



**SURFACE IRRIGATED CHICKPEAS (diesel pump from surface supply)**  
Farm Enterprise Budget Series - Northern & Central NSW Winter 2012

**1. GROSS MARGIN BUDGET:**

**INCOME:**

2.80 tonnes/ha@ \$440.00 /tonne (on farm)

Crop prices were correct at the time of writing (Feb 2012), world market volatility makes estimation of future pricing impractical.

| Sample Budget \$/ha | Your Budget \$/ha |
|---------------------|-------------------|
| \$1,232.00          |                   |

**A. TOTAL INCOME \$/ha:**

**\$1,232.00**

**VARIABLE COSTS:**

See next page for detail

|                                      |          |  |
|--------------------------------------|----------|--|
| Sowing.....                          | \$87.68  |  |
| Fertiliser.....                      | \$70.50  |  |
| Herbicide (including desiccant)..... | \$167.59 |  |
| Insecticides.....                    | \$40.75  |  |
| Fungicides.....                      | \$39.12  |  |
| Irrigation.....                      | \$115.75 |  |
| Contract harvesting.....             | \$86.24  |  |
| Levies.....                          | \$12.57  |  |
| Crop Insurance.....                  | \$63.20  |  |

**B. TOTAL VARIABLE COSTS \$/ha:**

**\$683.39**

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

**\$548.61**

**D. Gross margin of alternative dryland crop based on Dryland Chickpeas (no till)**

**\$213.04**

**E. Extra gross margin due to irrigation (C-D)**

**\$335.57**

**F. Gross margin/ML (E÷ML water applied in irrigation)**

**\$129.06**

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

| YIELD tonnes/ha | On Farm Price |              |              |              |              |
|-----------------|---------------|--------------|--------------|--------------|--------------|
|                 | \$340 /tonne  | \$390 /tonne | \$440 /tonne | \$490 /tonne | \$540 /tonne |
| 1.8             | - \$33        | \$51         | \$136        | \$220        | \$305        |
| 2.2             | \$94          | \$198        | \$301        | \$404        | \$507        |
| 2.5             | \$190         | \$307        | \$425        | \$542        | \$659        |
| <b>2.8</b>      | \$286         | \$417        | <b>\$549</b> | \$680        | \$811        |
| 3.0             | \$350         | \$490        | \$631        | \$772        | \$913        |
| 3.3             | \$445         | \$600        | \$755        | \$910        | \$1,065      |
| 3.6             | \$541         | \$710        | \$879        | \$1,048      | \$1,217      |

Gross margin is zero when income is reduced by 45%  
or variable costs are increased by 80%

**LABOUR REQUIREMENTS:** - labour is not costed in this budget.

**Water pumping costs:** calculated using diesel powered pumping from surface supply.

Irrigation costs were calculated using 2009 Namoi Valley regulated river water charges and pumping costs for 10 metres total head (\$13.02/ML). Your costs are likely to be different and should be allowed for.

**Water requirements** 2.60 ML/ha

**MACHINERY ASSUMPTIONS:**

Tractor - pto power: 130 kW (175 HP); engine power: 146 kW (196 HP)

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

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| CALENDAR OF OPERATIONS:                                 |         | Machinery    |                 |                | Inputs                  |            |                | Total Cost<br>\$/ha |
|---|---------|--------------|-----------------|----------------|-------------------------|------------|----------------|---------------------|
| Operation   | Month   | hrs /ha      | Cost<br>\$/hour | Total<br>\$/ha | Rate/ha                 | Cost<br>\$ | Total<br>\$/ha |                     |
| broadleaf and grass weed control eg: glyphosate 540 g/L | Dec     | 0.05         | 54.96           | 2.75           | 1.8 L                   | 7.44/L     | 13.39          | <b>16.14</b>        |
| broadleaf weed control eg: triclopyr 600g/L             | Dec     | with above   |                 |                | 0.08 L                  | 19.57/L    | 1.57           | <b>1.57</b>         |
| wetting agent   | Dec     | with above   |                 |                | 0.25 L                  | 7.47/L     | 1.87           | <b>1.87</b>         |
| broadleaf and grass weed control eg: glyphosate 540 g/L | Jan     | 0.05         | 54.96           | 2.75           | 2.0 L                   | 7.44/L     | 14.88          | <b>17.63</b>        |
| wetting agent   | Jan     | with above   |                 |                | 0.25 L                  | 7.47/L     | 1.87           | <b>1.87</b>         |
| broadleaf and grass weed control eg: glyphosate 540 g/L | Feb     | 0.05         | 54.96           | 2.75           | 1.8 L                   | 7.44/L     | 13.39          | <b>16.14</b>        |
| wetting agent   | Feb     | with above   |                 |                | 0.25 L                  | 7.47/L     | 1.87           | <b>1.87</b>         |
| broadleaf and grass weed control eg: glyphosate 540 g/L | Mar     | 0.05         | 54.96           | 2.75           | 1.2 L                   | 7.44/L     | 8.93           | <b>11.68</b>        |
| wetting agent   | Mar     | with above   |                 |                | 0.25 L                  | 7.47/L     | 1.87           | <b>1.87</b>         |
| irrigation pre-sowing                                   | Apr     |              |                 |                | 1.0 ML                  | 44.52/ML   | 44.52          | <b>44.52</b>        |
| broadleaf and grass weed control eg: paraquat + diquat  | May     | 0.05         | 54.96           | 2.75           | 2.5 L                   | 10.93/L    | 27.33          | <b>30.07</b>        |
| sowing (inoculated seed)                                | May     | 0.17         | 75.66           | 12.86          | 60 kg                   | 1.17/kg    | 70.02          | <b>82.88</b>        |
| P-Pickle T seed treatment                               | May     | with above   |                 |                | 120 mL                  | 0.04/mL    | 4.80           | <b>4.80</b>         |
| fertiliser (Starter Z)                                  | May     | with above   |                 |                | 75 kg                   | 0.94/kg    | 70.50          | <b>70.50</b>        |
| PSPE broadleaf & grass weed control eg simazine 500 g/L | May     | 0.05         | 54.96           | 2.75           | 1.25 L                  | 7.97/L     | 9.96           | <b>12.71</b>        |
| PSPE broadleaf weed control eg **isoxaflutole 750 g/kg  | May     | with above   |                 |                | 50 g                    | 0.37/g     | 18.50          | <b>18.50</b>        |
| disease control eg.mancozeb *                           | Jun     | 0.05         | 54.96           | 2.75           | 1 kg                    | 9.21/kg    | 9.21           | <b>11.96</b>        |
| grass weed control eg haloxyfop-R 520g/L                | Jun     | with above   |                 |                | 0.06 L                  | 99.00/L    | 5.94           | <b>5.94</b>         |
| crop oil  | Jun     | with above   |                 |                | 0.5 L                   | 3.91/L     | 1.96           | <b>1.96</b>         |
| disease control eg.mancozeb *                           | Jul     | 0.05         | 54.96           | 2.75           | 1 kg                    | 9.21/kg    | 9.21           | <b>11.96</b>        |
| irrigation  | Aug/Sep |              |                 |                | 0.8 ML                  | 44.52/ML   | 35.62          | <b>35.62</b>        |
| insect control eg. indoxacarb #                         | Sep     | aerial spray |                 | 20.00          | 0.30 L                  | 69.15/L    | 20.75          | <b>40.75</b>        |
| disease control eg.chlorothalonil *                     | Sep     | with above   |                 |                | 1.0 L                   | 15.20/L    | 15.20          | <b>15.20</b>        |
| irrigation  | Sep/Oct |              |                 |                | 0.8 ML                  | 44.52/ML   | 35.62          | <b>35.62</b>        |
| desiccant-eg. glyphosate 540 g/L                        | Nov     | aerial       |                 | 20.00          | 1.0 L                   | 7.44/L     | 7.44           | <b>27.44</b>        |
| desiccant eg metsulfuron-methyl                         | Nov     | with abov    | 54.96           |                | 5 g                     | 0.07/g     | 0.35           | <b>0.35</b>         |
| contract harvest  | Nov     |              |                 |                |                         |            |                | <b>86.24</b>        |
| levies  | Nov     |              |                 |                | 1.020% of on-farm value |            |                | <b>12.57</b>        |
| crop insurance  |         |              |                 |                | 5.130% of on-farm value |            |                | <b>63.20</b>        |

Input prices were correct at the time of writing (Feb 2012). Current fertiliser and chemical market uncertainty makes estimation of future pricing impractical.

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### AGRONOMIC NOTES:

**Soils:** Soils must be well drained to reduce risk of waterlogging. Be aware of and monitor sub-soil constraints that could limit yield potential.

**Fertiliser:** Nutrient requirements should be assessed using soil tests and previous strip trials. Adequate levels of phosphorus and sulfur should be applied.

**Sowing:** Sow irrigated chickpeas within the same timeframe as recommended for a dryland crop. Choose varieties with greater Phytophthora tolerance on heavier soil types. Shorter varieties will reduce lodging potential and compensate by increased branching. On wide row spacing (eg standard 1m cotton hills) lower sowing rates are recommended to reduce overly dense plant population; twin-row configurations may be substituted on wider beds. Seed price used above is for purchased seed; adjust budget if using retained seed. Inoculation with group N inoculum is essential.

**Herbicides:** Weed control is critical; a pre-emergent broadleaf herbicide is recommended. PSPE = Post-sowing pre-emergent  
\*\*Isoxaflutole is **not recommended** for use with the chickpea variety Yorker. Application of isoxaflutole post-sowing pre-emergence to crops of Yorker chickpeas can result in unacceptable crop damage and may result in yield loss.

Chickpeas are highly sensitive to sulfonylurea herbicide residues. To reduce the risk of herbicide resistance, rotate herbicide groups & consider other non-chemical weed management techniques.

*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 a recommendation of that brand by NSW DPI.*

**Disease:** Ascochyta blight, Phytophthora, botrytis grey mould and Sclerotinia can all reduce yield.

Varietal resistance and seasonal conditions, especially frequency of rainfall events, will all affect fungicide strategy options.

Check the specific "VMP" (Variety Management Package) to determine the relevant strategy for the variety sown.

Check current permits and registrations prior to using fungicides. \* Example uses fungicide for early vegetative control and a pre-flowering spray; timing will be dependent on forecast rainfall events and varietal resistance levels.

**Insects:** Heliothis must be monitored twice-weekly from flowering through to end of podding. # Indoxacarb used as example; must be used within approved window.

**Controlled Traffic layouts:** Chickpeas grown on wide rows in a controlled traffic or irrigation layout can be band sprayed with herbicides, fungicides and/or insecticides. This may reduce the chemical cost to half and may reduce the application cost from an aerial spray to a ground spray.

**Harvest:** Desiccation is strongly recommended for irrigated crops to ensure even maturity, and hence reduce harvest delays and loss of potential quality. Glyphosate should not be applied on crops intended for sowing seed or sprouting. When using desiccants, ensure withholding periods are adhered to. Grading may be required, extra cost is not included in budget.

**Irrigation scheduling:** Pre-sowing irrigation may be optional, dependent on stored soil moisture following summer rainfall. Timing of the first in-crop irrigation is critical and must be pre-flowering, when RAW reaches 30-40% depletion. Sufficient moisture must be supplied to cover the flowering period. However waterlogging an already stressed crop at flowering can cause severe yield loss or actual plant death. It is imperative to get the water on and off the field as quickly as possible when irrigating chickpeas.

Second in-crop irrigation is optional but will increase yield and seed size. Timing and amount will be dependent on winter rainfall received but is recommended to occur at early pod-fill stage.