



## SURFACE IRRIGATED COTTON (Roundup Ready Flex® Bollgard II®)

Southern Zone - Murrumbidgee & Lachlan Rivers

Summer 2009/10

### 1. GROSS MARGIN BUDGET:

#### INCOME:

Lint -	9.00	bales/Ha at	\$400.00	/bale (at gin).....
Seed -	2.27	tonnes/Ha at	\$275.00	/tonne (at gin).....

Standard Budget \$/Ha	Your Budget \$/Ha
\$3,600.00	
\$624.25	
\$4,224.25	

#### A. TOTAL INCOME \$/Ha:

<b>\$4,224.25</b>	
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#### VARIABLE COSTS:

see opposite page for details

Cultivation.....	\$179.06
Sowing.....	\$158.40
Crop insurance.....	\$55.00
Fertilizer & application.....	\$343.00
Herbicide/Growth regulator & application.....	\$328.21
Insecticide & application.....	\$138.57
Irrigation.....	\$278.00
Contract picking.....	\$298.71
Cartage to gin.....	\$70.94
Ginning charges.....	\$495.00
ACF and Research Levy.....	\$40.50
Bollgard II and Roundup Ready Flex ® Licence Fees.....	\$390.00
Other.....	\$139.56

Your Budget	
BollgardII@ 1 ha	BollgardII@ 1 ha
\$179.06	
\$158.40	
\$55.00	
\$343.00	
\$328.21	
\$138.57	
\$278.00	
\$298.71	
\$70.94	
\$495.00	
\$40.50	
\$390.00	
\$139.56	
<b>\$2,914.95</b>	

#### B. TOTAL VARIABLE COSTS \$/Ha:

<b>\$2,914.95</b>	
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#### C. GROSS MARGIN (A-B) \$/Ha:

<b>\$1,309.30</b>	
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#### D. GROSS MARGIN (A-B) \$/ML:

<b>\$127.12</b>	
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### SENSITIVITY TABLES

#### 2. EFFECT OF YIELD AND PRICE ON GROSS MARGIN PER HECTARE:

Lint Yield bales/Ha	Seed Yield t/ha	\$340 /bale	\$370 /bale	<b>\$400 /bale</b>	\$430 /bale	\$460 /bale	Lint price Seed price
		\$245/t	\$260/t	<b>\$275/t</b>	\$290/t	\$305/t	
6.00	2.16	-\$332	-\$120	\$93	\$305	\$517	<b>Gross Margin (\$/Ha)</b>
7.00	2.52	\$91	\$339	\$587	\$835	\$1,083	
8.00	2.88	\$515	\$798	\$1,082	\$1,365	\$1,648	
<b>9.00</b>	<b>2.27</b>	\$701	\$1,005	<b>\$1,309</b>	\$1,613	\$1,917	
10.00	3.60	\$1,363	\$1,717	\$2,071	\$2,425	\$2,779	
11.00	3.96	\$1,786	\$2,176	\$2,565	\$2,954	\$3,344	
12.00	4.32	\$2,210	\$2,635	\$3,060	\$3,484	\$3,909	

#### 3. EFFECT OF YIELD AND PRICE ON GROSS MARGIN PER MEGALITRE:

Lint Yield bales/ha	Seed Yield t/ha	\$340 /bale	\$370 /bale	<b>\$400 /bale</b>	\$430 /bale	\$460 /bale	Lint price Seed price
		\$245 /t	\$260 /t	<b>\$275 /t</b>	\$290 /t	\$305 /t	
6.00	2.16	-\$32	-\$12	\$9	\$30	\$50	<b>Gross Margin (\$/ML)</b>
7.00	2.52	\$9	\$33	\$57	\$81	\$105	
8.00	2.88	\$50	\$78	\$105	\$132	\$160	
<b>9.00</b>	<b>2.27</b>	\$68	\$98	<b>\$127</b>	\$157	\$186	
10.00	3.60	\$132	\$167	\$201	\$235	\$270	
11.00	3.96	\$173	\$211	\$249	\$287	\$325	
12.00	4.32	\$215	\$256	\$297	\$338	\$380	

# SURFACE IRRIGATED COTTON (Roundup Ready Flex® Bollgard II®)

Southern Zone - Murrumbidgee & Lachlan Rivers

Summer 2009/10

CALENDAR OF OPERATIONS:			Machinery			Inputs			Total	
Operation	Month	Contract	Cost	Total	Rate/Ha	Band Width	Cost	Total	Total Cost \$/Ha	
			\$/hour	\$/Ha			(\$)	\$/Ha		
Middlebusting	Mar	Contract		55.00		100%			\$55.00	
Fertiliser - anhydrous ammonia	Mar	with above			220 Kg	100%	0.87	191.40	\$191.40	
Cultivation	Jul	Contract		35.00					\$35.00	
Fertiliser - MAP plus potassium blend	Jul	with above			120 Kg	100%	0.87	104.40	\$104.40	
Rolling cultivation	Aug	Contract		18.00		100%			\$18.00	
Herbicide - ground spray, glyphosate CT	Sep	Contract		10.00	1.2 L	100%	5.21	6.25	\$16.25	
Herbicide - 2,4-D IPA 300g/L	Sept	with above			0.6 L	100%	4.18	2.51	\$2.51	
Crop insurance	Oct	Premium depends on various factors							55.00	\$55.00
Planting - precision planter	Oct	Contract		40.00		100%			\$40.00	
Planting - seed	Oct	with above			16 kg	100%	7.40	118.40	\$118.40	
Insecticide - aldicarb (eg. Temik®)	Oct	with above			3 kg	100%	13.65	40.95	\$40.95	
Herbicide - fluometuron (eg. Cotoran®)	Oct	with above			3.0 L	50%	17.61	26.42	\$26.42	
Herbicide - pendimethalin(eg. Stomp®)	Oct	with above			4.0 L	50%	11.10	22.20	\$22.20	
Irrigate (waterup)	Oct				2.0 MI	100%	25.89	51.78	\$51.78	
Herbicide - Roundup Ready®	Nov	0.03	78.31	2.13	1.20 Kg	100%	15.64	18.77	\$20.90	
Irrigate	Nov				1.3 MI	100%	25.89	33.66	\$33.66	
Herbicide - Roundup Ready®	Dec	0.03	78.31	2.13	0.80 Kg	100%	15.64	12.51	\$14.64	
Insecticide - fipronil (Regent®)	Dec	0.09	81.73	7.57	0.13 L	50%	371.33	23.21	\$30.78	
Cultivation - interrow	Dec	0.15	87.90	13.56		100%			\$13.56	
Herbicide - fluometuron (eg. Cotoran®)	Dec	with above			3.0 L	80%	17.61	42.26	\$42.26	
Irrigate	Dec				1.3 MI	100%	25.89	33.66	\$33.66	
Fertiliser (urea, water run)	Dec	with above			80 kg	100%	0.59	47.20	\$47.20	
Chipping casual labour	Jan	contract		30.00		100%			\$30.00	
Irrigate	Jan				1.2 MI	100%	25.89	31.07	\$31.07	
Insecticide - abamectin	Jan	contract		14.50	0.3 L	100%	81.40	24.42	\$38.92	
Decis Options	Jan	with above			0.5 L	100%	22.47	11.24	\$11.24	
Growth Regulator - mepiquat (eg. Pix®)	Jan	with above			1.5 L	100%	5.25	7.88	\$7.88	
Irrigate	Jan				1.2 MI	100%	25.89	31.07	\$31.07	
Irrigate	Feb				1.3 MI	100%	25.89	33.66	\$33.66	
Insecticide - Dimethoate	Feb	contract		14.50	0.5 L	100%	4.37	2.19	\$16.69	
Irrigate	Feb				1.0 MI	100%	25.89	25.89	\$25.89	
Irrigation equip. repairs and maintenance				\$1.10/MI					\$11.33	
Irrigate	Mar				1.0 MI	100%	25.89	25.89	\$25.89	
Defoliant - thidiazuron (eg. Dropp Ultra®)	Mar	contract		14.50	0.25 L	100%	189.00	47.25	\$61.75	
Defoliant- ethephon (eg. Prep®)	Mar	with above			0.5 L	100%	8.93	4.47	\$4.47	
Defoliant - crop oil	Mar	with above			2.0 L	100%	6.18	12.36	\$12.36	
Defoliant - thidiazuron (eg. Dropp Ultra®)	Mar	contract		14.50	0.25 L	100%	189.00	47.25	\$61.75	
Defoliant- ethephon (eg. Prep®)	Mar	with above			0.5 L	100%	8.93	4.47	\$4.47	
Defoliant - crop oil	Mar	with above			2.0 L	100%	6.18	12.36	\$12.36	
Bollgard II® Licence Fee**	April								\$315.00	
Roundup Ready Flex® Licence Fee	April								\$75.00	
Refuge crop - pigeon peas @ 5%									\$22.56	
Contract picking & module building	April	contract		\$350/hr	@	0.78 hours/ha			\$273.00	
Contract Module lifting	May	contract		\$ 60.00	/module @	21 bales per module			\$25.71	
Contract cartage to gin	May	contract		\$3.35	/km @	40 km from gin			\$70.94	
Ginning charges	May	contract		\$ 55.00	/bale @	9 bales/ha			\$495.00	
Mulcher with root cutters	May	contract		45.50	/ha	100%			\$45.50	
Consultant	May	contract		\$ 75.00	/ha				\$75.00	
Sterilising channels	May	contract		\$ 30.00					\$30.00	
Contract delving and pushing	May	contract		\$ 12.00					\$12.00	
ACF levy and Research levy	May	contract		\$ 4.50	/bale				\$40.50	
<b>TOTAL COSTS:</b>									<b>\$2,914.95</b>	

This budget is ONLY A GUIDE and should be altered for movements in crop and input prices, changes in seasonal conditions and the farm characteristics.

# IRRIGATED COTTON (Roundup Ready Flex® Bollgard II®)

## NOTES:

### MANAGEMENT:

## The selection of insecticides is highly dependent on the insect spectrum, growers should be aware this is a generic program and selection of products should be made with IPM strategies in mind. Refer to the "Integrated Pest Management Guidelines for Australian Cotton"

Each grower is required to grow a refuge crop as part of preventative resistance management. Since the refuge crop is an integrated part of growing Bollgard II® Roundup Ready Flex® cotton, refuge crop costs and income should be included as part of the gross margin budget.

The refuge area required in conjunction with the Roundup Ready Flex® Bollgard II® cotton is a minimum of ;

#### The following table summarizes irrigated refuge choices

Irrigated Refuge Options	Irrigated Roundup Ready® Bollgard II®
Sprayed conventional cotton (no Bt Sprays)	100%
Unsprayed conventional cotton	10%
Pigeon peas, unsprayed	5%
Sorghum, unsprayed	15% approval required from Monsanto
Corn, unsprayed	20% approval required from Monsanto

Unsprayed' means unsprayed with insecticides that affect any life stage of Helicoverpa spp..

Refuge crops should be:-

Planted and managed so the refuge is attractive to heliothis during the growing period of Roundup Ready Flex® Bollgard II®,

Planted within the farm unit growing Roundup Ready Flex® Bollgard II®, preferably on one side or adjacent to the Roundup Ready Flex® Bollgard II® crop, with a separation of no more than 2km from the Roundup Ready Flex® Bollgard II® crop

**For further details see the I&I NSW "Cotton Pest Management Guide 2009-2010".**

### HERBICIDES:

Fallow herbicides have been substituted for cultivation during the winter to avoid compaction. To reduce the likelihood of herbicide resistance, rotate herbicide groups and weed management techniques.

**Use of a particular brand name does NOT imply recommendation of that brand by I&I NSW.**

**Always read chemical labels and follow directions, as it is your legal responsibility to do so.**

MANAGEMENT:- this budget is typical of "back to back" cotton assuming the cotton crop is in a 2 year cotton - 1 year wheat rotation.

DEFOLIANT: Dropp Ultra has been used as the primary defoliant in this example. Good conditions are required to get the best performance. The kind of defoliant used depends on the moisture status of the plant.

### FERTILIZER REQUIREMENTS:

A petiole test may be carried out up to 4 times during the season. A nitrogen petiole test is approximately \$22 ex. GST and a full nutrient test of all elements costs around \$49 ex. GST.

### LABOUR REQUIREMENTS:

- Labour is not costed in this budget. If labour costs \$18.51 /hr, total labour cost would be \$8.72, reducing the gross margin to \$1,301/ha. This still does not include labour required to irrigate.

### MACHINERY ASSUMPTIONS:

Tractor: 170 KW PTO (230 HP) AND 200 KW ENGINE (265 HP)  
Machinery costs refer to contract rates, as most farmers use contractors for specialised operations

### IRRIGATION:

Water costs:

Lachlan River estimated water costs are used, based on 2009-10 prices.

Water requirements

10.30 ML is required to grow a successful high yielding crop. This assumes no useful rainfall during the growing season. This figure varies widely according to in crop rainfall, evaporation and soil type. Water needed from irrigation typically ranges between 8 - 13 ML / ha. Using bore water will increase pumping costs, repair and maintenance.



## SURFACE IRRIGATED PIGEON PEAS (refugia for Bollgard II® cotton)

Southern Zone - Murrumbidgee & Lachlan Rivers

Summer 2008-2009

CALENDAR OF OPERATIONS:		Machinery			Inputs				Total Cost	
Operation	Month	hrs /ha	Cost	Total	Rate/ha	Band Width	Cost	Total	\$/ha	
			\$/hour	\$/ha			\$	\$/ha		
Stalk pull and mulch	May	contract								<b>75.00</b>
Middlebusting	Jul	0.23	69.33	15.95		100%				<b>15.95</b>
Herbicide - glyphosate (450 g/L)	Jul	0.03	64.58	1.94	1.0 L	100%	5.21	5.21		<b>7.15</b>
Wetter - non-ionic surfactant	Jul	with above			0.2 L	100%	4.09	0.82		<b>0.82</b>
Herbicide - prometryn (500 g/L)	Aug	with above			4.50 L	85%	16.31	62.39		<b>62.39</b>
Herbicide - trifluralin (480 g/L)	Aug	0.03	64.58	1.94	2.8 L	100%	8.16	22.85		<b>24.79</b>
Plus incorporation	Aug	0.15	70.33	10.55		100%				<b>10.55</b>
Pre irrigate	Sep				1.4 MI	100%	25.89	36.25		<b>36.25</b>
Herbicide - prometryn (500 g/L)	Sep	0.03	64.58	1.94	4.50 L	85%	16.31	62.39		<b>64.32</b>
Planting - precision planter	Oct	0.14	72.82	10.19		100%				<b>10.19</b>
Planting - inoculated (group J) seed	Oct	with above			40 kg	100%	1.70	68.00		<b>68.00</b>
Irrigate	Dec				1.0 MI	100%	25.89	25.89		<b>25.89</b>
Irrigate	Jan				1.0 MI	100%	25.89	25.89		<b>25.89</b>
Slashing	May									<b>12.00</b>
Contract delving and pushing	May	contract								<b>12.00</b>
<b>TOTAL COSTS:</b>									<b>451</b>	
<b>TOTAL COSTS for 5% hectare:</b>									<b>22.56</b>	

**NOTES:** For more detailed information, see the I&I NSW "Cotton Pest Management Guide 2009-2010".

Always read chemical labels and follow directions, as it is your legal responsibility to do so.

Use of a particular brand name does NOT imply recommendation of that brand by I&I NSW.

**SOWING:** Irrigated pigeon peas are one refuge crop option for irrigated cotton. They need to be sown when the soil temperature is 17°C and rising, and within 2 weeks of cotton planting. Group J inoculum should be used.

**WEEDS:** When a refuge needs cultivation, the Bollgard II® crop should be cultivated at the same time.

**IRRIGATION:** Pigeon pea generally needs less water than cotton, and may require only a pre-irrigation and irrigation every second time the cotton is irrigated.

**CROP REMOVAL:** Pigeon peas should only be harvested or slashed after the Bollgard II® crop has been removed.

Please refer to the Monsanto Bollgard II® Resistance Management Plan for more information on refuge crops and minimum requirements.

**LABOUR REQUIREMENTS:** - labour is not costed in this budget. If labour costs \$17.00 /hr, total labour cost would be \$12.96. This still does not include labour required to irrigate.

**MACHINERY ASSUMPTIONS:** Tractor: 170 KW PTO (230 HP) and 200 KW engine (265 HP)

Machinery costs refer to variable costs of: fuel, oil, filters, tyres, batteries and repairs.

You may need to add overhead costs as well, please refer to the Tractor and Implement Costs Guide

**IRRIGATION:** Estimated water usage charge of \$20.43 per ML assumed, your charges may be different.

Water pumping costs: calculated using a flood/furrow system with diesel powered pumping from surface supply.

Water use: 3.4ML/Ha