

### Gross Margin Budget: Semi-irrigated Cotton, double skip

Bollgard3®, Roundup Ready Flex®



#### INCOME:

7.0 bales/ha\* @

Cotton lint	\$594 /bale (at gin)
Cotton seed	\$93 /bale (at gin)
	<b>\$686 /bale (at gin)</b>

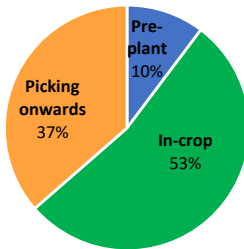
Example Budget \$/ha  
Your Budget \$/ha

\$4,157  
\$648

**A. TOTAL GROSS INCOME \$/ha: \$4,805**

#### VARIABLE COSTS:

See pg 2 for details



Fallow management	\$58
Farming: Pre-planting	\$47
Nutrition	\$292
Planting	\$42
Irrigation (3.5 ML applied)	\$215
Insurance	\$200
Crop protection, application & licence fee	\$579
Defoliation	\$127
Picking, cartage & ginning	\$775
Farming: Post-crop	\$118
<b>B. TOTAL VARIABLE COSTS \$/ha:</b>	<b>\$2,453</b>

**C. GROSS MARGIN (A-B) \$/ha: \$2,353**

**D. GROSS MARGIN (A-B/ML applied) \$/ML: \$510**

Approximate Breakeven Yield (bales/ha) based on lint & seed prices above: **2.8 bales/ha**  
 Approximate Breakeven Price (\$/bale) based on 7 bales/ha: **\$336 /bale**

*Note that break even yield & price is for variable costs only, overhead costs and labour are NOT considered*

#### SENSITIVITY TABLE

227kg lint bales/ha	\$2,353	PRICE (\$/bale incl. of seed & discounts)				
		586	636	686	736	786
3.5	74	241	409	577	744	
5.0	763	1002	1242	1482	1721	
6.0	1222	1510	1797	2085	2373	
7.0	1682	2017	<b>2353</b>	2688	3024	
8.0	2141	2525	2908	3292	3675	
9.0	2601	3032	3464	3895	4326	
10.5	3290	3794	4297	4800	5303	

#### The Southern Oscillation Index (SOI)

The Southern Oscillation Index (SOI) represents the atmospheric component of ENSO. This has a strong impact on water budgets and early season crop evapotranspiration.

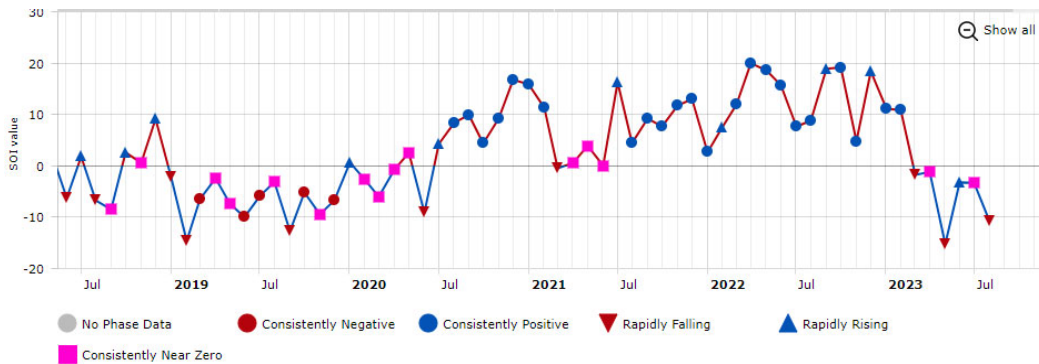


Chart source: The Long Paddock (QLD Gov) 2023

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	Band Width	Cost \$/ha	Cost \$/ha	
<b>Fallow management (long fallow)</b>									
Fallow spray: Glyphosate (450g/L)	Self Propelled	1.37	2.00	L	5.17	100%	10.34	12	
Fallow spray: Flumioxazin (500g/L)	with above		0.03	kg	150.54	100%	4.52	5	
Fallow spray: Paraquat (360g/L)	Self Propelled	1.37	2.00	L	5.98	100%	11.96	13	
Fallow spray: Flumioxazin (500g/L)	with above		0.03	kg	150.54	100%	4.52	5	
Fallow spray: Glyphosate (450g/L)	Self Propelled	1.37	2.00	L	5.17	100%	10.34	12	
Fallow spray: Isoxaflutole (750g/kg)	with above		0.10	kg	124.56	100%	12.46	12	
<b>Farming: Pre-planting</b>									
Farming: Discing	295 eng/Hp	25.63						26	
Farming: Hill up	295 eng/Hp	16.00						16	
Farming: Rubber tyre roller	225 eng/Hp	5.80						6	
<b>Nutrition</b>									
Fertiliser: MAP (15kg N, 33kg P, 15kg S) - spread pre plant	295 eng/Hp	8.41	150	kg	1.11	50%	83.55	92	
Fertiliser: Potassium (45kg K) - spread pre plant	295 eng/Hp	8.41	90	kg	1.02	50%	45.68	54	
Fertiliser: Urea (140kg N) - drilled pre plant	295 eng/Hp	15.10	304	kg	0.86	50%	130.57	146	
<b>Planting</b>									
Planting: Precision planter	295 eng/Hp	12.69						13	
Planting: Seed: Roundup Ready Flex® Bollgard3®	with above		6.5	kg	8.96	50%	29.13	29	
<b>Irrigation management</b>									
Irrigation: Budgeted water (from source) #			4.6	ML	43.13	100%	198.26	198	
Other: Soil moisture monitoring		8.75						9	
Farming: Rotobuck/Knockdown (once in season)	225 eng/HP	7.56						8	
<b>Crop protection, application &amp; licence fee</b>									
Insecticide: Sulfoxaflor (500g/kg), target: mirids	Self Propelled	1.37	0.14	kg	302.90	50%	21.20	23	
Insecticide: Fipronil (200g/L), target: mirids	Self Propelled	1.37	0.07	L	71.36	50%	2.50	4	
Insecticide: Pyriproxyfen (100g/L), target: SLW	Aerial Spraying	18.00	0.50	L	132.05	100%	66.02	84	
Insecticide: Diafenthiuron (500g/L), target: SLW, aphids, mites	Aerial Spraying	18.00	0.60	L	44.02	100%	26.41	44	
Herbicide: Pendimethalin (455g/L)	Self Propelled	1.37	2.20	kg	12.82	100%	28.21	30	
Herbicide: Roundup Ready® Plantshield® (690g/kg Glyphosate)	Self Propelled	1.37	1.20	kg	10.50	100%	12.60	14	
Herbicide: Roundup Ready® Plantshield® (690g/kg Glyphosate)	Aerial Spraying	18.00	1.20	kg	10.50	100%	12.60	31	
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	0.15	L	23.80	3.57		22	
Other: Chipping or Spot Spray		5.00						5	
Licence: Bollgard 3® RRF Licence Fee: Late Crop Removal						50%	420.00	210	
Other: Consultant	Contractor	75.00						75	
Refuge: Refuge crop: Pigeon peas 2.5%, see page 3			0.04	ML		50%		8	
<b>Defoliation</b>									
Defoliation: Thidiazuron + Diuron (120g + 60g/L)	Self Propelled	3.49	0.15	L	173.00	100%	25.95	29	
Defoliation: Ethephon (900g/L)	with above		0.75	L	9.94	100%	7.45	7	
Defoliation: Crop oil	with above		1.00	L	7.02	100%	7.02	7	
Defoliation: Thidiazuron + Diuron (120g + 60g/L)	Self Propelled	3.49	0.15	L	173.00	100%	25.95	29	
Defoliation: Ethephon (900g/L)	with above		0.75	L	9.94	100%	7.45	7	
Defoliation: Crop oil	with above		1.00	L	7.02	100%	7.02	7	
Defoliation: ETee® (25g/L + 756g/L + 102g/L)	Aerial Spraying	18.00	0.08	L	80.83	100%	6.47	24	
Defoliation: Ethephon (900g/L)	with above		0.75	L	9.94	100%	7.45	7	
Defoliation: Crop oil	with above		1.00	L	7.02	100%	7.02	7	
<b>Picking, cartage &amp; ginning</b>									
Picking: Own plant: round baler (variable costs only, incl. fuel)	CP690	56.76	per ha	(double skip picking cost 66% of solid plant)				57	
Picking: plus wrap		51.00	/ round bale				12.00 / lint bale	84	
Cartage: Freight (incl. lift) 50 km from gin	costs related to	63.00	/ round bale	50 km from gin				14.82 / lint bale	104
Ginning: Ginning	yield	72.00	/ lint bale				72.00 / lint bale	504	
Levies: Research levy & Cotton Australia levy		3.75	/ lint bale				3.75 / lint bale	26	
<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	
Farming: Desilting & grading channels	Contractor	70.00						70	
Herbicide: Sterilising channels	225 eng/Hp	8.00						8	
<b>Other</b>									
Crop insurance:			Premium depends on various factors					200	
<b>B. TOTAL VARIABLE COSTS \$/ha:</b>								<b>2,453</b>	
<b>Total irrigation water use ML/ha:</b>			4.6	ML					

# Semi-irrigated Pigeon Peas (refugia for Bollgard3® cotton)

2023-24



Variable Costs by Operation	Machinery		Inputs			TOTAL	
		Total \$/ha	Rate /ha	Unit	Cost \$/unit	Cost \$/ha	TOTAL 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>Farming</b>							
Farming: Discing	295 eng/Hp	25.63					26
Farming: Hill up	295 eng/Hp	16.00					16
Farming: Rubber tyre roller	225 eng/Hp	5.80					6
<b>Nutrition</b>							
Fertiliser: MAP (15kg N, 33kg P, 15kg S) - spread pre plant	295 eng/HP	8.41	150	kg	1.11	167.10	176
<b>Planting</b>							
Planting: Planter & seed: Pigeon pea	225 eng/HP	12.69	15.0	kg	3.30	49.50	62
<b>Irrigation</b>							
Irrigation: Budgeted water (from source) #			3.0	ML	43.13	129.38	129
<b>Herbicide &amp; application</b>							
Herbicide: Pendimethalin (455g/L)	Self Propelled	1.37	2.00	kg	12.82	25.65	27
Herbicide: Prometryn (500g/L)	with above		2.50	kg	18.29	45.71	46
Herbicide: Glyphosate (450g/L)	Self Propelled	1.37	1.60	L	5.17	8.27	10
Farming: Cultivation: Inter-row	295 eng/Hp	11.94					12
<b>Post-crop</b>							
Farming: Crop destruction (slashing)	225 eng/HP	17.13					17
Farming: Bed renovation (check bt licence requirements)	295 eng/Hp	16.00					16
<b>B. TOTAL VARIABLE COSTS \$/ha:</b>						<b>600</b>	
<b>Total irrigation water use ML/ha:</b>			3.0 ML				

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 (extract and lift to storage) and a groundwater cost of \$74/ML (extract only), both including pump fuel and maintenance and water usage charges.

**# Irrigation:** Water ML/ha pumped from sources (surface or groundwater). Individual farm and field water budgets will vary depending on irrigation system efficiency, and regional and seasonal variations in plant evapotranspiration and effective rainfall. Applied irrigation water of 3.5 ML is based on the target yield of 7 bales ha and 200mm plant available water content (PAWC) at planting. Applied water for refuge pigeon peas is estimated at 3.0 ML/ha, giving total cotton (1 ha) and refuge (0.025 ha) water use of 3.5 ML/ha. Average conveyance efficiency of 76% (NSW DPI Water Benchmarking 2 year average 2017-18 and 2021-22) brings total sourced water to 4.6ML/ha.

**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. Yields will vary between regions and row configurations depending on environmental conditions. The yield of 7 bales ha assumes 200mm plant available water content (PAWC) at planting and applied irrigation water of 3.5ML.

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.

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