

Lettuce information kit

Reprint – information current in 1997



REPRINT INFORMATION – PLEASE READ!

For updated information please call 13 25 23 or visit the website www.deedi.qld.gov.au

This publication has been reprinted as a digital book without any changes to the content published in 1997. We advise readers to take particular note of the areas most likely to be out-of-date and so requiring further research:

- Chemical recommendations—check with an agronomist or Infopest www.infopest.qld.gov.au
- Financial information—costs and returns listed in this publication are out of date. Please contact an adviser or industry body to assist with identifying more current figures.
- Varieties—new varieties are likely to be available and some older varieties may no longer be recommended. Check with an agronomist, call the Business Information Centre on 13 25 23, visit our website www.deedi.qld.gov.au or contact the industry body.
- Contacts—many of the contact details may have changed and there could be several new contacts available. The industry organisation may be able to assist you to find the information or services you require.
- Organisation names—most government agencies referred to in this publication have had name changes. Contact the Business Information Centre on 13 25 23 or the industry organisation to find out the current name and contact details for these agencies.
- Additional information—many other sources of information are now available for each crop. Contact an agronomist, Business Information Centre on 13 25 23 or the industry organisation for other suggested reading.

Even with these limitations we believe this information kit provides important and valuable information for intending and existing growers.

This publication was last revised in 1997. The information is not current and the accuracy of the information cannot be guaranteed by the State of Queensland.

This information has been made available to assist users to identify issues involved in lettuce production. This information is not to be used or relied upon by users for any purpose which may expose the user or any other person to loss or damage. Users should conduct their own inquiries and rely on their own independent professional advice.

While every care has been taken in preparing this publication, the State of Queensland accepts no responsibility for decisions or actions taken as a result of any data, information, statement or advice, expressed or implied, contained in this publication.



Queensland Government



Before you **START**

If you have never grown lettuce before, then you will find this section very useful. It is a brief checklist of the essential things you need to know before you start. It will help you make the right decision.

The information here is brief and to the point. We provide more detail on important areas in other sections of the kit. Symbols on the left of the page will help you make these links.

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An overview of the Queensland lettuce industry

Lettuce is a popular salad vegetable that is grown throughout the year in southern Queensland. The industry is worth about \$25 million a year, with production concentrated in the Lockyer Valley, southern highlands and the eastern Darling Downs. Cropping times and production areas are shown in Table 1.

Crisphead lettuce are the major commercial type grown in Australia. They have firm heads and brittle leaves, transport well and remain fresh for an extended period. Queensland lettuce is sold primarily into the Sydney, Melbourne, Newcastle and Brisbane markets, or direct to supermarket chains or fast food outlets. Small markets for speciality lettuce (mainly non-hearting types) exist and these are usually grown hydroponically. More recently these types have been grown in the field for marketing as semi-prepared lettuce (washed and ready to eat).

Average prices for lettuce are variable and during peak production (autumn, winter and spring) prices are often low. Summer prices appear more attractive, but in regions with warm or hot summers low yields and reduced quality are generally not offset by these high prices.

Lettuce is an annual of the *Asteraceae* family which includes weeds such as sowthistle and yellow weed.



Table 1. Lettuce growing districts and production times

District	Major production periods
Brisbane Metropolitan, Redland Bay	autumn, winter, spring
Toowoomba	spring, summer, autumn
Lockyer Valley	late autumn, winter, spring
Eastern Darling Downs (uplands)	late spring, summer, autumn
Stanthorpe	summer, autumn

Know what you are getting into

Returns from growing lettuce are highly variable as the market is oversupplied. Selecting the appropriate production/marketing window is difficult, as is selecting the right variety for the district and season. To be profitable you must produce high quality lettuce consistently.

Weed, disease and insect control is difficult. Lettuce has a low tolerance to heliothis (budworm) damage, and diseases such as downy mildew, lettuce necrotic yellows and sclerotinia can be difficult to manage. Options for weed control are limited.

Lettuce quality is greatly influenced by weather, particularly fluctuating temperatures. Rainy weather close to harvest makes the crop susceptible to downy mildew and bacterial dry spot, both of which reduce quality.

Adequate labour for harvesting may be difficult to obtain.



Pest and disease
management
Section 4 page 45

What you can expect to make

Yields

Yields vary from 2000 to 3500 cartons per hectare, depending on the weather and the level of pest and disease problems. Use 2800 cartons per hectare when budgeting.

Prices

Price per carton is very variable and can range from \$2 to \$15. In winter and spring, the average price is about \$6.50. In summer an average of \$7.50 could be expected. Twelve heads are packed into each carton. A cold or wet period during production can markedly reduce the demand for lettuce. Graphs of average prices and market throughput for the Brisbane and Sydney markets for 1994 to 1996 are shown in Figures 1 to 4. The bigger the variation above or below the average price, the greater the opportunity or risk involved.



Market price information
Section 6 page 8

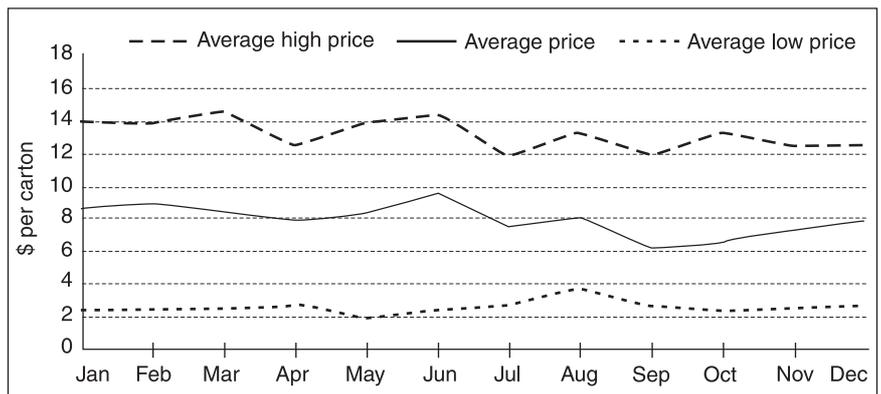


Figure 1. Average price at the **Brisbane** market 1994 to 1996

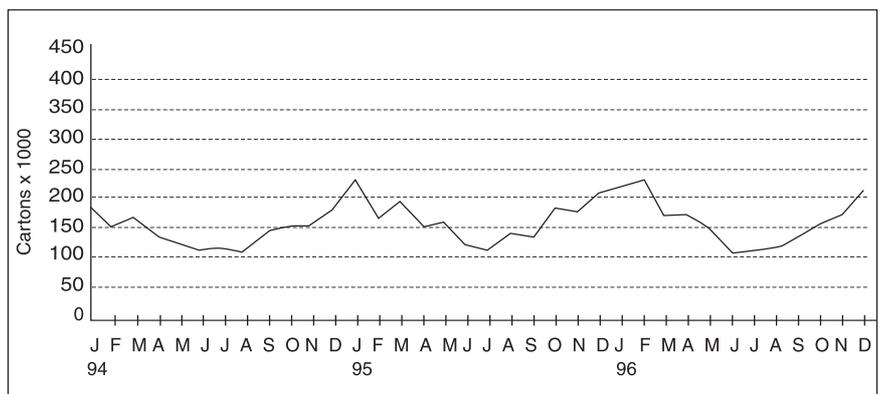


Figure 2. Throughput at the **Brisbane** market 1994 to 1996

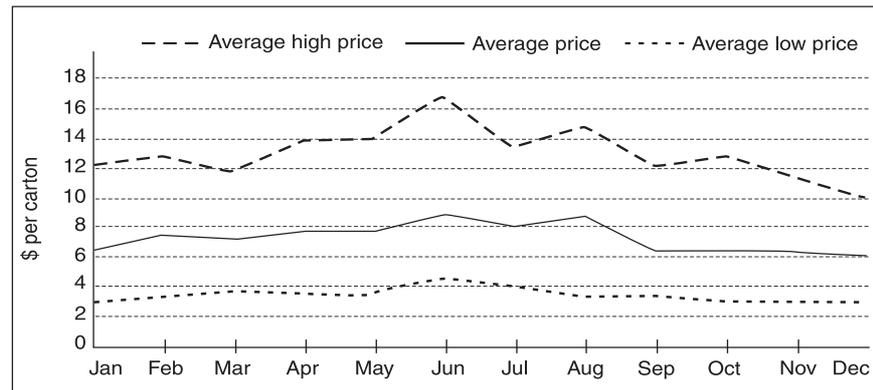


Figure 3. Average price at the Sydney market 1994 to 1996

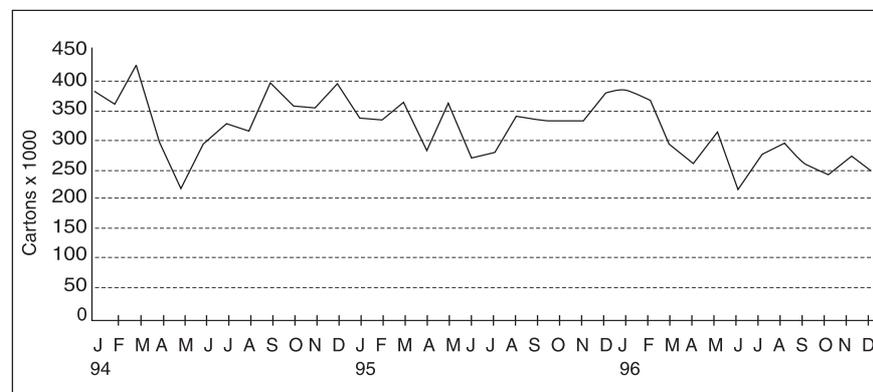


Figure 4. Throughput at the Sydney market 1994 to 1996



Markets and finance
Section 4 page 2

Production costs

Table 2 shows the average costs per carton for a transplanted crop of lettuce producing 2800 cartons per hectare and packed in the field.

Table 2. Average costs per carton of lettuce

Variable expenses	\$/carton
Preharvest (growing the crop using transplants)	\$1.30
Postharvest (picking, packing, cooling, transport and commission)	\$4.65
Total	\$5.95

Income

Prices paid for lettuce are highly variable, so income also varies between periods of good profits and large losses. The prices in Figures 1 and 3, and the costs in Table 2, are an indication of the large variations in income. At an average yield of 2800 cartons per hectare and an average price of \$6.50 per carton, the total revenue after freight and commission is about \$14 000 per hectare. To determine your net income, deduct growing, harvesting and marketing costs plus fixed costs such as rates, depreciation, electricity and living expenses.



A gross margin
Section 4 page 7

The capital you need

You need about \$60 000 to set up a small scale, 10-ha lettuce farm. This includes a tractor, cultivation equipment, transplanter, irrigation equipment and sprayer, and assumes all equipment is purchased new. Second-hand machinery prices are about half the new price, depending on condition and age.

The farm you need

Soil

Soil should be well drained to 30 cm, or deeper if growing through the wet season.

Climate

If maximum daytime temperatures exceed 28°C lettuce quality falls dramatically. Lettuce will only tolerate light frosts. Humid and rainy conditions promote disease infections.

Slope

An 8% slope is the maximum recommended to allow the required mechanisation. Recognised soil conservation practices should be adopted to prevent soil erosion.

Water

Irrigation is essential. Two to three megalitres (ML) per hectare are required per crop. Effective rainfall during the growing period will reduce this requirement. Lettuce has a very low tolerance to saline water. Lower yields and crop damage can be expected if water conductivity (salt content) exceeds 1200 microSiemens per centimetre ($\mu\text{S}/\text{cm}$).

The machinery and equipment you need

The machinery and equipment required will depend on the size of the enterprise. Table 3 lists machinery and equipment that is considered essential and optional for small scale (10-ha) lettuce production. The prices listed are estimates for new machinery but you may hire, borrow or buy second-hand equipment to reduce capital outlays.

The optional machinery and equipment makes management easier by increasing production flexibility. This equipment is considered essential in a larger enterprise.

Lettuce must be pre-cooled before transport. Well cooled lettuce travels better and has a longer shelf life. Cooling can be contracted out to a transport or packing company, but this reduces the flexibility of the production system. If you have your own cool room you do not have to

more info



Growing the crop
Section 3

a key issue



Irrigation
management
Section 4 page 35

a key issue



Harvesting and
marketing
Section 3 page 22

coordinate transport to get your lettuce to a cool room. You reduce the risk of having harvested lettuce sit in the field if trucks are delayed.

Table 3. Essential machinery and equipment needs

Equipment	New prices \$
Essential	
Tractor with carryall (38 to 45 kW)	35 000
Cultivation equipment (chisel plough, tines, 1.5 m rotary hoe)	9 000
Bed-former	1 200
Transplanter	3 000
Fertiliser spreader	3 000
Spray equipment (hydraulic boom 600 L, manual folding)	2 000
Irrigation equipment (hand shift plus main lines) per hectare	3 000
Optional	
Second tractor (56 kW)	45 000
Tractor mounted fork-lift	6 500
Power harrows (1.5 m width with bed-former)	7 000
Harvest aid	12 000
Forced air cooling facilities (8 pallet room)	35 000

The labour you need

Growing lettuce is labour-intensive during transplanting, harvesting and packing. Lettuce is usually planted every week to maintain a consistent supply to the market. Six to eight people are needed to operate a harvest aid efficiently. One person can look after six to seven hectares of crop in the ground with additional casual labour to help with transplanting and harvesting.

Other considerations

Growing lettuce is physically hard work, especially during harvesting and packing. Routine operations include fertilising, irrigating, weeding and pest control.

Careful planning and management is required, as is the ability to observe problems in their early stages and take the necessary corrective actions promptly.

You will need skills to competently manage finances, staff and the crop. Skill in machinery operation and maintenance, and the ability to read and understand chemical labels is essential. Regular contact with wholesalers is also necessary. Careful attention to detail is essential to become a successful lettuce grower.

Lettuce can be grown organically or hydroponically to supply specific markets. There can be major problems with both these methods. Disease management is difficult with both systems.

Niche markets exist for specialty lettuce, for example non-hearting lettuce of various colours and leaf shapes.



Other production methods
Section 4 page 59