



Area Unit = 1ha

## GARLIC

2013

						standard budget	your budget
INCOME:	Item	Quantity	Rate	Price			
Anticipated Yield	1st Grade	2814 kg/ha	Large	@	\$ 6.00 /kg	\$ 16,884.00	
	2nd Grade	2680 kg/ha	Medium	@	\$ 4.00 /kg	\$ 10,720.00	
	<b>Marketable Total</b>	<b>5494 kg/ha</b>					
			<b>Weighted Average</b>		<b>\$ 5.02 /kg</b>		
<b>A. Gross Income/ha</b>						<b>\$ 27,604.00</b>	
OPERATING COSTS:						\$ Cost	
<b>Seed and Plants</b>	Large Bulbs (10 cloves/bulb)		938 kg/ha		\$ 8.00 /kg	\$ 7,504.00	
<b>Fertiliser</b>	Single Super		400 kg/ha		\$ 0.48 /kg	\$ 192.00	
	Calcium Nitrate		175 kg/ha		\$ 0.76 /kg	\$ 133.00	
	Potassium Nitrate		175 kg/ha		\$ 1.32 /kg	\$ 231.00	
	Magnesium Nitrate		125 kg/ha		\$ 1.28 /kg	\$ 160.00	
	Urea		60 kg/ha		\$ 0.86 /kg	\$ 51.60	
	Micro Nutrients		5 L/ha		\$ 6.50 /L	\$ 32.50	
<b>Fuel</b>	Ground Preparation	15 L/hr	2.0 hr/ha		\$ 1.15 /L	\$ 34.50	
	Bed Preparation	15 L/hr	1.0 hr/ha		\$ 1.15 /L	\$ 17.25	
	Chemical Applications	12 L/hr	5.0 hr/ha		\$ 1.15 /L	\$ 69.00	
	Fertiliser Applications	12 L/hr	2.0 hr/ha		\$ 1.15 /L	\$ 27.60	
	Harvesting	12 L/hr	32.0 hr/ha		\$ 1.15 /L	\$ 441.60	
	Farm Vehicles	12 L/hr	0.4 hr/ha		\$ 1.15 /L	\$ 5.52	
<b>Chemicals</b>	Pre-emergent Herbicide	1 application	1.5 L/ha		\$ 10.10 /L	\$ 15.15	
	Post-emergent Herbicide	1 application	2.0 kg/ha		\$ 83.31 /kg	\$ 166.62	
	Post-emergent Herbicide	1 application	3.0 kg/ha		\$ 83.31 /kg	\$ 249.93	
	Post-emergent Herbicide	2 applications	0.5 L/ha		\$ 14.35 /L	\$ 14.35	
	Insecticide	2 applications	0.04 L/ha		\$ 154.80 /L	\$ 12.38	
	Fungicide	2 applications	2.2 kg/ha		\$ 8.24 /kg	\$ 36.26	
	Fungicide	2 applications	0.29 L/ha		\$ 28.70 /L	\$ 16.65	
<b>Water</b>	Furrow Irrigation		4.5 ML/ha		\$ 60.00 /ML	\$ 270.00	
<b>Labour</b>	Tractor Driving	1 person	7.0 hr/ha		\$ 25.00 /hr	\$ 175.00	
	Weeding/Chipping	1 person	40.0 hr/ha		\$ 18.00 /hr	\$ 720.00	
	Irrigation	1 person	2.4 hr/ha		\$ 25.00 /hr	\$ 60.00	
	Contract Clove Separation	1 person	938 kg/ha		\$ 1.00 /kg	\$ 938.00	
	Manual Harvesting	4 people	32 hr/ha		\$ 18.00 /hr	\$ 2,304.00	
	Topping, Tailing & Packing	4 people	54.0 hr/ha		\$ 18.00 /hr	\$ 3,888.00	
	Shed/Forklift	1 person	0.5 hr/ha		\$ 25.00 /hr	\$ 12.50	
<b>Electricity/Gas</b>	Packing Shed		10.0 hr/ha		\$ 1.05 /hr	\$ 10.50	
<b>Packaging</b>	Packaging Cartons		549 cartons/ha		\$ 1.90 /carton	\$ 1,043.86	
<b>Freight/Transport</b>	Truck	88 <small>cartons/ pallet space</small>	\$ 115.00	<small>cost per pallet space</small>	\$ 1.30 /carton	\$ 714.22	
<b>Other Costs</b>	Agents Commission		15%			\$ 4,140.60	
<b>B. Total Operating Costs</b>						<b>\$ 23,687.59</b>	
<b>Gross Margin per ha (A-B)</b>						<b>\$ 3,916.41</b>	
<b>Gross Margin /ML</b>						<b>\$ 870.31</b>	

Break-even Price	\$4.19 / carton for	5494 cartons/ha
	<b>(weighted average)</b>	
Break-even Yield	4495 cartons / ha @	\$5.02 / carton

### PRODUCT TRADE NAMES

The product trade names in this publication are omitted on the understanding that no preference between equivalent products is intended and that the inclusion of a product does not imply endorsement by NSW DPI over any other equivalent product from another manufacturer.



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### SENSITIVITY ANALYSIS

**TABLE 1- Effect of Yield and Price on Gross Margin /ha**

YIELD (kg)	DELIVERED PRICE (\$/kg)					
	3.02	4.02	5.02	6.02	7.02	8.02
4494	-\$7,674	-\$3,854	-\$34	\$3,786	\$7,605	\$11,425
4994	-\$6,549	-\$2,304	\$1,941	\$6,186	\$10,431	\$14,676
<b>5494</b>	-\$5,423	-\$753	<b>\$3,916</b>	\$8,586	\$13,256	\$17,926
5994	-\$4,298	\$797	\$5,892	\$10,987	\$16,082	\$21,176
6494	-\$3,173	\$2,347	\$7,867	\$13,387	\$18,907	\$24,427

#### NOTES:

**Authors** - This budget was prepared by T.Napier, G.Kelly and S.Watts and outlines production for inland NSW.

**Area** - Small acreages are grown throughout NSW with larger production areas in the Riverina.

**Production** - Planting commences in February (early varieties) and continues to May (late varieties).

- Certain varieties are more adaptable to the grower-packer as they are easier to clean.
- Larger sized cloves are best for planting.
- Plant cloves 10 cm apart. Beds 1.5 m to 1.8 m wide may have 2 to 4 rows about 30 cm apart.
- Plant population of 134,000 plants per hectare.
- Weed control during establishment and the early growth stages is essential to produce adequate yields.
- Monitoring weather conditions and protective spray programs are critical to disease management.
- Water usage is 4 to 6ML/ha and varies with soil, location and season.
- The cost of manual operations such as clove separation and topping, tailing, cleaning, grading and packing of bulbs (costed in this budget) is substantial.
- Initial capital costs for machinery and equipment to grow, handle, prepare and store garlic is significant but can make operations easier and reduce labour costs.

**Pests, Diseases** - Thrips are the main insect pests. Downy mildew, stemphylium and rust are common diseases.

**& Disorders** - Post harvest breakdown can cause large losses.

**Harvesting** - Judging maturity in garlic is more difficult than judging maturity in onions. The crop is ready to harvest when the neck softens and the tops fall over and progressively turn yellow and start to dry out.

- Hand harvest occurs in November and December. Bulbs are then topped, tailed and cured.
- Curing is very important and the crop can be lost to post harvest breakdown if not handled correctly.

**Packaging** - Garlic is marketed in **10 kg cartons**. The classification of sizes varies between growers.

- Large, heavy and clean bulbs is required for markets.
- In this budget: Large > 70 mm, Medium > 50 mm and Small < 50 mm.
- Small and inferior quality garlic is graded out and is of no value on the fresh market.
- If available, small garlic can be sold as factory grade without further processing.

**Yields** - Yields range from 4 to 8 tonne (dry packaged) per hectare.

- Bulbs which are unmarketable but have large clove sizes can be kept as seed for growing the next crop.
- Farmers need to achieve the top yields if Australia is to be internationally competitive.

**Economic** - **This budget is ONLY A GUIDE** and is specific to the regions specified. Costs and income can be altered for changes in crop management or input prices. Farmers should use their own figures.

- The budget uses a format similar to the Method 2 calculator in the VegTool Gross Margin program.
- Average prices for 2012 were used for this budget. Overhead costs or GST are not included.

Trim Reference: INT13/37814