CENTRAL QUEENSLAND GROWER SOLUTIONS PROJECT
SPRING-SUMMER 2014/15 TRIALS PROGRAM

(A) WEED MANAGEMENT PROGRAM

Priorities being addressed:

Jan-Jun 2013

- Development/Extension - Best bet options and IWM for management of grass weeds in CQ
- Can the success rate of glyphosate fb Paraquat and other double knocking options be enhanced so as to provide greater consistency in control of FTR, SSG and other grasses
- Development/Extension issue - Double knock demonstration trials on the right way to implement the procedure

Jun-Dec 2013

- Best bet options for IWM of grass and broadleaf weeds; milk thistle, fleabane, African turnip are becoming more prominent and require frequent control

Projects:

Project	Title	Page	No. (min.) of trials
1	Broadening the scope and enhancing the overall efficacy of DK tactics for FTR control		4
2	Validating/demonstrating the efficacy of residual and knockdown herbicides for milk (sow) thistle control		2
3	Validating/demonstrating the efficacy of residual and knockdown herbicides for fleabane control		2

Project 1
Aims:
To improve the individual contributions of the first and second knock to overall efficacy of double knocks on early and late tillering FTR through product choice, tank mixing with other herbicides and/or additives, targeting of plant stage and physiological state (stress level) to better suit local field conditions

The intent here is primarily to demonstrate best practice (recommended weed sizes) but also to try and make the DK work better and, where possible, minimize loss of overall efficacy in sub-optimal circumstances, eg, weed size larger than product label recommendation

1 A.
Research questions:

- Are the likely higher registered rates of Shogun and Targa Bolt more effective than the 150 mL rate of Verdict?

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- What is the optimal efficacy window for the second (paraquat) knock when a (glyphosate + Group G), Group A or (glyphosate + Group A) treatment is the first knock?
- Does the addition of a Group G herbicide to glyphosate increase speed of brownout of FTR?
- Does addition of a Group G herbicide to glyphosate increase final efficacy on FTR?

Suggested treatment options:

Trt	Treatment label	Rate/ha	Adjuvants
K1			
1	Control		
2	Roundup CT	2.4 L	Li 700 500ml/100L + AmSul 2kg/100L
3	Roundup CT + Verdict	2.4 L + 150 mL	Li 700 500ml/100L + AmSul 2kg/100L
4	Roundup CT + Verdict	2.4 L + 150 mL	Uptake 500ml/100L
5	Verdict	150 mL	Uptake 500ml/100L
6	Roundup CT + Targa Bolt	2.4 L + 500 mL	Hasten 1L/100L
7	Targa Bolt	500 mL	Hasten 1L/100L
8	Roundup CT + Shogun	2.4 L + 500 mL	Hasten 500mL/100L
9	Shogun	500 mL	Hasten 500mL/100L
10	Roundup CT + Select	2.4 L + 250 mL	Hasten 500L/100L or Uptake 500mL/100L
11	Select	250 mL	Hasten 500L/100L or Uptake 500mL/100L
12	Roundup CT + Sharpen	2.4 L + 34 g	Li 700 500ml/100L + AmSul 2kg/100L
13	RoundUp CT + Goal	2.4 L + 75 mL	Li 700 500ml/100L + AmSul 2kg/100L
K2			
A	Control		
B	Paraquat	2.4 L	

Methodology:

Ideal trial sites will have mixture of various tillering stages
Replicated small plot trials
Second knock at 4, 7 and 14-17 days, applied as cross spray to half the plots
Adjuvants included as per label recommendations (see attached excel file for details)
Data to be collected:

size/stage specific impact assessment (eg., early tillering, mid-late tillering, matures)
counts prior to first application
brownout scores 4 and 7 days and weekly intervals after that;
recovery assessment at appropriate intervals going out to at least 35 DAA

Sites: Min. 3 trials; north, central and south

1 B.
Research Questions:
Making the double knock work on stressed and non-stressed FTR:

- Can the knockdown control efficacy of paraquat on FTR be increased by tank mixing with residual and other herbicides from different chemical groups?
- Will paraquat give better results as a first knock than glyphosate on stressed FTR?

- How effective are glyphosate and paraquat when used (individually) as second knocks on recovering FTR following a first knock of paraquat?
- Does Balance significantly enhance the knockdown efficacy of paraquat when used as a tank mix?

Suggested treatment options:

Trt.	Treatment label	Rate/ha	Adjuvants
K1			
1	Unsprayed Control		*Nil*
2	Roundup CT	2.4 L	Li 700L+AmSul
3	Paraquat	1.6 L	*Nil*
4	Paraquat	2.4 L	*Nil*
5	Paraquat + Balance	1.6 L + 50 g	*Nil*
6	Paraquat + Balance	1.6 L + 100 g	*Nil*
7	Balance	100 g	*Nil*
8	Paraquat + Flame	1.6 L 200 mL	*Nil*
9	Paraquat + Dual Gold	1.6 L + 1 L	*Nil*
10	Paraquat + Atrazine	1.6 L + 2.2 kg	*Nil*
11	Paraquat + Terbyne	1.6 L + 1.4 kg	*Nil*
12	Paraquat + Valor	1.6 L + 30 g	*Nil*
13	Paraquat + Goal	1.6 L + 75 mL	*Nil*
14	Paraquat + Sharpen	1.6 L + 34 g	*Nil*
15	Paraquat + Hammer	1.6 L + 60 mL	*Nil*
16	Paraquat + Amicide Advance	2.4 L + 1.1 L	*Nil*
K2			
A	Unsprayed Control		*Nil*
C	paraquat	2.4 L	*Nil*
D	RoundUp CT	2.4 L	Li 700L+AmSul
E	RoundUp CT + Goal	2.4 L + 75 mL	Li 700L+AmSul

Methodology:

Ideal trial sites will have mixture of various tillering stages; at least one site to target non-stressed FTR and min. two sites to target stressed FTR
Replicated small plot trials
Second knock when recovery is underway, applied as cross spray to half the plots
Adjuvants included as per label recommendations (see attached excel file for details)
Balance @ 50 g has been included in the list mainly to combat inappropriate industry practice, confirm the expectation of variable results and to use data to promote better stewardship of this product
Data to be collected:

size/stage specific impact assessment (eg., early tillering, mid-late tillering, matures)
counts prior to first application
brownout scores 7 days after each application and then at 14-day intervals up to 45-60 DAA

Sites: Min. 3 trials; north, central and south

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Project 2

Aims:

To demonstrate efficacy of best bet residual and knockdown herbicides for control of milk thistle in summer fallows

Suggested treatment options:

Residual herbicide options - Trial A

Trt No.	Treatment	Rate/ha
1	Control	
2	Balance	100 g
3	Balance + Terbyne	100 g + 1 kg
4	Atrazine	2 kg
5	Terbyne	1.4 kg
6	Stomp	3.3 L
7	Ally	7 g
8	FallowBoss Tordon	1 L
9	Dual Gold	2 L
10	Treflan	1.7 L

Knockdown herbicide options - Trial B

Knock 1

Trt No.	Treatment	Rate/ha
1	Untreated control	
2	Glyphosate CT	1600
3	Glyphosate CT	2400
4	Amicide Advance	1100
5	Glyphosate CT + FallowBoss Tordon	1600 + 1000
6	Glyphosate CT + Amicide Advance	1600 + 1100
7	Glyphosate CT + Sharpen	1600 + 26
8	Glyphosate CT + Amicide Advance + Sharpen	1600 + 1100 + 15
9	Glyphosate CT + Starane Advanced	1600 + 600
10	Glyphosate CT + Grazon Extra	1600 + 400
11	Glyphosate CT + Tordon 75D	1600 + 1000
12	Nuquat + Balance	2400 + 100
13	Nuquat	2400
14	Glyphosate CT + Ally	????

Knock 2

Trt No.	Treatment	Rate/ha
A	Paraquat	2400

Methodology:

Ideal sites will have mixture of weed sizes; need variable sizes to demonstrate size-related efficacy

Replicated small plot trials

Soil type, moisture profile and rainfall before and after treatment applications

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Half of all plots in Trial A will be subjected to incorporation tillage whereas the other half will be left un-incorporated. These plots will first be subjected to a shallow tillage prior to application followed by post-application harrowing to incorporate products.
Data to be collected:

- plant counts/m^2 prior to first application and post application
- stubble load
- ratings to at least 6-8 weeks after K2; additional ratings dependent on recovery/regrowth

Sites: 1-2 trials, depending on site availability

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Project 3
Aims:
To demonstrate efficacy of best bet residual and knockdown herbicides for control of fleabane in summer fallows

Suggested treatment options:
Residual herbicide options - Trial A

Residual herbicide options - Trial A

Trt No.	Treatment	Rate/ha
1	Control	
2	Balance	100 g
3	Balance + Terbyne	100 g + 1 kg
4	Atrazine	2 kg
5	Terbyne	1.4 kg
6	Stomp	3.3 L
7	Ally	7 g
8	FallowBoss Tordon	1 L
9	Dual Gold	2 L
10	Treflan	1.7 L

Knockdown herbicide options - Trial B
Knock 1

Trt No.	Treatment	Rate/ha
1	Control	
2	Roundup CT + Tordon 75D	1.6 L + 1.0 L
3	Roundup CT + Starane Advance	1.6 L + 900 mL
4	Roundup CT + Sharpen	1.6 L + 34 g
5	Roundup CT + Surpass	1.6 L + 2.6 L
6	Roundup CT + Lontrel Advanced	1.6 L + 2 L
7	Roundup CT + Amicide Advance	1.6 L + 1.1 L
8	Roundup CT + Fallowboss	1.6 L + 1 L
9	Nuquat + Velocity	2.4 L + 670 mL
10	Fallowboss	1 L
11	Nuquat + Amicide Advance	2.4 L + 1.1 L
12	Amicide Advance + Sharpen	1.1 L + 34 g
13	Amicide Advance	1.1 L
14	Nuquat + Atrazine	????

Knock 2

Trt No.	Treatment	Rate/ha
A	Control	
B	Alliance	2.8 L
C	paraquat	2.4 L
D	Basta	3.75 L

K2 at 7-10 days after K1

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Methodology:
Ideal sites will have mixture of weed sizes; need variable sizes to demonstrate size-related efficacy
Replicated small plot trials
Soil type, moisture profile and rainfall before and after treatment applications
Half of all plots in Trial A will be subjected to incorporation tillage whereas the other half will be left un-incorporated. These plots will first be subjected to a shallow tillage prior to application followed by post-application harrowing to incorporate products.
Data to be collected:

- plant counts/m^2 prior to first application and post application
- stubble load
- ratings to at least 6-8 weeks after K2; additional ratings dependent on recovery/regrowth

Sites: 1-2 trials, depending on site availability

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