

Crop economics

By **FIONA SCOTT & JANINE POWELL**,
I&I NSW



Fiona Scott.



Janine Powell.

Finance

Financing the crop is a major consideration. Crop credit is available through agricultural chemical resellers and allows growers the option of deferring chemical costs until after picking. Interest is charged at current short term money market rates, e.g bank bill rates.

At picking, pre-ginning loans (module advances) are available from most ginners and merchants. Details should be discussed with your merchant.

Timing of payment for cotton lint depends on the type of contract. Cash contracts are generally paid within 14 days of ginning, whilst 'Pool' contracts may pay up to 75 percent in July (after ginning) with further payments in September and December. Confirm with your accountant and merchant about the best payment structure for your business prior to entering into any contracts.

Gross margin budgets

A gross margin represents the difference between gross income and the variable costs of producing the crop. Gross margin budgets provide a guide to the relative profitability and an indication of the management operations involved in different enterprises.

Gross margins do not take into account risk or farm profit.

Risk

Gross margins can show the proportion of costs in relation to income, but don't consider price and yield risk. The following sensitivity charts help to illustrate the effect that changes in yield and cotton lint prices have on gross margins.

BE AWARE OF

- Budgeting is essential. Do not rely on published budgets as they will not reflect the growing situation for your farm, instead use them as a guide to create your own budgets.
- Gross margins can show the proportion of costs in relation to income, but they don't consider price and yield risk.

These sensitivity charts reflect the resulting changes to crop gross margins from a 20% change in both typical yields & long term average prices. **The charts emphasise that the profitability of a cotton crop is highly sensitive to both changes in yield and the cotton lint price, highlighting the importance of using achievable figures in the budgeting process.** The range of potential yields and prices is much wider than depicted, however it is the relationship between yield, price and the effect they have on gross margins which is important.

FIGURE 1.

Sensitivity analysis – yield & \$/bale – dryland cotton (approx \$1200/ha costs).

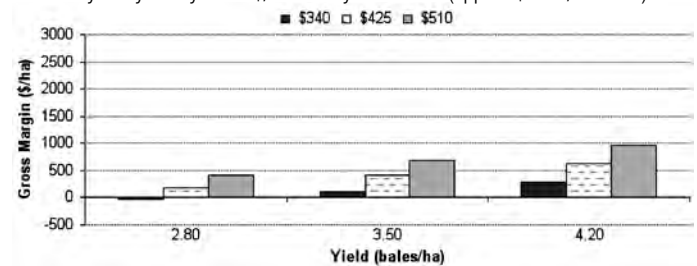
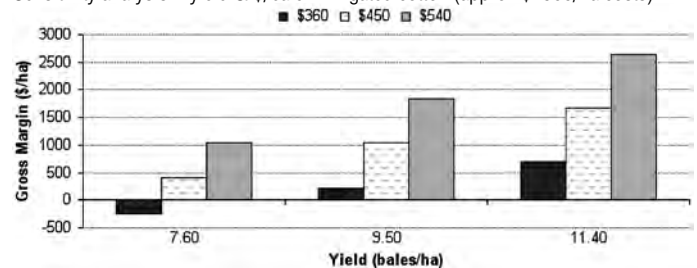


FIGURE 2.

Sensitivity analysis – yield & \$/bale – irrigated cotton (approx \$2800/ha costs).



Gross margin budgets do not show gross **farm profit** because they do not include fixed or overhead expenses such as depreciation on machinery and buildings, interest or insurance payments, rates, taxes or permanent labour which have to be met regardless of crop type. The amount of fixed costs per hectare varies considerably between properties, making it difficult to provide useful representative estimates of such costs.

Industry & Investment NSW develop gross margin budgets for crops, vegetables and livestock annually at <http://www.dpi.nsw.gov.au/agriculture/farm-business/budgets>

Individual budgets are provided in Portable Document Format (PDF). To read these files you need to have Adobe Acrobat Reader installed on your computer.

Budgets are calculated using crop yields for the region that are consistent with the operations given, current commodity and input prices and technical information provided by agronomists and cotton industry development officers.

The degree to which these budgets reflect actual crop returns will be influenced not only by general factors common to all farms, such as prices and season conditions, but also by the individual farm characteristics such as soil type, crop rotation, and management.

Consequently, it is strongly recommended that published gross margin budgets be used as a **GUIDE ONLY** and

should be changed to take account of movements in crop prices, changes in seasonal conditions and individual farm characteristics.

Refer to the Industry and Investment website (<http://www.dpi.nsw.gov.au/agriculture/farm-business/budgets>) Download: 'Farm forms – crop') for downloadable specialised cotton budget forms in Excel format.

Gross margins need to be used carefully when using them as a guide to deciding on the farm's overall enterprise mix. Because overhead costs are excluded, it is advisable to only make comparisons of gross margins between enterprises which use similar resources (i.e labour).

If major changes are being considered, more comprehensive budgeting techniques (that include overhead costs) are required to indicate the real profitability situation.

Assumptions used for the Industry & Investment gross margins include:

- Average cotton yields from the previous season.
- An average to high number of insecticide applications using a soft approach to maintain predators (listing of brand or chemical names in the budgets does not imply a recommendation of those brands/ chemicals).
- Selection of pesticide varies markedly depending on pest species and season. Rotation of insecticides should be followed as per industry strategy, which changes each year due to changes in insect resistance to chemicals (see pest management guide for details).
- Source of water is from the river using a diesel pump.
- 7ML of irrigation water is the volume applied to the crop in field (system losses & tail water not accounted for).
- Machinery costs refer to the variable costs of fuel, oil, repairs and maintenance for both the tractor and the implement. For details on variable and overhead cost calculations refer to Industry & Investment's Guide to machinery and water costs at <http://www.dpi.nsw.gov.au/agriculture/farm-business/budgets> and the 'Guide to machinery costs and contract rates' (Primefact 913) on the same site.
- All prices are those estimated in the August prior to planting.

Table 1 below is an example of a simple gross margin. The budget lists income sources, cost items and totals, with gross margin calculated as the total income less total costs. These figures are an indication only, and may not reflect your personal situation. For more detailed cotton budgets, see the following websites;

Industry & Investment NSW:

PDF Summer Gross Margins: <http://www.dpi.nsw.gov.au/agriculture/farm-business/budgets/summer-crops>

Downloadable Gross Margin template: http://www.dpi.nsw.gov.au/__data/assets/file/0008/195641/FF-crop2009.xls

Cotton Seed Distributors:

Gross Margin Analysis: <http://www.csd.net.au/page/show/21113/>

Dryland cotton overview (including gross margin comparisons for various row configurations)

<http://www.csd.net.au/asset/send/2283/inline/original/>

TABLE 1.

Example summary gross margin @ \$550/bale. Use this Gross Margin budget as a guide to create your own budget reflecting your operations, yield estimates and current pricing.

IRRIGATED COTTON (Roundup Ready Flex™ Bollgard II®)	
Income	
9.5 bales/ha @ \$550/bale	\$ 5225
2.95 t/ha seed @ \$240/tonne	\$ 708
TOTAL INCOME (A)	\$ 5933
Variable Costs	
Cultivation	\$ 12.00
Seed and sowing	\$ 97.00
Fertilisers	\$ 626.00
Herbicides	\$ 128.00
Insecticides	\$ 53.00
Defoliants	\$ 87.00
Boom applications	\$ 13.00
Aerial applications	\$ 68.00
Irrigation 7ML (C)	\$ 287.00
Insurance	\$ 55.00
Consultant	\$ 60.00
Licence fees	\$ 390.00
Contract harvesting	\$ 285.00
Module lifting	\$ 28.00
Cartage	\$ 83.00
Ginning	\$ 523.00
Levies	\$ 43.00
Stalk pull & mulch	\$ 75.00
Pupae Busting & Bed Renovation	\$ 60.00
Refuge (Pigeon Pea 5%)	\$ 23.00
TOTAL VARIABLE COSTS (B)	\$ 2,996
GROSS MARGIN/HA (=A-B)	\$ 2,937
GROSS MARGIN/ML (=A-B)/C)	\$ 420
Pigeon Pea Refuge Crop (assumed costs)	
Seed & Sowing	\$ 76.00
Herbicides	\$ 153.00
Boom applications	\$ 7.00
Irrigation	\$ 112.00
Slashing	\$ 12.00
Cultivation	\$ 107.00
Variable Costs per ha of pigeon pea	\$ 467.00



A rain gauge is so simple yet so vital.

It has a simple task: measuring rainfall. But what can be gained from it is vital. What we do is vital to your business too. We're an agribusiness bank. That means we provide loans for property purchase, refinancing and working capital for producers like you. This exclusive focus enables us to help your business meet your ambitions and secure your long-term future. That's why we have the most satisfied clients in the industry.

Rabobank. One focus.

**Call Australia's safest bank* on 1300 30 30 33
or visit www.rabobank.com.au**



Rabobank

*The obligations of Rabobank Australia Limited ACN 001 621 192 are guaranteed by its ultimate parent, Rabobank, ranked safest non-government owned bank: Global Finance magazine since 1999.