

Wine grapes 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 We advise readers to take particular note of the areas most likely to be out-of-date and so requiring further research: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- Financial information—costs and returns listed in this publication are out of date.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 wine grape 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 wine grapes 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 about growing wine grapes.

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 wine grape industry

The Queensland wine grape industry historically has been centred in the Granite Belt around Stanthorpe and with one vineyard at Roma. In recent years wine grapes have been planted in earlier maturing districts such as the Burnett Valley, St George, and the Sunshine Coast and Gold Coast hinterlands.

By 1997 an estimated 200 hectares was planted to wine grapes. Most vineyards are small, less than five hectares, and most wineries crush less than 50 tonnes a year.

The demand for Queensland-grown wine grapes exceeds supply. Given appropriate market development and an increase in the state's winemaking capacity, this demand is likely to continue to 2005. If these issues are not addressed, continued increases in planted area could lead to an oversupply of wine grapes.

Most of Queensland's wine is sold at the cellar door and on the domestic retail market. There are some export sales which should increase.

Know what you are getting into



It is important to understand why you want to grow wine grapes and perhaps even establish a winery because a significant financial and personal commitment is necessary. The most productive and successful vineyards are those that have been well planned from the start and in which risks have been minimised. Growing wine grapes is a challenging and rewarding enterprise, but it is a cash-hungry and relatively high cost operation.

The current high prices for wine grapes have led some prospective growers to enter the industry in expectation of high returns. It is the buyer, however, who determines the price paid for quality wine grapes or the wine, not the producer. Production of premium wines which sell for more than \$10 a bottle requires delivery of high quality fruit to winemakers. Low or inferior quality fruit will not attract high prices.

Profit is also linked to tonnage grown. The bigger the crop the easier it is to manage lower prices. High returns for grapes are often necessary for long term profitability because of the small tonnage grown. However, a high price expectation demands the production of quality grapes. A larger vineyard, or one where the grower is also the winemaker, has greater flexibility in handling lower quality grapes than a small vineyard. A bigger winemaker can choose to produce a lower quality wine style and sell it at a lower price to match this quality.

Queensland's hot, summer-rainfall climate means it is not easy to grow high quality grapes. Management has to be first class. Timely control of pests, diseases and weeds; access to labour and equipment at pruning and harvest; and an adequate supply of good quality water are essential.

more info



Choosing varieties
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Although a wide range of wine grape varieties can be grown in Queensland, some do far better than others in different locations. The choice of red and white variety, and rootstock, for a particular growing region is a complex one and we refer you to Section 3 *Growing the crop* and Section 4 *Key issues* for more detail.

Before planting it is important to establish a market for your grapes by contacting wineries in Queensland and in the southern states. They will let you know what varieties the market wants.

We recommend that you research wine grape growing extensively and prepare a thorough business plan before you start planting vines or even buying land.

What you can expect to make

Yields

Experience in Queensland shows that yields of 7 to 10 tonne per hectare of high quality fruit are achievable in the Granite Belt. In warmer areas with deeper more fertile soils, higher yields of 15 to 20 t/ha could be expected.

Management to force significantly higher yields than these can produce poorer quality fruit which does not attract premium prices.

Prices

Prices for Australian wine grapes have been high since 1994, but are expected to decrease slightly by 2000 as the supply of good quality fruit increases. A sound conservative budgeting figure is \$800 to \$1000 per tonne for high quality fruit. At times the spot market for premium fruit may attract higher prices, but inferior fruit will attract lower prices.

Production costs

Production costs, including operating costs and fixed overheads, of \$5000 per hectare or \$550 to \$650 per tonne are achievable in the Granite Belt. In some wet years when disease and weed pressure is high, costs may increase to \$7000 per hectare.

There is no documented information available from new wine grape regions in Queensland. Potential wine grape growers in warmer, wetter and more fertile areas may expect costs to be as high as \$10 000 per hectare.

Income

If strong rooted vines are planted and well managed, a small crop and income can be expected in the third growing season. In more vigorous situations, a small crop may be achieved in the second year, but should not be budgeted for until the third year. The expected income





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from wine grapes after production costs are met, and assuming average yields and prices, is about \$3000 to \$6000 per hectare. Break even is usually not achieved before the seventh year and may be as late as the tenth year.

The capital you need

To set up

It costs approximately \$25 000 per hectare to establish a vineyard, excluding the cost of land, roads, power, dams, windbreaks, extensive land clearing and equipment. Some set up costs are shown in Table 1.

Table 1. Approximate set up costs for a vineyard

	Item	Approximate cost
Preliminary planning	e.g. soil and water surveys, contour survey	\$500 per hectare
Land preparation	ripping, levelling, fertiliser, lime, weed control	\$2000 per hectare
Vines	(depending on numbers of plants per hectare) own rooted	\$1. to \$1.50; \$2500 per hectare
	grafted	\$3 to \$5 per vine; \$7000 to \$11 000 per hectare
Irrigation	purchase and installation of a drip system, pumps, filters and headworks	\$7000 per hectare
Trellis	a cheaper trellis could be built, but this may result in extra labour costs of canopy management and poorer quality fruit	\$6000 to \$8000 per hectare installed
New machinery	costs for a 10 ha vineyard	May range from \$40 000 to \$95 000

Later on

Development costs which may arise after initial establishment of the vineyard include:

Replacement of vines that failed to establish (\$750 per hectare assuming failure rate of 5%).

Sundry machinery purchases (\$700 a year).

If irrigation and trellis systems have been installed correctly they will not need replacement for at least 20 years provided they are maintained regularly.

Equipment will need upgrading from time to time.

The farm you need

Soil

A well drained soil of 350 to 600 millimetres depth is required. Excessively fertile soils are not desirable because vines grow more rapidly and are more difficult to manage. Acidic or very low fertility soils are less desirable, but can be corrected.

It is essential to conduct a detailed soil survey to determine depth, texture, and water-holding capacity, and identify variations across the farm.

It is advisable to do a nematode test because nematodes (microscopic parasites of grape roots) are prevalent in soils throughout Queensland.



Sampling for nematodes
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Climate

The preferred site should be free from spring frosts and protected from wind. Cool and relatively dry weather during ripening (late January to April) is important. Cool weather slows ripening and helps development of flavour in grapes and therefore the wine.

A simple index for assessing a site's ripening period is the average of daily maximum and minimum temperatures during January. This information can be obtained from the Bureau of Meteorology or local agricultural research centres with weather stations. Use Table 2 to assess your site.

Table 2. Assessing a site's ripening period

Average January temperature	Ripening period
Greater than 21°C	Hot
19 to 21°C	Warm
17 to 19°C	Cool
Less than 17°C	Cool

Dry conditions during ripening reduce the incidence of berry splitting and bunch rots. To assess dryness, take account of total rainfall, number of wet days and relative humidity during ripening.

Avoid high risk hail areas. Districts with high rainfall during budburst to flowering (September to November) are less desirable.

Slope and aspect

Avoid slopes greater than about 20%. Steep slopes increase erosion risks. Additional earthworks will be necessary on steep slopes to minimise this risk. Slopes must also allow the safe use of machinery.

Aspect refers to the direction a slope faces. In Queensland, aspect does not limit wine grape growing. North and east facing slopes are warm and advance harvest time while south and west facing slopes are cooler and delay harvest time.



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Water

A survey of available water supplies is necessary. This should include a study of the water catchment area (both on and off-farm) feeding on-farm storages, as well as the quantity and quality of water available. Water sources may include bores, rivers and on-farm dams. Check with the Queensland Department of Natural Resources for status and/or availability of pumping licences on any streams.

As a guide, you will need 3 to 5 million litres of storage per hectare of vineyard or a bore flow rate of 1500 L per hour per hectare of vineyard. Avoid water with a total salinity greater than 2000 microSiemens per centimetre (1200 milligrams per litre, mg/L), a sodium content greater than 450 mg/L (20 milliequivalents, meq/L), or a chloride content greater than 150 mg/L (4 meq/L). If overhead irrigation is used for watering or frost control, sodium and chloride content should not exceed 100 mg/L (3 meq/L).

Services

Access to facilities such as power, phone, transport and farm suppliers is needed. Close proximity to the winery allows for prompt processing of grapes soon after harvest and helps communication between grower and winemaker.

Previous land use

Knowledge of previous land use on the farm is important. Agricultural chemicals such as Tordon®, Glean® and organochlorines can persist in soils and adversely affect vine growth. They may limit access of wine into export markets.

Badly eroded land should be avoided as it is costly to repair.

Populations of nematodes damaging to grapevines can build up on crops such as tomatoes or legumes that may have been grown previously.

Other requirements

Avoid districts where hormone herbicides (2,4-D) are commonly used with cereal cropping. Vineyards should be no closer than 10 kilometres from such areas.

Avoid heavily timbered sites where birds may be a problem, unless you are prepared to invest in bird netting.

It is important to be close to a reliable source of casual labour for vine training, pruning and harvesting.

The machinery you need

Essential

Here is a list of the essential equipment required and an indication of prices.

Table 3. Essential equipment

Equipment	Approximate cost
Tractor. 40 kW to 70 kW with machine pruning and harvesting in mind.	\$40 000 to \$60 000
Slasher/mulcher. Consider side throw units which lay mulch under vines.	\$5000
Fungicide spray unit. A range of modern air blast sprayers is available. These help with crop protection in an efficient manner, leading to high quality fruit. Older style machines are not recommended.	\$10 000 to \$15 000
Herbicide spray unit. A unit capable of boom and spot spraying is required. A covered unit for spraying the midrow during the growing season may be considered.	\$5000 Covered unit \$4000
Vine trimmer	\$3000 to \$6000
Harvesting equipment (bins, trailers, buckets, snips). The equipment depends on destination of fruit and the crushing arrangements with the winemaker. If you intend machine harvesting, allow for the costs of tipping bin trailers. The number depends on the size of the vineyard.	\$10 000 Equipment for machine harvesting may cost up to \$20 000

Optional

Other equipment needed from time to time, but which can be hired or supplied by a contractor, includes fertiliser spreader, seeder, posthole auger and wire spinner.

A 4WD motorbike, costing \$6000 to \$8000, will make it much easier to inspect and manage your vineyard.

Labour considerations

The work involved

Setting up a vineyard involves land preparation, erecting trellises, installing an irrigation system and planting vines. For the first two years, vines need training every two to three weeks during spring and early summer, and regular application of chemicals for disease and pest control. In mature vines, there is winter pruning, at least fortnightly chemical spraying for most of the growing season as well as normal fertilising and watering requirements.

For best berry (and hence wine) quality, fruit must be harvested as quickly as possible once it has reached the maturity the winemaker desires. This means harvesting is usually within three to four days. It

is cost effective to have contractors carry out all operations, especially the installation of trellises and irrigation. Table 4 gives estimates of time and labour requirements for vineyard operations.

Table 4. Time and labour requirements for vineyard operations

Operation	Time/labour requirements
Planting vines	150 to 200 vines per day
Erecting trellis:	
installing end assemblies	100 to 140 hours per hectare
installing intermediate posts	20 to 50 hours per hectare
installing wires	20 to 30 hours per hectare
Installing irrigation	120 to 160 hours per hectare
Training young vines	140 to 180 hours per hectare
Hand pruning	250 to 500 vines per day per person
Moving foliage wires	10 to 20 hours per hectare per year
Slashing/spraying/shoot trimming	40 to 50 hours per hectare per year
Hand harvesting	300 to 500 kilograms per day per person



The labour you need

Two full time people can effectively manage a vineyard of up to 20 ha with casual labour employed to assist with trellis erection and during pruning and harvesting. A vineyard of 40 ha would require an additional permanent employee while two to three additional permanent staff would be required for an 80 ha development. These numbers can be reduced by one if the vineyard is highly mechanised.

Many vineyards are established by owners with other occupations. In these situations engage a manager to maintain a day to day oversight of the vineyard. Consultants and/or contractors may be hired to supervise operations.

Other considerations

Management skills

You will need the skills to manage casual labour effectively. An interest in and knowledge of quality management, marketing, and financial management and bookkeeping are desirable.

Organic viticulture

Organic wine grape growing in Queensland is extremely risky and not considered economically viable for the production of quality grapes and wine. Copper and sulphur fungicides are permissible in an organic pest control system, but they control only downy and powdery mildew. Control measures for Botrytis, Phomopsis and black spot which would be permissible are not available. Weed control is difficult and rarely effective. Non-chemical measures available for weed control include cultivation, hand hoeing, mowing, whipper snipping and steam.

more info



Consultants
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