25
No. Rows	5
Soil Moisture	Moist
Stubble Cover	35
Paddock History, 2014	Barley
Paddock History, 2013	Wheat

Trial Maintenance				
Fertiliser				
Date	Product Name	Description	Rate	Unit
04/06/2015	Croplift19	Below Seed	150.0	kg/ha
31/07/2015	Urea	Top Dress (GS18-23)	240.0	g/plot
17/08/2015	Urea	Top Dress (GS32-39)	240.0	g/plot
11/09/2015	Urea	Top-dressed @ GS32-37	100.0	kg

Maintenance				
Date	Product Name	Description	Rate	Unit
03/06/2015	Roundup UltraMax	Knockdown	3.0	L/ha
23/07/2015	Lontrel Advance	GS12-15	75.0	mL/ha
	LVE Agritone	GS12-15	600.0	mL/ha
13/08/2015	Roundup	Buffering (GS31)	2.0	L/ha
	Hammer	Buffering (GS31)	35.0	mL/ha
29/10/2015	Reglone	Trial destruction	3.0	L/ha
	Gramoxone	Trial destruction	3.0	L/ha
	BS1000	Trial destruction	0.1	%v/v



(Source: Roseworthy, SA - Bureau of Meteorology)

Application Description		
	A	B
Application Date:	4/6/2015	31/07/2015
Application Timing:	Day of sowing	6 WA-S

Crop Stage At Each Application		
	A	B
Crop 1 Code, BBCH Scale:	Barley	Barley
Stage Scale Used:	BBCH	BBCH
Stage Majority, Percent:	Day of sowing	GS18-23

Charger Barley FL-2 Leaf area infected by net form net blotch @ 31 Days after application B

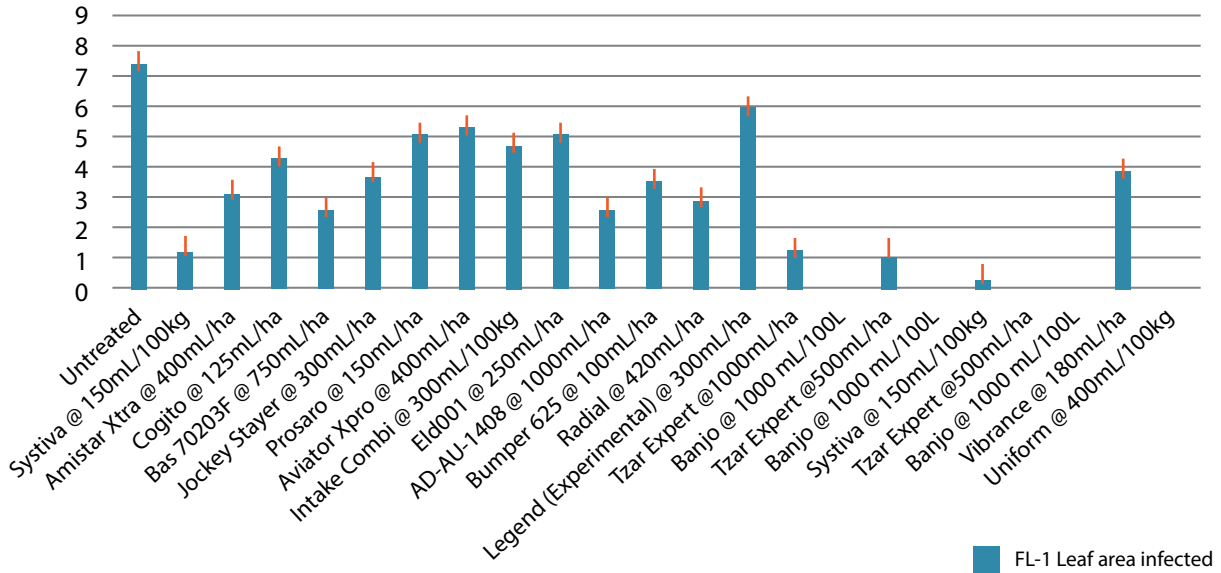


Photo 1: Example of untreated control net form net blotch infection in barley cv. Charger at 17 DA-A

RESULTS

TABLE 1: DISEASE SEVERITY AND INCIDENCE OF NET FORM NET BLOTCH (PYRENOPHORA TERES) ON FLAG-1, 2 AND 3 IN BARLEY CV. CHARGER AT 17 DA-A

Rating Date	Aug-17-2015	Aug-17-2015	Aug-17-2015	Aug-17-2015	Aug-17-2015	Aug-17-2015			
Crop Variety	Charger	Charger	Charger	Charger	Charger	Charger			
Rating Type	Pest Severity	Pest Incidence	Pest Severity	Pest Incidence	Pest Severity	Pest Incidence			
Part Rated	Flag-1	Flag-1	Flag-2	Flag-2	Flag-3	Flag-3			
Rating Unit	% LAI	%	% LAI	%	% LAI	%			
Crop Stage Minimum/Maximum	32 39	32 39	32 39	32 39	32 39	32 39			
Trt-Eval Interval	17 DA-A	17 DA-A	17 DA-A	17 DA-A	17 DA-A	17 DA-A			
ARM Action Codes				AA		AA			
Trt No.	Treatment Name	Rate	Rate Unit						
1	Untreated			7.3 a	81.3 ab	10.3 a	93.3 abc	37.2 a	100.0 a
2	Systiva	150	ml/100 kg	1.2 fg	22.7 ef	1.7 ghi	33.3 ghi	8.5 ef	69.3 b
3	Amistar Xtra	400	ml/ha	3.2 c-f	52.0 cd	4.9 b-g	68.0 def	20.8 bcd	90.7 a
4	Cogito	125	ml/ha	4.3 b-e	66.7 abc	5.7 b-f	82.7 a-e	21.9 bcd	100.0 a
5	BAS 70203F	750	ml/ha	2.6 ef	40.0 de	4.5 c-h	56.0 e-h	15.3 de	88.0 a
6	Jockey Stayer	300	ml/100 kg	3.7 cde	69.3 abc	4.7 b-h	70.7 b-f	25.7 bcd	98.7 a
7	Prosaro	150	ml/ha	5.0 bcd	80.0 ab	5.9 b-e	84.0 a-d	24.8 bcd	100.0 a
8	Aviator Xpro	400	ml/ha	5.3 abc	81.3 ab	7.6 a-d	97.3 a	30.9 ab	100.0 a
9	Intake Combi	300	ml/100 kg	4.7 b-e	74.7 abc	7.7 abc	90.7 a-d	28.8 abc	100.0 a
10	ELDoo1	250	ml/ha	5.0 bcd	70.7 abc	7.6 a-d	88.0 a-e	29.8 ab	98.7 a
11	AD-AU-1408	1000	ml/ha	2.6 ef	50.7 cd	3.5 e-i	58.7 e-h	30.4 ab	100.0 a
12	Bumper 625	100	ml/ha	3.5 cde	60.0 bcd	4.3 d-h	70.7 c-f	27.4 abc	98.7 a
13	Radial	420	ml/ha	2.9 def	54.7 cd	3.9 e-h	66.7 d-g	29.3 abc	100.0 a
14	Legend (Experimental)	300	ml/ha	5.9 ab	85.3 a	8.1 ab	89.3 ab	27.3 abc	100.0 a
15	Tazer Xpert	1000	ml/ha						
	Banjo	1000	ml/100 l	1.3 fg	25.3 ef	2.4 f-i	42.7 fgh	21.6 bcd	98.7 a
16	Tazer Xpert	500	ml/ha						
	Banjo	1000	ml/100 l	1.1 fg	21.3 ef	1.5 hi	30.7 hi	18.5 cde	84.0 a
17	Systiva	150	ml/100 kg						
	Tazer Xpert	500	ml/ha	0.3 g	6.7 f	0.5 i	9.3 i	3.7 f	50.7 b
	Banjo	1000	ml/100 l						
18	Vibrance	180	ml/100 kg						
	Uniform	400	ml/100 kg	3.9 b-e	73.3 abc	5.1 b-f	82.7 a-e	28.1 abc	100.0 a
LSD P=.05				2.15	24.36	3.37	N/A	10.96	N/A
Standard Deviation				1.30	14.68	2.03	12.38t	6.61	9.75t
CV				36.62	26.01	40.68	21.47t	27.66	11.81t
Bartlett's X2				26.181	21.839	24.981	14.399	10.197	7.81
P(Bartlett's X2)				0.071	0.191	0.095	0.639	0.895	0.452
Replicate F				1.191	0.049	0.339	0.006	20.762	1.055
Replicate Prob(F)				0.3162	0.9518	0.7148	0.9940	0.0001	0.3592
Treatment F				6.125	8.087	4.873	6.536	4.729	5.047
Treatment Prob(F)				0.0001	0.0001	0.0001	0.0001	0.0001	0.0001

Means followed by same letter or symbol do not significantly differ (P=.05, LSD)

t=Mean descriptions are reported in transformed data units, and are not de-transformed.

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

AA = Data transformed using arcsine with resulting letter of separation applied to original means.

N/A = Not Applicable

RESULTS

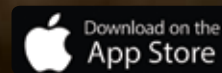
TABLE 2: DISEASE SEVERITY AND INCIDENCE OF NET FORM NET BLOTCH (PYRENOPHORA TERES) ON FLAG-1, 2 AND 3 IN BARLEY CV. CHARGER AT 31 DA-A

Rating Date	Aug-31-2015	Aug-31-2015	Aug-31-2015	Aug-31-2015	Aug-31-2015	Aug-31-2015			
Crop Variety	Charger	Charger	Charger	Charger	Charger	Charger			
Rating Type	Pest Severity	Pest Incidence	Pest Severity	Pest Incidence	Pest Severity	Pest Incidence			
Part Rated	Flag -1	Flag -1	Flag -2	Flag -2	Flag -3	Flag -3			
Rating Unit	% LAI	%	% LAI	%	% LAI	%			
Crop Stage Minimum/Maximum	37 37	37 37	37 37	37 37	37 37	37 37			
Trt-Eval Interval	31 DA-A	31 DA-A	31 DA-A	31 DA-A	31 DA-A	31 DA-A			
ARM Action Codes	AA	AA	AL	AA	AL	AA			
Trt No.	Treatment Name	Rate	Rate Unit						
1	Untreated			1.6 a	32.0 a	10.2 a	96.0 a	17.3 a	100.0 a
2	Systiva	150	ml/100 kg	0.7 a	14.7 a	1.4 f	28.0 fg	1.3 fg	26.7 gh
3	Amistar Xtra	400	ml/ha	1.1 a	21.3 a	3.9 cde	62.7 de	3.5 d-g	50.7 efg
4	Cogito	125	ml/ha	0.5 a	9.3 a	4.7 bcd	69.3 cd	8.4 a-d	89.3 a-d
5	BAS 70203F	750	ml/ha	0.7 a	13.3 a	6.0 cde	56.0 de	8.1 b-e	58.7 c-f
6	Jockey Stayer	300	ml/100 kg	0.6 a	12.0 a	4.9 bcd	64.0 cde	18.7 ab	85.3 abc
7	Prosaro	150	ml/ha	0.4 a	8.0 a	7.5 abc	76.0 bcd	9.1 a-d	86.7 a-d
8	Aviator Xpro	400	ml/ha	0.2 a	4.0 a	5.0 bcd	78.7 bcd	8.9 abc	92.0 ab
9	Intake Combi	300	ml/100 kg	0.9 a	18.7 a	5.9 bcd	78.7 bcd	9.6 abc	93.3 a-d
10	ELDoo1	250	ml/ha	1.7 a	34.7 a	7.9 ab	85.3 abc	14.1 abc	92.0 a-d
11	AD-AU-1408	1000	ml/ha	0.9 a	18.7 a	4.6 bcd	74.7 bcd	10.1 abc	93.3 ab
12	Bumper 625	100	ml/ha	0.2 a	4.0 a	3.6 cde	64.0 cde	11.2 a-d	81.3 a-d
13	Radial	420	ml/ha	0.3 a	6.7 a	4.3 bcd	76.0 bcd	6.9 a-d	86.7 a-d
14	Legend (Experimental)	300	ml/ha	0.6 a	10.7 a	6.1 abc	90.7 ab	8.0 abc	96.0 ab
15	Tazer Xpert	1000	ml/ha						
	Banjo	1000	ml/100 l	0.1 a	1.3 a	1.9 ef	38.7 ef	2.1 efg	40.0 fg
16	Tazer Xpert	500	ml/ha						
	Banjo	1000	ml/100 l	0.1 a	1.3 a	3.5 de	58.7 de	4.8 c-f	64.0 def
17	Systiva	150	ml/100 kg						
	Tazer Xpert	500	ml/ha	0.0 a	0.0 a	0.7 f	13.3 g	0.6 g	12.0 h
	Banjo	1000	ml/100 l						
18	Vibrance	180	ml/100 kg						
	Uniform	400	ml/100 kg	0.3 a	5.3 a	3.7 cde	69.3 cd	5.7 b-e	82.7 b-e
LSD P=.05				NSD	N/A	N/A	N/A	N/A	N/A
Standard Deviation				0.69	12.18t	0.16t	9.33t	0.26t	13.36t
CV				113.47	78.54t	27.81t	16.88t	35.14t	21.13t
Bartlett's X2				26.536	10.732	27.504	18.877	31.71	22.609
P(Bartlett's X2)				0.047*	0.826	0.051	0.336	0.016*	0.093
Replicate F				2.748	4.721	0.505	2.311	2.192	4.389
Replicate Prob(F)				0.0783	0.0155	0.6080	0.1146	0.1272	0.0202
Treatment F				1.593	1.906	5.278	7.145	4.098	6.435
Treatment Prob(F)				0.1214	0.0537	0.0001	0.0001	0.0002	0.0001

Means followed by same letter or symbol do not significantly differ (P=.05, LSD)
t=Mean descriptions are reported in transformed data units, and are not de-transformed.
Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.
AA = Data transformed using arcsine with resulting letter of separation applied to original means.
AL = Data transformed using log with resulting letter of separation applied to original means.
N/A = Not Applicable
NSD = Not Significantly Different

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ELDERS FENCE LINE KNOCKDOWN TRIAL

INTRODUCTION

The trial was conducted near Mallala 42 km north of Adelaide SA in 2015 to evaluate experimental and existing commercial available chemistry for knockdown and residual fence line weed control.

GENERAL CONCLUSION

All treatments were applied in a water rate of 100 L/ha to a fenceline consisting of wild oats, soursob, sow thistle and marshmallow. The spectrum of weeds varied between plots, resulting in not all weed species being present in all plots. Percentage control assessments for each species were conducted at 8, 32 and 47 DAA (days after application), with general brownout scores also being conducted at 32 and 47 DAA.

Control of wild oats (*Avena fatua*)

At 8 DAA, a higher level of wild oat control by treatments containing paraquat when compared with glyphosate was observed, with all treatments containing either Sprayseed or Gramoxone 360 achieving 100% control of wild oats. The addition of F6246 to Roundup Ultra Max gave greater control of wild oats than Roundup Ultra Max applied alone, with Hammer 400EC, Hot shot, Paradigm, and Nail.

All treatments evaluated gave 100% control of wild oats at 32 and 47 DAA.

Control of soursob (*Oxalis pes-caprae*)

Treatments containing Sprayseed or Gramoxone 360 as well as Alliance gave 100% control of soursob at 8 DAA. Treatments of F6246 in combination with Roundup Ultra Max increased control of soursob at the initial assessment.

By 32 DAA, all treatments evaluated achieved 100% control of soursob.

Control of sow thistle (*Sonchus oleraceus*)

At 8 DAA, all treatments able to be evaluated showed 100% control of sow thistle, with the exception of Roundup Ultra Max with Nail 600 and Hasten, and Roundup Ultra Max with Starane Advance and Uptake.

All treatments except Roundup Ultra Max applied alone completely controlled sow thistle by 32 DAA.

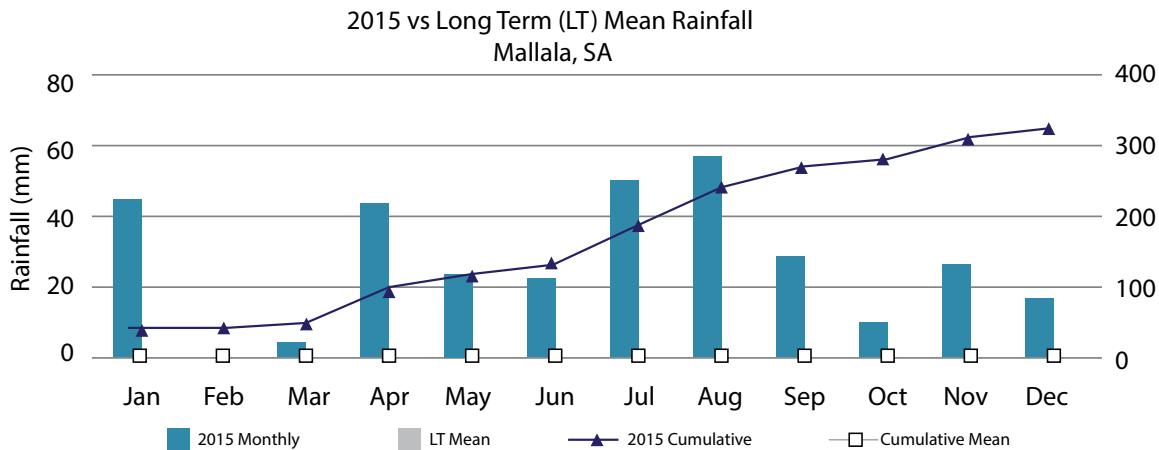
Control of marshmallow (*Malva parvi*)

All treatments able to be evaluated gave close to 100% control of marshmallow at 8, 32 and 47 DAA

The general brownout assessment showed very high to complete brownout for all treatments except Sharpen applied with Hasten, which gave 20% brownout at 32 DAA and 5% at 47 DAA

RAINFALL DATA

GSR (1st May – 30th September 2015) – 181.2 mm
 Annual Rainfall (January – December 2015) - 324mm



(Source: Roseworthy, SA - Bureau of Meteorology)

Application Description

A	
27/08/2015	03/06/2015
T1 – Fenceline Demo	IBS

Crop Stage At Each Application

A	
Stage Majority:	N/A (Fenceline)

Comments

Date	Product Name
27/08/2015	New fenceline position acquired. Plots 10x2 m. 101 is western end of road - HA
13/10/2015	Brownout column, plot 12 has had a hand boom fault.



Untreated control at 32 DAA



Roundup at 950 mL/ha, Hammer at 10 mL/ha and Hasten at 500 mL/100L at 32 DAA

RESULTS

RAW DATA TABLE 2: WEED CONTROL OF THISTLE (CIRSIUM SP.) AND MARSHMALLOW (PARVA MALVI) AT 8, 32 AND 47 DA-A

Rating Date		Sep-4-2015	Sep-28-2015	Oct-13-2015	Sep-4-2015	Sep-28-2015	Oct-13-2015
Crop Name		Fenceline	Fenceline	Fenceline	Fenceline	Fenceline	Fenceline
Pest Name		Thistle	Thistle	Thistle	Marsh-mallow	Marsh-mallow	Marsh-mallow
Rating Type		Weed Control	Weed Control	Weed Control	Weed Control	Weed Control	Weed Control
Rating Unit		%	%	%	%	%	%
Trt-Eval Interval		8 DA-A	32 DA-A	47 DA-A	8 DA-A	32 DA-A	47 DA-A
Trt No.	Treatment Name	Rate	Rate Unit	Appl Code	Plot		
1	Untreated				101	0.0	0.0
					Mean =	0.0	0.0
2	SpraySeed	1800	ml/ha	A	102	100.0	100.0
					Mean =	100.0	100.0
3	Roundup Ultra Max	950	ml/ha	A	103	.	.
					Mean =	.	.
4	Gramoxone 360	1250	ml/ha	A	104	100.0	100.0
					Mean =	100.0	100.0
5	Gramoxone 360	1250	ml/ha	A	105	100.0	100.0
	Sharpen	17	g/ha	A		.	.
	Hasten	1000	ml/100 l	A		.	.
					Mean =	100.0	100.0
6	Roundup Ultra Max	950	ml/ha	A	106	100.0	100.0
	Sharpen	17	g/ha	A		.	.
	Hasten	1000	ml/100 l	A		.	.
					Mean =	100.0	100.0
7	Sharpen	26	g/ha	A	107	.	.
	Hasten	1000	ml/100 l	A		.	.
					Mean =	.	.
8	Terrain FG	30	g/ha	A	108	100.0	100.0
	Weedmaster DST	1150	ml/ha	A			
	Hasten	500	ml/100 l	A			
					Mean =	100.0	100.0
9	Roundup Ultra Max	950	ml/ha	A	109	10.0	100.0
	Nail 600	10	ml/ha	A			
	Hasten	500	ml/100 l	A			
					Mean =	10.0	100.0
10	Roundup Ultra Max	950	ml/ha	A	110	.	.
	Hammer 400	15	ml/ha	A			
	Hasten	500	ml/100 l	A			
					Mean =	.	.
11	Goal Tender	37.5	ml/ha	A	111	.	.
	Roundup Ultra Max	950	ml/ha	A			
					Mean =	.	.
12	Roundup Ultra Max	950	ml/ha	A	112	10.0	.
	Starane Advance	450	ml/ha	A			
	Uptake	500	ml/100 l	A			
					Mean =	10.0	.

Rating Date	Crop Name	Pest Name	Rating Type	Rating Unit	Trt-Eval Interval	Sep-4-2015 Fenceline Thistle Weed Control %	Sep-28-2015 Fenceline Thistle Weed Control %	Oct-13-2015 Fenceline Thistle Weed Control %	Sep-4-2015 Fenceline Marsh-mallow Weed Control %	Sep-28-2015 Fenceline Marsh-mallow Weed Control %	Oct-13-2015 Fenceline Marsh-mallow Weed Control %
						8 DA-A	32 DA-A	47 DA-A	8 DA-A	32 DA-A	47 DA-A
13	F6246	300	ml/ha	A	113	100.0	100.0	100.0	100.0	100.0	100.0
	Roundup Ultra Max	950	ml/ha	A							
					Mean =	100.0	100.0	100.0	100.0	100.0	100.0
14	F6246	600	ml/ha	A	114	.	.	.	.	.	.
	Roundup Ultra Max	950	ml/ha	A							
					Mean =	.	.	.	.	.	.
15	Paradigm	50	g/ha	A	115	.	.	.	.	.	.
	Roundup Ultra Max	950	ml/ha	A							
					Mean =	.	.	.	.	.	.
16	Hot Shot	1000	ml/ha	A	116	.	.	.	.	.	.
	Roundup Ultra Max	950	ml/ha	A							
					Mean =	.	.	.	.	.	.
17	Garlon 600	327	ml/ha	A	117	.	.	.	.	.	.
	Roundup Ultra Max	950	ml/ha	A							
					Mean =	.	.	.	.	.	.
18	SpraySeed	3200	ml/ha	A	118	.	.	.	100.0	100.0	100.0
	Uragan	3500	g/ha	A							
	BS 1000	100	ml/100 l	A							
					Mean =	.	.	.	100.0	100.0	100.0
19	Sharpen	26	g/ha	A	119	.	.	.	.	.	.
	Arsenal Express	5000	ml/ha	A							
	Hasten	500	ml/100 l	A							
					Mean =	.	.	.	.	.	.
20	Alliance	6000	ml/ha	A	120	100.0	100.0	100.0	95.0	100.0	100.0
					Mean =	100.0	100.0	100.0	95.0	100.0	100.0
21	Terrain FG	700	g/ha	A	121	100.0	100.0	100.0	.	100.0	100.0
	Gramoxone 360	2000	ml/ha	A							
					Mean =	100.0	100.0	100.0	.	100.0	100.0
22	Roundup Ultra Max	950	ml/ha	A	122	100.0	100.0	100.0	100.0	100.0	100.0
	F6365	370	ml/ha	A							
					Mean =	100.0	100.0	100.0	100.0	100.0	100.0
23	Roundup Ultra Max	950	ml/ha	A	123	100.0	100.0	100.0	.	.	.
	F6365	750	ml/ha	A							
					Mean =	100.0	100.0	100.0	.	.	.

ELDERS BRASSICA WEED CONTROL TRIAL



INTRODUCTION

Demonstration was conducted near Mallala 42 km north of Adelaide SA in 2015 to evaluate existing commercial available chemistry for crop safety in conventional and alternative break crops for winter cropping.

GENERAL CONCLUSION

Weather

The trial was sown into good moisture after early rain. Below average rainfall was recorded at the site due to a dry finish.

Weed control and Phytotoxicity

Strips of chickpeas cv. Monarch, faba beans cv. Fiesta, lentils cv. Hurricane, vetch cv. Timok and Morava, monola cv. NL852, canola cv. Bonito TT, buckwheat, quinoa, linseed and coriander were sown on the 4th June. Treatments were applied perpendicular to the direction of sowing in two timings, one applied and incorporated by sowing, and the other applied post emergence at 49 days after planting (DAP). A crop damage assessment was conducted 62 days after planting

The chickpeas, buckwheat and quinoa did not emerge, and therefore assessments could not be conducted on these crop types.

Avadex at 8000 mL/ha applied at timing A showed low levels of damage in the lentils, canola and faba beans.

180 g/ha of Terrain caused no phytotoxic effects in the linseed or coriander.

The combinations of Ecopar and Spinnaker, Ecopar with Brodal and Options, Boxer Gold with Clethodim and Hasten, and Ecopar with Simazine and Broadstrike all caused significant damage to all crop types able to be evaluated. The combination of Simazine and Atrazine caused no damage to the monola and canola.

SOWING DETAILS

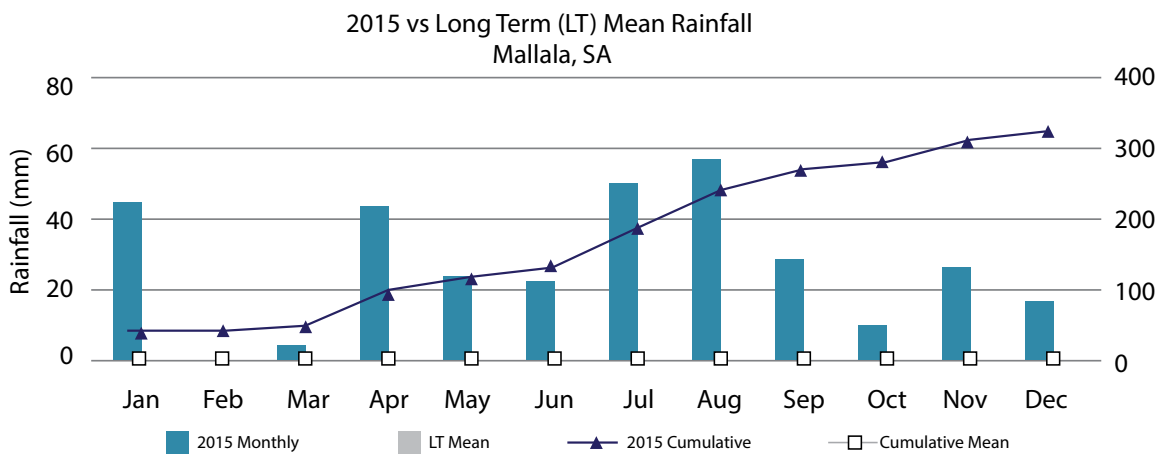
Crop Name	Chickpeas/Faba Beans/Lentils/Vetch/ Vetch/Monola/Canola/Buckwheat/Quinoa//Linseed Coriander
Variety	Monarch/Fiesta/Hurricane/Timok/ Morava/NL852/Bonito TT/NA/NA/NA/NA
Planting Date	04/06/2015
Planting Method	Knife Point Press Wheels
Planting Equipment	TPS012
Planting Rate (kg/ha)	60/100/50/50/50/3.5/3.5/45/10/15/40
Depth, Unit (cm)	1cm: Coriander, Linseed, Buckwheat, Canola, Monola
Depth, Unit (cm)	5-6cm: Faba Beans, Chickpeas, Vetch x 2, Lentils
Row Spacing, Unit (cm)	25
No. Rows	5
Soil Moisture	Moist
Stubble Cover	30
Paddock History, 2014	Canola
Paddock History, 2013	Lentils

Trial Maintenance				
Fertiliser				
Date	Product Name	Description	Rate	Unit
04/06/2015	Croplift19 (Legumes Only)	Below Seed	125.0	kg/ha
	Croplift19	Below Seed	150.0	kg/ha

Maintenance				
Date	Product Name	Description	Rate	Unit
03/06/2015	Roundup UltraMax	Knockdown	3.0	L/ha
23/07/2015	Le-Mat	GS See Note	100.0	mL/ha
29/10/2015	Reglone	Trial destruction	3.0	L/ha
	Gramoxone	Trial destruction	3.0	L/ha
	BS1000	Trial destruction	0.1	%v/v

RAINFALL DATA

GSR (1st May – 30th September 2015) – 181.2 mm
 Annual Rainfall (January – December 2015) - 324mm



(Source: Roseworthy, SA - Bureau of Meteorology)

RESULTS

RAW DATA TABLE 1: CROP DAMAGE AT 62 DA-P

Rating Date	Aug-5-2015	Aug-5-2015	Aug-5-2015	Aug-5-2015	Aug-5-2015	Aug-5-2015	Aug-5-2015	Aug-5-2015	Aug-5-2015	Aug-5-2015	Aug-5-2015	Aug-5-2015
Crop Name	Chickpea	Faba bean	Hurricane	Lentil	Vetch	Vetch	Canola	Canola	Buckwheat	Quinoa	Linseed	Coriander
Crop Variety	Monarch	Fiesta	Hurricane	Hurricane	Timok	Morava	Monola	NL852	Bonito TT			
Rating Type	Damage	Damage	Damage	Damage	Damage	Damage	Damage	Damage	Damage	Damage	Damage	Damage
Rating Unit	10-0	10-0	10-0	10-0	10-0	10-0	10-0	10-0	10-0	10-0	10-0	10-0
Crop Stage Majority	00	26	28	27	27	27	16	16	16	24	14	16
Days After First/Last Applic.	62 DP-1	62 DP-1	62 DP-1	62 DP-1	62 DP-1	62 DP-1	62 DP-1	62 DP-1	62 DP-1	62 DP-1	62 DP-1	62 DP-1
Plant-Eval Interval	62 DP-1	62 DP-1	62 DP-1	62 DP-1	62 DP-1	62 DP-1	62 DP-1	62 DP-1	62 DP-1	62 DP-1	62 DP-1	62 DP-1
Trt No.	101											
Treatment Name	Untreated											
1	Mean =	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
2	Avadex Xtend	2000	ml/ha	102	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
3	Avadex Xtend	4000	ml/ha	103	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
4	Avadex Xtend	8000	ml/ha	104	10.0	10.0	8.0	10.0	10.0	10.0	10.0	10.0
5	Terrain	180	g/ha	105	8.0	8.0	10.0	10.0	10.0	8.0	8.0	10.0
6	Ecopar	800	ml/ha	106	10.0	10.0	9.0	9.0	10.0	9.0	9.0	10.0
7	Ecopar	800	ml/ha	107	9.0	9.0	10.0	10.0	10.0	10.0	5.0	1.0
	Spinmaker	100	g/ha		4.0	3.0	1.0	1.0	1.0	1.0	0.0	0.0
8	Ecopar	800	ml/ha	108	4.0	3.0	1.0	1.0	1.0	1.0	0.0	0.0
	Broadstrike	25	g/ha		5.0	7.0	4.0	3.0	5.0	5.0	7.0	1.0
9	Ecopar	800	ml/ha	109	5.0	7.0	4.0	3.0	5.0	5.0	7.0	1.0
	Brodal Options	100	ml/ha		5.0	4.0	5.0	5.0	4.0	4.0	4.0	1.0
10	Boxer Gold	2500	ml/ha	110	5.0	4.0	5.0	5.0	5.0	5.0	4.0	1.0
	Clethodim	500	ml/ha		5.0	4.0	6.0	3.0	5.0	5.0	5.0	1.0
	Hasten	1	% v/v									
11	Simazine	1000	g/ha	111	5.0	4.0	6.0	3.0	5.0	5.0	5.0	1.0
	Atrazine	1000	g/ha		4.0	6.0	3.0	2.0	10.0	10.0	5.0	2.0
12	Ecopar	800	ml/ha	112	4.0	6.0	3.0	2.0	10.0	10.0	5.0	2.0
	Simazine	150	g/ha		5.0	4.0	4.0	2.0	2.0	2.0	2.0	1.0
	Broadstrike	25	g/ha		5.0	4.0	4.0	2.0	2.0	2.0	2.0	1.0

DP-1 = Days After Planting



Live it.