

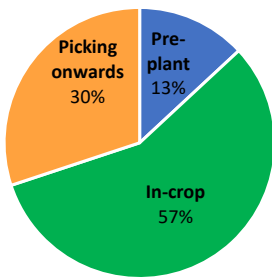
### Gross Margin Budget: Overhead Irrigated Cotton

Bollgard3®, Roundup Ready Flex®

INCOME:			Example Budget	Your Budget
			\$/ha	\$/ha
12.00	bales/ha* @	Cotton lint	\$594 /bale (at gin)	\$7,127
		Cotton seed	\$93 /bale (at gin)	\$1,111
			\$686 /bale (at gin)	
		<b>A. TOTAL GROSS INCOME \$/ha:</b>	<b>\$8,238</b>	

#### VARIABLE COSTS:

See pg 2 for details



Fallow management	\$58
Nutrition	\$756
Planting	\$132
Irrigation (5.8 ML applied)	\$871
Insurance	\$304
Crop protection, application & licence fee	\$878
Defoliation	\$156
Picking, cartage & ginning	\$1,317
Farming: Post-crop	\$40
<b>B. TOTAL VARIABLE COSTS \$/ha:</b>	<b>\$4,512</b>

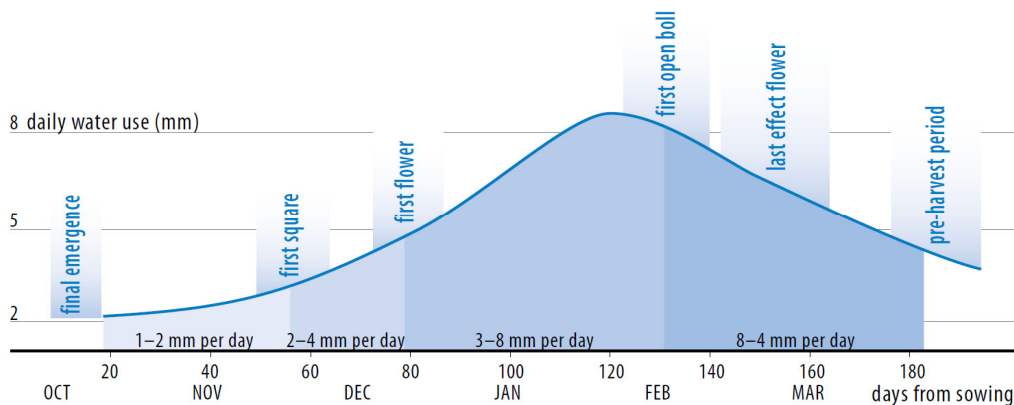
<b>C. GROSS MARGIN (A-B) \$/ha:</b>	<b>\$3,726</b>
<b>D. GROSS MARGIN (A-B/ML applied) \$/ML:</b>	<b>\$487</b>

Breakeven Yield (bales/ha) based on lint & seed prices above:	5.34 bales/ha
Breakeven Price (\$/bale inc. seed and discounts) based on 12 bales/ha:	\$365 /bale
<i>Note that breakeven yield &amp; price is for variable costs only, overhead costs and labour are NOT considered</i>	

#### SENSITIVITY TABLE

227kg lint bales/ha	\$3,726	PRICE (\$/bale incl. of seed & discounts)				
		586	636	686	736	786
8.5		952	1361	1771	2180	2589
10.0		1645	2127	2608	3090	3572
11.0		2108	2637	3167	3697	4226
12.0		2570	3148	<b>3726</b>	4304	4881
13.0		3032	3658	4284	4910	5536
14.0		3494	4169	4843	5517	6191
15.5		4188	4934	5681	6427	7173

#### Nominal seasonal Daily Water Use (mm/day) for cotton production (WaterPak 2012)



This budget is designed to give an indication of operations and costs required to grow a cotton crop. Prices are estimates only. A grower should alter this budget to take account of individual field management plans, movements in crop and input prices and changes in seasonal conditions. In all instances, operations should be tailored to the requirements of individual paddocks. For a complete guide to cotton management, see the *Australian Cotton Production Manual*.



Variable Costs by Operation	Machinery		Inputs			TOTAL
	Total \$/ha	Rate /ha	Unit	Cost \$/unit	Cost \$/ha	Cost \$/ha
<b>Fallow management (long fallow)</b>						
Fallow spray: Glyphosate (450g/L)	Self Propelled	1.37	2.00 L	5.17	10.34	12
Fallow spray: Flumioxazin (500g/L)	with above		0.03 kg	150.54	4.52	5
Fallow spray: Paraquat (360g/L)	Self Propelled	1.37	2.00 L	5.98	11.96	13
Fallow spray: Flumioxazin (500g/L)	with above		0.03 kg	150.54	4.52	5
Fallow spray: Glyphosate (450g/L)	Self Propelled	1.37	2.00 L	5.17	10.34	12
Fallow spray: Isoxaflutole (750g/kg)	with above		0.10 kg	124.56	12.46	12
<b>Nutrition</b>						
Fertiliser: MAP (15kg N, 33kg P, 15kg S) - spread pre plant	Spreader	8.41	150 kg	1.06	159.00	167
Fertiliser: Potassium (50kg K) - spread pre plant	Spreader	8.41	100 kg	0.96	96.10	105
Fertiliser: Urea (140kg N) - drilled pre plant	295 eng/HP	15.10	304 kg	0.81	244.72	260
Fertiliser: Urea (120kg N) - side dress early-mid season	295 eng/HP	15.10	260 kg	0.81	209.30	224
<b>Planting</b>						
Planting: Precision planter	295 eng/HP	12.69				13
Planting: Seed: Roundup Ready Flex® Bollgard3®	with above		13 kg	9.19	119.44	119
<b>Irrigation management</b>						
Irrigation: Budgeted water #			7.5 ML	114.72	862.62	863
Other: Soil moisture monitoring	Contractor	8.75				9
<b>Crop protection, application &amp; licence fee</b>						
Insecticide: Sulfoxaflor (500g/kg), target: mirids	Self Propelled	1.37	0.14 kg	302.90	42.41	44
Insecticide: Fipronil (200g/L), target: mirids	Self Propelled	1.37	0.07 L	71.36	4.99	6
Insecticide: Spirotetramat( 240g/L), target: SLW	Aerial	18.00	0.40 L	190.89	76.36	94
Insecticide: Acetamiprid (218g/L ), Emamectin (32.5g/L) target for above product: SLW, aphids, shield bugs	Aerial	18.00	0.30 L	88.52	26.55	45
Herbicide: Pendimethalin (455g/L)	Self Propelled	1.37	2.25 kg	12.82	28.85	30
Herbicide: Terbutylazine (875g/L)	with above		1.20 L	14.75	17.70	18
Herbicide: Roundup Ready® Plantshield® (690g/kg Glyphosate)	Self Propelled	1.37	1.20 kg	10.50	12.60	14
Herbicide: S-metolachlor OTT (960g/L)	with above		1.00 L	14.26	14.26	14
Herbicide: Diuron (900g/L): Shielded sprayer	295 eng/HP	8.77	1.20 kg	15.50	18.60	27
Herbicide: Roundup Ready® Plantshield® (690g/kg Glyphosate)	Aerial Spraying	18.00	1.50 kg	10.50	15.75	34
Farming: Cultivation: Inter-row	295 eng/HP	11.94				12
Growth regulant Mepiquat (380g/L), growth regulator	Aerial	18.00	0.06 L	23.80	1.43	19
Growth regulant Mepiquat (380g/L), growth regulator / cutout	Aerial	18.00	0.20 L	23.80	4.76	23
Other: Chipping or Spot Spray		10.00				10
Licence: Bollgard 3® RRF Licence Fee: Price Discount						390
Other: Consultant	Contractor	75.00				75
Refuge: Refuge crop: Pigeon peas 2.5%, see page 3			0.1 ML			22
<b>Defoliation</b>						
Defoliation: Thidiazuron + Diuron (120g + 60g/L)	Aerial Spraying	18.00	0.15 L	173.00	25.95	44
Defoliation: Ethephon (900g/L)	with above		0.75 L	9.94	7.45	7
Defoliation: Crop oil	with above		1.00 L	7.02	7.02	7
Defoliation: Thidiazuron + Diuron (120g + 60g/L)	Aerial Spraying	18.00	0.15 L	173.00	25.95	44
Defoliation: Ethephon (900g/L)	with above		0.75 L	9.94	7.45	7
Defoliation: Crop oil	with above		1.00 L	7.02	7.02	7
Defoliation: ETee® (25g/L + 756g/L + 102g/L)	Aerial Spraying	18.00	0.08 L	80.83	6.47	24
Defoliation: Ethephon (900g/L)	with above		0.75 L	9.94	7.45	7
Defoliation: Crop oil	with above		1.00 L	7.02	7.02	7
<b>Picking, cartage &amp; ginning</b>						
Picking: Own plant: round baler (variable costs only, incl. fuel)	CP690	86.00 per ha				86
Picking: plus wrap		51.00 / round bale			12.00 / lint bale	144
Cartage: Freight (incl. lift) 50 km from gin	costs related to	63.00 / round bale			14.82 / lint bale	178
Ginning: Fibre processing	yield	72.00 / lint bale			72.00 / lint bale	864
Levies: Research levy & Cotton Australia levy		3.75 / lint bale			3.75 / lint bale	45
<b>Farming: Post-crop</b>						
Farming: Mulcher	295 eng/Hp	17.13				17
Farming: Pupae bust (check bt licence cultivation requirements)	295 eng/Hp	22.95				23
<b>Other</b>						
Crop insurance:				Premium depends on various factors		304
<b>B. TOTAL VARIABLE COSTS \$/ha:</b>						<b>4512</b>
<b>Total irrigation water use ML/ha:</b>			7.6	ML		



Variable Costs by Operation	Machinery		Inputs				TOTAL
		Total \$/ha	Rate /ha	Unit	Cost \$/unit	Cost \$/ha	Cost \$/ha
<b>Fallow management (long fallow)</b>							
Fallow spray: Glyphosate (450g/L)	Self Propelled	1.37	2.00	L	5.17	10.34	<b>12</b>
Fallow spray: Flumioxazin (500g/L)	with above		0.03	kg	150.54	4.52	<b>5</b>
Fallow spray: Paraquat (360g/L)	Self Propelled	1.37	2.00	L	5.98	11.96	<b>13</b>
Fallow spray: Flumioxazin (500g/L)	with above		0.03	kg	150.54	4.52	<b>5</b>
Fallow spray: Glyphosate (450g/L)	Self Propelled	1.37	2.00	L	5.17	10.34	<b>12</b>
Fallow spray: Isoxaflutole (750g/kg)	with above		0.10	kg	124.56	12.46	<b>12</b>
<b>Farming</b>							
Farming: Discing	295 eng/HP	25.63					<b>25.63</b>
Farming: Hill up	295 eng/HP	16.00					<b>16.00</b>
Farming: Rubber tyre roller	225 eng/HP	5.80					<b>5.80</b>
<b>Nutrition</b>							
Fertiliser: MAP (15kg N, 33kg P, 15kg S) - spread pre plant	295 eng/HP	8.41	150	kg	1.06	159.00	<b>167.41</b>
<b>Planting</b>							
Planting: Planter & seed: Pigeon pea	225 eng/HP	12.69	15.0	kg	3.30	49.50	<b>62.19</b>
<b>Irrigation</b>							
Irrigation: Budgeted water			3.8	ML	114.72	438.81	<b>438.81</b>
<b>Herbicide &amp; application</b>							
Herbicide: Pendimethalin (455g/L)	Self Propelled	1.37	2.00	kg	12.82	25.65	<b>27.02</b>
Herbicide: Prometryn (500g/L)	with above		2.50	kg	18.29	45.71	<b>45.71</b>
Herbicide: Glyphosate (450g/L)	Self Propelled	1.37	1.60	L	5.17	8.27	<b>9.64</b>
Farming: Cultivation: Inter-row	295 eng/HP	11.94					<b>11.94</b>
<b>Post-crop</b>							
Farming: Crop destruction (slashing)	225 eng/HP	17.13					<b>17.13</b>
<b>B. TOTAL VARIABLE COSTS \$/ha:</b>							<b>886</b>
<b>Total irrigation water use ML/ha:</b>			<b>3.8 ML</b>				

**2023-24 Cotton Gross Margins, brought to you by the cotton industry's joint extension program, CottonInfo.**

**Footnotes**

**^Cost of water:** The cost of applied irrigation water varies considerably depending on: source (groundwater, surface water), number of times pumped to get to field, energy source of pumps, and relevant fees and charges. This budget assumes 82% surface water and 18% groundwater (2021-22 Grower Survey), with a total surfacewater cost of \$58/ML and a groundwater cost of \$74/ML (both twice lifted and including pump fuel and maintenance and water usage charges) and lateral-mover cost of \$53/ML

**# Irrigation:** Water ML/ha pumped from sources (surface or groundwater). NSW DPI Cotton Water Benchmarking shows a two year average (2017-18 and 2021-22) field applied water of 6.7ML/ha correlating with a 12+ bale crop. Water application for refuge pigeon peas is estimated at 4.5 ML/ha, giving total cotton (1 ha) and refuge (0.025 ha) water use of 6.8 ML/ha. Research and trials show that overhead irrigation systems can decrease water application by up to 30% compared to surface irrigation (see 2022 ACPM p29). A more conservative 15% has been applied to the 6.8 ML/ha furrow irrigation water use, generating a 5.8 ML/ha overhead irrigation requirement for cotton. Average conveyance efficiency is 76% brings total sourced water to 7.6 ML/ha. Individual water budgets will vary depending on irrigation system efficiency, and regional and seasonal variations in plant evapotranspiration and effective rainfall.

**Machinery costs:** The cost of each farming pass reflects variable costs only (fuel, repairs and maintenance), labour and depreciation are considered overhead costs, so are not included in this budget. Contractor rates encompass these costs and are outlined in a separate budget.

**Rotation:** This budget assumes the previous crop was wheat, followed by a long fallow.

**\* Yield:** Actual yields are a complex result of agronomic and environmental factors. In this budget a yield of 12 bales/ha is appropriate considering the long fallow, fertiliser program and budgeted irrigation water.

See the **Gross Margin Notes** for further details on assumptions.

**Acknowledgements**

We wish to acknowledge the efforts made by industry specialists and management during the development and review of the 2023 cotton gross margin budgets. Assistance was provided by retailers, agronomists, the CottonInfo team, CCA, and CSD.

**Disclaimer**

CottonInfo & Ag Econ accept no responsibility for the accuracy or completeness of any material contained in this publication. Additionally, CottonInfo & Ag Econ disclaim all liability to any person in respect of anything, and of the consequences of anything, done or omitted to be done by any such person in reliance, whether wholly or partly, on any information contained in this publication. Material included in this publication is made available on the understanding that CottonInfo & Ag Econ are not providing professional advice. If you intend to rely on any information provided in this publication, you should obtain your own appropriate professional advice.