

Wine grapes information kit—update

Reprint – information current in 1998–9



REPRINT INFORMATION – PLEASE READ!

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This publication has been reprinted as a digital book without any changes to the content published in 1998–9. We advise readers to take particular note of the areas most likely to be out-of-date and so requiring further research: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- Financial information—costs and returns listed in this publication are out of date.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 1998–9. 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.

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Queensland Government

Wine Grape Information Kit Annual Update 1998/99

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Introduction

Welcome to the 1998/99 edition of the *Agrilink Wine Grape Information Kit Annual Update*. This is a special service provided to registered purchasers of the *Agrilink Wine Grape Information Kit* published in November 1997.

This update provides you with any significant changes to the content of the Agrilink information kit since it was published. It does this by giving you a broad overview of the changes in each section, and then providing the specific change page by page.

The booklet is designed to fit into the front pocket of the Agrilink information kit so that it is available for reference whenever you use the kit.

Thank you for being an Agrilink customer. We look forward to continuing to serve you with quality information products.

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Before you
START

Overview of the 1997–98 season

The area of wine grapes planted in Queensland continued to increase significantly during 1998. There are an estimated 230 ha of bearing vines with a further 270 ha of vines planted but still to come into production. Further growth is forecast for at least the next three years. The Granite Belt and Burnett Valley are the major production areas in Queensland.

An important feature was the commencement of several large vineyard and winery developments in both major production areas. Smaller vineyards, which characterised the Queensland industry in years past, continue to be planted, especially in coastal and subcoastal areas.

Availability of quality planting material is still a big problem for the Queensland industry. The Queensland Vine Improvement Association has been established and will start to supply certified planting material to local nurseries over the next three to five years.

Queensland's production was estimated to be 400 tonnes in 1998. This represents a slight decrease in overall tonnage of grapes from the previous year.

Damaging hailstorms and dry conditions in the Granite Belt led to shortages of most varieties, which offset increases in production in other regions. In the Burnett Valley, instances of overcropping coupled with overcast weather after veraison limited the ability of some later varieties to ripen fruit to higher sugar levels.

Birds continue to be a major problem in all production areas, with netting proving to be the only consistent control method. Bird damage also led to greater losses to *Botrytis* and bunch rots.

Demand for wine grapes is still increasing but only a small number of new wineries are being established. There is a likelihood of oversupply in the next three to five years unless processing capacity increases significantly. Stringent quality standards are being imposed by some wineries, with heavy discounting and in some cases rejection of fruit that does not come up to specification. Prices for premium varieties were comparable or only slightly lower than previous seasons. There is an expectation that increasing supplies of fruit will see greater differentials in price according to grape quality, with poorer quality fruit likely to attract lower prices.

Specific updates

What you can expect to make (page 3)

Yields

In the warmer growing areas, with deeper more fertile soils, yields of up to 15 t/ha can be expected. It is best to limit yields to 15 t/ha to achieve good quality grapes to avoid penalties from winemakers. Quality could be at risk with higher yields, especially for newer growers.

The capital you need (page 4)

Table 1. Approximate set up costs for a vineyard

Own rooted vines cost \$1 to \$1.50 per vine.

Grafted plants cost \$3 to \$5 per vine.

Vine guards cost about \$1 per vine or \$1500 to \$2000/ha.

Netting costs for bird control

Type	Cost per hectare	Cost per metre
Disposable individual row	\$ 1100	\$ 0.40
Long life individual row	\$ 5000	\$ 2.00
Total enclosure	\$ 30 000	Not applicable

Electronic bird scarers. There are various units that will cover from 2 to 4 ha. Costs range from \$1000 to \$7000 per unit.

Previous land use (page 6)

Previous land use. Be careful that purchased mulches do not contain chemical residues (for example Tordon, glyphosate or organophosphates) and be wary of chemicals that were used to kill woody weeds on the property before it was planted to vines.

Labour considerations (page 8)

Table 4. *Time/labour requirement for planting vines*

One person should be able to plant 150 to 200 vines per day.



Common **QUESTIONS**

Specific updates

What is the future of the Australian wine grape industry? (page 3)

Prospects for the Australian industry still appear optimistic although some cautionary comments have appeared due to the increased rate of expansion. At present, the Australian industry is estimated to be 95 000 ha of vineyard producing 980 000 tonnes of fruit. The rate of vineyard plantings has increased from 2000 ha per year in 1992 to 7000 ha per year in 1997. At this higher rate, Australian production is expected to top the million tonnes by 2001. The industry is expanding significantly in all states, with red varieties experiencing a larger increase than white varieties. Prices for premium varieties continue to be buoyant, with high quality fruit attracting returns exceeding \$1500 per tonne.

The cautionary comments appearing within the industry are related to the dependence on exports to provide a market for Australian wine. Domestic consumption is increasing slowly but at a lower rate than the increase in wine quantity available. Favourable exchange rates are supporting exports to the UK and USA, with Japan also showing a record increase in consumption of Australian wines in 1998. However, competition from developing regions such as South America, New Zealand and South Africa will make such increases more difficult to sustain.

Of particular concern is the number of new vineyards being developed without winery contracts. It is estimated some 90 000 tonnes of fruit Australia-wide will come onto the market uncontracted over the next three to four years. While winemakers have indicated that they are looking to increase intake of fruit to

1.4 million tonnes by 2001, most medium to large wineries have enough fruit to meet their needs for the next five years. The result of a large amount of fruit on the open market will be a decrease in prices (especially for white varieties) and an emphasis on quality.

Who can I sell my grapes to? (page 7)

As more wine grapes are being grown, wine makers are becoming more specific about quality. Be sure to establish a firm relationship or contract outlet for your grapes.



Growing the **CROP**

Vine guards. Synthetic vine guards at planting are optional but a good idea. Their main advantage is to remove the need for manual training of young vines around a stringline, thus reducing time and labour costs. They protect the young vine from herbicide drift and reduce lateral growth of suckers, as well as preventing damage from rabbits, wallabies and other animals. The warmth trapped inside the guards increases growth rate and there are also claims that they could reduce disease and pest levels.

Use opaque (white) or green translucent vine guards. Do not use clear plastic guards because they can contribute to heat/burn stress on the young plants.

Time of planting is an important consideration in the use of vine guards in Queensland's wet summer. Ideally, vines should be planted by early spring (September). Later plantings, where vines are established under wet, humid conditions, may result in fungal diseases such as sclerotium becoming a problem in vine guards. Once vines emerge from the top of guards and are attached to the fruiting wire, guards can be removed and such diseases seldom occur.

Specific updates

Test for nematodes (page 4)

There are two tests for nematode analysis—a screen test and a bioassay. The screen test is simpler and quicker, but it is not as accurate as the bioassay. For a screen test you will need to supply 500 g of soil (about 300 mL) and 100 g of grape roots if available. If a bioassay is required you will need to supply 3 to 5 kg of soil (about 1.5 to 3 L). Some private laboratories, as well as DPI (Section 3 page 4 of the kit), offer these tests (see *Contacts* on page 24).

If test results detect any nematodes, use nematode-resistant rootstocks. If you plan to be a long-term commercial wine grape grower, use rootstocks (grafted vines), but they do double or treble the planting costs.

Mulches. To avoid introducing nematodes to the vineyard or adding to the existing population, do not use mulches which contain nematodes (for example peanut trash). If you suspect nematodes in the mulch, test it.

Choose rootstocks (page 6)

We now recommend using rootstocks that are resistant to phylloxera for all wine grape production in Queensland.

Table 3. The following guidelines can be added to the existing table for selecting a rootstock

Guidelines	Rootstock
For moderate to high vigour varieties on moderate to high vigour sites (deep fertile soils, warm growing conditions, good rainfall)	Schwarzmann
Where irrigation is limited	110 Richter
For areas with good irrigation	99 Richter

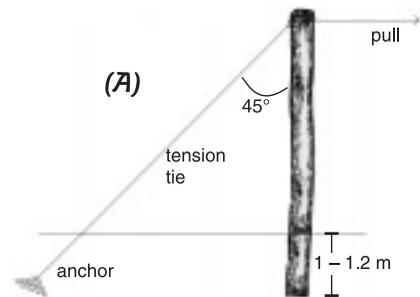
Design the trellis (page 10)

To decide which trellis type to use, seek help from a wine grape consultant or specialist, or refer to *Sunlight into wine—a handbook for canopy management* by R.E. Smart and M. Robinson.

The illustrations in Figure 3—Options for end of row assemblies (page 12 of the kit) have been modified as follows.

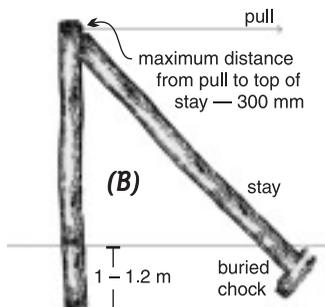
Anchor post (A)

Some wine grape growers prefer to tie the top of a post to a soil anchor, at a tie angle of 45° , to increase the load carrying capacity above that of a single post. The tension tie does not intrude into the growing zone and this is an advantage for mechanical pruning and harvesting.



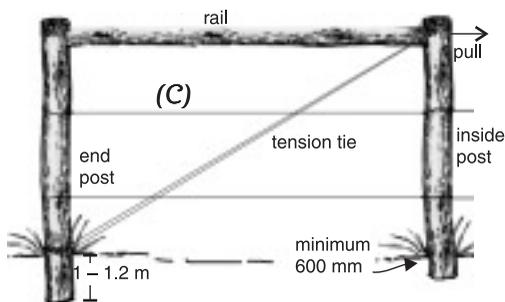
Post and stay (B)

The addition of a stay to the single post significantly increases the load carrying capacity of the assembly. For reasons of tradition or convenience, stays are usually attached part way up the posts. However, it is important that the stay is attached to the end post not less than 300 mm below the top wire, otherwise the end post is likely to lever out of the ground and the assembly will fail.



Post and rail (C)

Various configurations of the post and rail are widely used and are claimed to have some advantages. In theory, at least, if a strong tie is used to carry the design load and there is no soil movement, then this assembly should carry a much higher load than the other types illustrated. Assembly strength is not increased by installing the inside post any deeper than 600 mm, thus saving construction costs and time.



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Watering system (page 13)

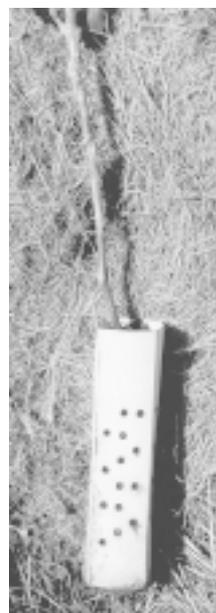
When the irrigation system is being designed, include an emitter (dripper) at the vine site at planting to ensure the root system is watered.

Planting vines (page 21)

Planting container-grown vines

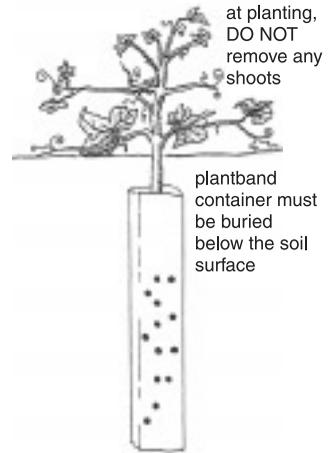
Planting plantbands (photo of plantband at right)

Many grape vine nurseries now raise young vines in a biodegradable container called a plantband. This bottomless container has holes in the sides and the whole container and plant are planted (the plant is not removed for planting). The young plant has a variable number of shoots and leaves.

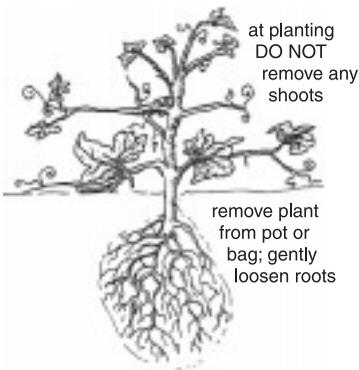


Plantband plants need more care at and after planting than dormant bare rooted vines or those that are grown in larger containers (right: plantband plant).

- There must be good firm contact with the soil around the plantband.
- Before planting, thoroughly soak plantbands.
- The top of the plantband must be planted below the level of the soil surface to prevent excessive moisture loss from the potting mix that is used.
- Leave all shoots on vines at planting. Once new growth has started, indicating that vines have established, then the best one or two shoots can be selected for training and the others removed (see notes on training on page 26 of the kit).



Planting plantband plants



Planting other container grown vines

Planting other container-grown vines

For planting other types of container-grown vines, see page 22 of the kit.

A ripper (Section 3 page 22) can be used to dig the planting furrows. Roughen the sides and bottom of the holes with a crowbar.

Do not use posthole diggers or augers to dig the planting hole. Alternatives for increasing the speed of planting are tractor-mounted implements, which open up a furrow, or hand-held water jets, which create individual planting holes.

Trim and prune dormant bare-rooted material before planting (see Figure 9, page 23 of the kit).

Train vines—first growing season (page 27)

Dormant bare rooted material

At planting dormant young vines should have been pruned back to two buds and all other shoots removed.

Training container-grown material

Plantband plants and other container-grown rootlings/graftlings are pruned somewhat differently during the first growing season.

Do not prune back to two buds and remove all other shoots until the plants are well-established and showing strong active growth. Leave 8 to 10 cm of short growth and then thin extra shoots (see Figures 9a and 9b below).

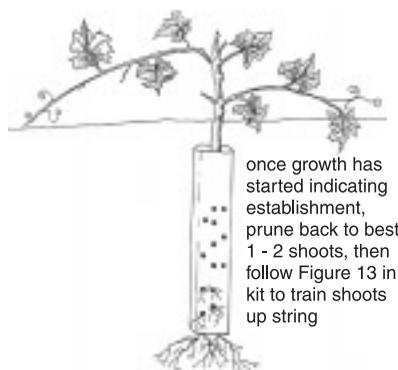
For both dormant bare-rooted material and container-grown material, attach a length of strong string or twine to the stub of an old shoot that was removed previously and the cordon wire. Never tie string around living parts of vines as it will quickly strangle them. If there is no suitable attachment point on the vine and/or the graft union is not sufficiently strong, use a clip inserted in the ground to secure the string tautly.

Rootling/graftling/plantband/container-grown plants. When the two shoots are 20 to 30 cm long with 8 to 10 full sized leaves each, select the strongest and preferably the most vertical-growing shoot (called the best shoot).



once growth has started indicating establishment, prune back to best 1 - 2 shoots, then follow Figure 13 in kit to train shoots up string

Figure 9a. Training of strong vigorous container-grown vines after establishment

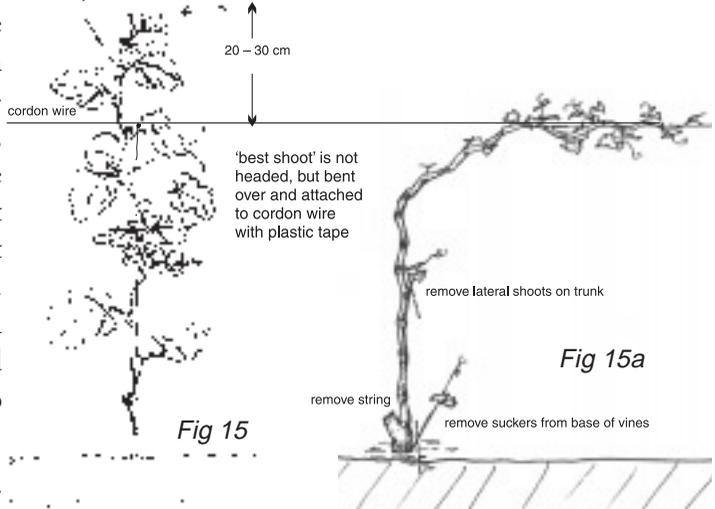


once growth has started indicating establishment, prune back to best 1 - 2 shoots, then follow Figure 13 in kit to train shoots up string

Figure 9b. Training plantband vines after establishment

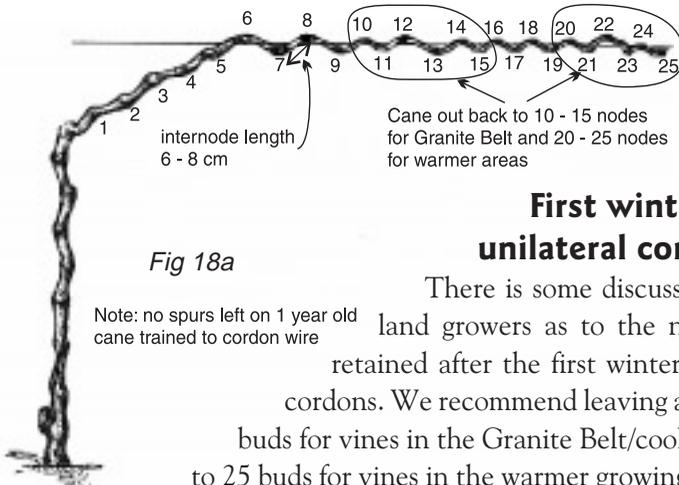
Training vines to unilateral cordon

Many growers, particularly in the Burnett Valley, are training vines to a unilateral framework (see Figure 11, page 26 of kit). The young vine is not headed once it reaches the wire. When long enough it is bent over and attached lightly to the cordon wire.



For training a unilateral cordon, the

best shoot is not headed (cut off) but allowed to grow—see Figure 15 (left illustration only) on page 29 of the kit and Figure 18 below.



First winter pruning of unilateral cordons (page 30)

There is some discussion amongst Queensland growers as to the number of buds to be retained after the first winter pruning of unilateral cordons. We recommend leaving a maximum of 10 to 15 buds for vines in the Granite Belt/cool growing areas and 20 to 25 buds for vines in the warmer growing areas (Figure 18a). If too long a length of cordon is left with too many buds, there is a risk of blind or bare spots occurring along the cordon. This is especially a problem with verdelho, semillon, cabernet and merlot varieties.

Note: no spurs left on 1 year old cane trained to cordon wire

Second growing season (page 32)

Many growers want to produce a crop as soon as possible. If the shoots are strong and solid (4 to 6 mm thick) we recommend that growers remove all but one bunch per shoot in the second growing season. If the shoots are weak and spindly, remove all bunches to thicken the shoot and produce a healthy spur in the second winter.

Manage pests and diseases (page 36)

Diseases

Protectants and pre-infection strategies

Protectant chemicals (for example mancozeb or sulphur) form a protective barrier over plant surfaces, preventing infection. They will not control an infection after it has occurred. Therefore, it is important to apply protectants one to two days (at most) before wet weather is expected and to reapply them if the rain was heavy enough. If you believe rain has reduced coverage, reapply protectants as soon as possible.

When plant growth is rapid (as often happens in spring), protectant fungicides for diseases such as black spot, downy and powdery mildew must be applied frequently enough to maintain a protective cover against infection.

Eradicant fungicides and post-infection strategies

Post-infection control involves using chemicals that can eradicate diseases after the infection has occurred. If a post-infection strategy (based on eradicant chemicals) is being used for disease control, apply sprays within three to five days of the infection event (the wet conditions causing the disease infection).

Blackspot, Phomopsis, downy mildew

If blackspot alone is the problem, use ziram at budburst and two weeks after. Further sprays at 7 to 14 days may be needed if wet weather persists.

If Phomopsis and blackspot are a problem, use dithianon (Delan). Mancozeb can be used at budburst and two weeks after but it is slightly less effective than Delan. Further sprays may be needed at 7 to 14 days if wet weather persists.

If you are trying to control blackspot and/or Phomopsis and/or downy mildew, the best protectant is Delan, then Mancozeb.

Birds

Birds are a major problem and the best way of keeping them out of vines is to use netting. Although more growers are using netting, growth can become tangled in it. Netting costs per hectare vary depending on hole size (15 or 20 mm) and how many rows are covered at one time. Fifteen millimetre netting is about 25% more expensive than 20 mm netting. Covering one row with 6 m of netting is about 25% more expensive than covering two rows with 9 m of netting. For example to cover 1 ha of rows planted 3 m apart and about 2 m high, it would cost:

- about \$6500 to cover one row at a time (about 3000 lineal metres of 20 mm net 6 m wide)
- about \$4500 to cover two rows at a time (about 1650 lineal metres of 20 mm net 9 m wide).

Nutrition (page 42)

Tissue analysis. Petiole samples for tissue analysis should be taken yearly for each major variety to help plan the fertiliser program.

Soil analysis. These analyses can be made every two years rather than every year for the first two to three years as recommended in the Agrilink kit.

Irrigation (page 44)

At veraison. The amount of water to apply to vines at veraison has changed to 100 to 200 L of water per vine per week in two to four applications. Use the higher frequency on sandier soils.

Table 5. Post-emergent contact herbicides registered for use in vineyards (Section 3 page 48)

Add: paraquat (Maxitop 250)

Table 6. Pre-emergent herbicides registered for use in vineyards (Section 3 page 48)

Add:	Chemical	Product
	diuron	(Striker 550 SC)
	oryzalin and simazine	(Flandor not Flancor)
	Oxyfluorfen	Spark
	simazine	Simanex 900 WG

	Chemical	Product
	trifluralin	Triflurex
	trifluralin	Tridan (not Tirdan)
Delete:	pendimethalin	Stomp, (retain Stomp 330E)

Table 7. Post-emergent systemic herbicides registered for use in vineyards (Section 3 page 49)

Add:	Chemical	Product
	haloxyfop	Typhoon 130
Delete:	glyphosate	Glypho and Glyphoz

Disease and pest control (page 50)

Table 8. Chemical groups of *Botrytis fungicides* (page 52)

Add:	Chemical group	Fungicide
	dicarboximide	Captan WG, Merpan 800 WG
	biological	Trichodex

In Table 8 of the kit, the chemical group chlorothalonil is a substituted aromatic. The fungicide is Bravo.

The biological control agent *Trichoderma* fungus, sold as Trichodex, can be used to control Botrytis, especially to reduce the risk of developing resistance to eradicant fungicides. Its usefulness, however, is limited to low levels of Botrytis. Use Trichodex at 10% flowering and again at veraison.

There are four chemical groups of fungicides, excluding *Trichoderma*, to control Botrytis. Do not use more than two consecutive sprays from any one group during your spray program to prevent resistance developing.

Do not use more than two consecutive sprays from any one group during your spray program in the same season.

Table 9. Suggested rotation of fungicides in an annual Botrytis spray program to prevent resistance developing (page 52)

Add:

At flowering (10–20% capfall) use Bravo or Trichodex.

At veraison use Trichodex.

Budburst

If blackspot alone is the problem, use ziram at budburst and two weeks after. Further sprays at 7 to 14 days may be needed if wet weather persists.

If Phomopsis and blackspot are a problem, use dithianon (Delan). Mancozeb can be used at budburst and two weeks after but it is slightly less effective than Delan. Further sprays may be needed at 7 to 14 days if wet weather persists.

Protectants

Also see comments on *Manage pests and diseases* on page 17 of this update.

It is important to apply protectants one to two days (at most) before wet weather is expected and to reapply them if the rain was heavy enough. If you believe rain has reduced coverage, reapply protectants as soon as possible. Apply protectants in spring when growth is rapid. Good regular coverage of new and expanding foliage is vital.

If bud mite is a problem at budburst, use lime sulphur.

Two weeks after budburst to flowering

Two weeks after budburst to flowering (page 52)

- If blackspot alone is the problem, use ziram at budburst and two weeks after. Further sprays at 7 to 14 days may be needed if wet weather persists.
- If Phomopsis and/or blackspot are a problem, use dithianon (Delan) at 10 to 14 days if the weather is humid or wet. Mancozeb can be used at budburst and two weeks after but it is slightly less effective than Delan. Further sprays may be needed at 7 to 14 days if the weather is wet or humid.
- Eradicants such as Ridomil, Galben, Fruvit and Recoil should be used within three to five days of a downy mildew infection event (wet or humid weather).
- If using phosphorous acid, use the correct rate and spray within three to five days of wet or humid weather. Dose according to the size of the vines—as vines grow bigger use higher rates. If phosphorous acid is not giving proper control, you are probably using too low a rate; increase the application rate per hectare.

At two, four and six weeks after budburst, apply wettable sulphur for control of powdery mildew (page 52)

- Wettable sulphur can be used as a protectant spray at two, four and six weeks after budburst to control powdery mildew but do not use within 30 days of harvest because it can adversely affect fermentation of the grapes.
- The effectiveness of wettable sulphur is best when temperatures are between 25° and 30°C. Control may be reduced at temperatures below 15°C. Phytotoxic burn of leaves and shoots may occur at temperatures above 32°C.
- If a powdery mildew outbreak occurs which cannot be controlled with wettable sulphur, immediately apply two sprays of a demethylation inhibitor (DMI) chemical (flusilazole, penconazole, hexaconazole, triadimenol and fenarimol) seven days apart. Return to the use of wettable sulphur as the basis for the control program.
- An alternative to the use of wettable sulphur is to wait until powdery mildew symptoms are observed then immediately apply two sprays of a DMI chemical seven days apart. This approach is more feasible where powdery mildew has not been a problem in previous seasons. The disadvantages with this approach are its reliance on monitoring to detect an infection outbreak and managing the application of the limited number of sprays recommended per season when using DMI chemicals.
- Do not mix wettable sulphur with a DMI chemical.
- Be aware that Benlate used to control Botrytis will also control powdery mildew.

When shoots are 15 to 20 cm long, apply chlorothalonil to control downy mildew and Botrytis (page 53)

- Eradicants such as Ridomil, Galben, Fruvit and Recoil should be used within three to five days of an infection event (wet or humid weather).
- If using phosphorous acid, use the correct rate and spray within three to five days of wet or humid weather. Dose according to the size of the vines—as vines grow bigger use higher rates. If phosphorous acid is not giving proper control, you are probably using too low a rate; increase the application rate per hectare.

During flowering (page 53)

- If there are low levels of Botrytis at flowering (10–20% capfall), *Trichoderma* can be used to avoid build-up of resistance to other fungicides.

- If powdery mildew was a problem in the previous season or if it was observed before flowering, apply two DMI sprays 7 to 14 days apart. The first spray is applied just before or at the start of flowering. The smaller interval is used in warm areas where the length of flowering is shorter.

Fruit set to harvest (page 53)

- Outbreaks of rust mite late in the season are common, particularly in the Granite Belt. Symptoms are seen when it is often too late to apply sulphur. Monitor rust mite numbers after fruit set, then if necessary apply sulphur before veraison. Remember the rate of sulphur for rust mite control is twice that for powdery mildew control, hence regular sprays for powdery mildew may not provide adequate control of rust mite.
- If there are low levels of Botrytis, *Trichoderma* can be used at veraison.

Four to six weeks before harvest monitor for Queensland fruit fly (page 54)

There have been changes to Queensland fruit fly (QFF) control. Start monitoring for QFF from veraison on.

- If using a control program based on bait sprays, start spraying when monitoring indicates male fruit flies are found in the traps. Apply bait sprays weekly if more than 10 male QFF's per week (not 40) are found in traps.
- Or use a suitable insecticide from the *Problem solver handy guide*.

Harvest to leaf fall (page 54)

Black spot and powdery mildew should not be a problem if control is achieved early in the season. Ongoing control of downy mildew, black spot and Phomopsis is important to reduce potential problems for next season's growth and to limit problems in the current season.

Canopy management during growing season (page 58)

Leaf removal

Queensland grape growers are suggesting that the best time to remove leaves is about two weeks before veraison, rather than two to four weeks as indicated in the Agrilink kit.



Problem **SOLVER**

Spots on leaves—phomopsis (page 2)

Delan is better than mancozeb for control of Phomopsis.

Spots on leaves—downy mildew (page 2)

The rate of phosphorous acid is very important for effective control of downy mildew. See page 21 of this update.

Greyish white powder on leaves—downy mildew (page 3)

The rate of phosphorous acid is very important for effective control of downy mildew. See page 21 of this update.

Distorted leaves—bud mite (page 6)

If bud mite was a problem during the previous season, apply one spray of lime sulphur at budburst.

Spots or cracks on spurs—Phomopsis (page 8)

Delan is better than mancozeb for control of Phomopsis.

Discoloured or rotting berries—downy mildew (page 10)

The rate of phosphorous acid is very important for effective control of downy mildew. See page 21 of this update.



Contacts and **REFERENCES**

Specific updates

Laboratories

Graham Stirling

Biological Crop Protection

3601 Moggill Road,

MOGGILL QLD 4070

Ph/fax: (07) 3202 7419; Mobile: 0412 083 489

Agritech Laboratory Services

PO Box 549

TOOWOOMBA QLD 4350

Ph: (07) 4633 0599; Fax: (07) 4633 0711

Educational institutions (page 4)

Add:

Charles Sturt University

For details of viticulture/winegrowing courses and single subject study at CSU, contact:

Joy Dick

Ph: (02) 6933 2364; Fax (02) 6933 2107

e-mail: jdick@csu.edu.au

For details of wine science courses at CSU, contact:

Malcolm Allen

Ph: (02) 6933 2433; Fax (02) 6933 2107

e-mail: mallen@csu.edu.au

Curtin University in Western Australia also provides training in viticulture. For details, contact:

Academic Officer

Muresk Institute of Agriculture

Curtin University of Technology

NORTHAM WA 6401

Ph: (08) 9690 1576; Fax: (08) 9690 1500

Freecall: 1800 246 622

e-mail: course@muresk.curtin.edu.au

For Muresk course details, also see:

www.curtin.edu.au/curtin/dept/io/

Curtin University of Technology

Associate Degree in Viticulture

GPO Box U1987

PERTH WA 6845

Ph: (08) 9266 2294; Fax: (08) 9266 3063

e-mail: crossent@muresk.edu.au

Dalby Agricultural College

PO Box 398

DALBY QLD 4405

Ph: (07) 4662 3566; Fax: (07) 4662 4048

e-mail: dacadmin@peg.apc.org

Murrumbidgee College of Agriculture

Viticulture Short Courses

Private Mail Bag

YANCO NSW 2703

Ph: (02) 6951 2696

Sunraysia Institute of TAFE

Mildura Campus

PO Box 1904

MILDURA VIC 3502

Ph: (03) 5022 3666; Fax: (03) 5022 3600

The University of Melbourne

Institute of Land and Food Resources
Dookie College
SHEPPARTON VIC 3647
Ph: (03) 5833 9200; Fax: (03) 5833 9201

Vine improvement organisations (page 8)

Add:

Queensland Vine Improvement Association

Peter Watters (Secretary)
New England Hwy
BALLANDEAN QLD 4382
Ph: (07) 4684 1310; Fax: (07) 4684 1147; Mobile: 015 583 194

MIA Vine Improvement Society Inc.

Jeremy Cass
Ph: (02) 6968 1202; Mobile: 015 759 094
New address:

Riverland Vine Improvement Committee

PO Box 292
MONASH SA 5342
Ph: (08) 8583 5366; Fax: (08) 8583 5504

Queensland wineries (page 9)**Barambah Ridge**

PO Box 108
MURGON QLD 4605
Ph: (07) 4168 4766; Fax: (07) 4168 4770

Boireann

Donnellys Castle Road
THE SUMMITT QLD 4377
Ph: (07) 4683 2194

Bridgeman Downs

Barambah Road, MS 361

MOFFATTDALE

Via MURGON QLD 4805

Ph: (07) 4168 4784

Canungra Valley Vineyards

Lamington National Park Road

CANUNGRA VALLEY QLD 4275

Ph: (07) 5543 4011; Fax: (07) 5543 4162

Captains Paddock

PO Box 500

KINGAROY QLD 4610

Ph: (07) 4162 4534; Fax: (07) 4162 4502

Catspaw Farms

MS 312

STANTHORPE QLD 4380

Ph: (07) 4683 6229; Fax: (07) 4683 6386

Clovely Estate Ltd

PO Box 2102 BC

TOOWONG QLD 4066

Ph/Fax: (07) 3876 5200

Crane Winery

PO Box 799

KINGAROY QLD 4610

Ph/Fax: (07) 4162 7647

Delaneys Creek Winery

PO Box 87

WOODFORD QLD 4514

Ph: 5496 4925; Fax: (07) 5496 4926

Granite Ridge Wineries

PO Box 104

BALLANDEAN QLD 4382

Ph: (07) 4684 1263; Fax: (07) 3840 7275

Hidden Creek Winery

Nukey Road

BALLANDEAN QLD 4382

Ph: (07) 4684 1383; Fax: (07) 5571 8385

Stuart Range

PO Box 213

KINGAROY QLD 4610

Ph: (07) 4162 3711; Fax: (07) 4162 4811

Consultants (page 12)

Smart Viticulture has a web address: www.smartvit.com.au

Mike Hayes, Viticulturist

PO Box 207

STANTHORPE QLD 4380

Ph: (07) 4681 4332; Fax: (c/- Andrea) (07) 46813265; Mobile: 0417 767 785

Winemaking (page 13)

Add:

Jenny Todd

Barambah Ridge

PO Box 108

MURGON QLD 4605

Ph: (07) 4168 4766; Fax: (07) 4168 4770

Stuart Range

PO Box 213

KINGAROY QLD 4610

Ph: (07) 4162 3711; Fax: (07) 4162 4811

Queensland Government services (page 18)

DPI wine grape extension service

Alex Banks

Applethorpe Research Station, DPI

New England Highway

APPLETHORPE QLD 4378

Ph: (07) 4681 1255; Fax: (07) 4681 1769

Agricultural booksellers (page 19)

Add:

D & A Information Services has e-mail: service@dadirect.com.au

DPI Publications

GPO Box 46

BRISBANE QLD 4001

Ph: 13 25 23 (local call charge in Queensland only)

Fax orders: (07) 3239 6509

e-mail orders: books@dpi.qld.gov.au

Catalogue: www.dpi.qld.gov.au/catalogue/Welcome.html

DPI Notes: www.dpi.qld.gov.au/DPINotes/Welcome.html

Granny Smith's Bookshop

PO Box 27

SUBIACO WA 6008

Ph: (08) 9388 1853; Fax: (08) 9388 1852

e-mail: granny@aoi.com.au

www.aoi.com.au/granny

Landlinks Press

PO Box 1139

COLLINGWOOD VIC 3066

Freecall: 1800 645 051; Fax: (03) 9662 7555; Ph: (03) 9662 7666

e-mail: sales@publish.csiro.au

Morescope Publishing has e-mail: mscope@internex.net.au

NRE Information Centre

8 Nicholson Street (cnr Victoria Parade)

PO Box 500

EAST MELBOURNE VIC 3002

Ph: (03) 9637 8080; Fax (03) 9637 8150

NSW Agriculture

Publications Sales Unit

Locked Bag 21

ORANGE NSW 2800

Ph: (02) 6391 3433

Orders: Freecall: Ph: 1800 028 374; Fax: 1800 642 065

Other books (page 22)

Chemical weed control in the vineyard, Bates, V. & MacGregor, A. (1991) Department of Agriculture, Victoria.

How to use tensiometers, Goodwin, I. (1995) Agnote AG0298, Agriculture Victoria, Institute of Sustainable Irrigated Agriculture, Tatura.

National register of grapevine varieties and clones, Murphy, P.D. (1992) Victorian and Murray Valley Vine Improvement Association, Irymple. ISBN 0646 088 351.

Journals and magazines

The Australian Grapegrower & Winemaker, Ryan Publications
Ph: (08) 8231 6082.

National Grapegrowers. Stock Journal Publishers, Ph: (08) 8372 5222

Useful web sites (also see others in *Contacts* in this update)

Wintetitles: Book on viticulture and oenology and Australian Wine On-Line:
www.wintetitles.com.au/index.html

ABC Rural Link (good links to agricultural and rural sites): www.abc.net.au/rural/link/htm

Commonwealth Government (main entry point): www.fed.gov.au



Problem solver **HANDY GUIDE**

Note these changes for control of pests and diseases of wine grape. This information is taken from the DPI's *Infopest* CD, V2.1. For more information about *Infopest*, ring the DPI's Call Centre on 13 25 23. Callers outside Queensland can ring (07) 3404 6999.

Chemical	Controls	Trade name	Add trade name	Delete trade name	WHP (days)*
<i>Bacillus thuringiensis</i> (Bt)	Grapevine moth, lightbrown apple moth	Full-Bac Novosol	✓	X	N/A
chlorothalonil	Black spot, <i>Botrytis</i> , bunch rots, downy mildew	Checkout 500 SC, Crotop 500, Echo 500 SC, Elect 750, Fung-O-Nil 500	✓		7**
captan Can be used from dormancy to 80% capfall	Black spot, downy mildew, <i>Botrytis</i>	Captan WG, Merpan 800 WG	✓		7 PC ¹
chlorpyrifos	Grapevine moth, lightbrown apple moth, mealybug, scale	Bar, Chlorpyrimax, Optem, Pest One, Protector	✓		14
copper hydroxide		Pirifoz		X	
copper oxychloride		Dry bordeaux		X	
copper oxychloride	Downy mildew	Lancop, Vincop	✓		1
copper oxychloride + metalaxyl	Downy mildew	Axiom Plus and Zee-Mil Plus	✓		7

Chemical	Controls	Trade name	Add trade name	Delete trade name	WHP (days)*
dimethoate	Aphids, Queensland fruit fly, thrips	Dimethomax, Romethoate Danadim	✓	X	7
endosulfan		Bar		X	
iprodione	<i>Botrytis</i> , bunch rots	Civet Aquaflow	✓		7
mancozeb	Black spot	Dek		X	
myclobutanil Can be used from dormancy to 60 days before harvest	Powdery mildew	Mycloss	✓		14 PE ²
petroleum oil	Scale (grapevine)	Pestoil Vicol		X X	
phosphorous acid	Downy mildew	Grow Green Fungex, Phosa Fossic Grow Green Phozacid	✓	X X X	0
propiconazole		Bumper Tilt		X X	
sulphur, dispersible	Blister mite, bud mite, bunch mite, powdery mildew, rust mite	Flowsul, Wettasul, Vinsul	✓		0
triademenol	Powdery mildew	Tridim	✓		7
<i>Trichoderma</i> Can be used from dormancy to harvest	<i>Botrytis</i>	Trichodex	✓		0

*WHP: Withholding period (days). N/A: Not applicable. ** Check the label before use; one product has a 14-day withholding period. PC¹ (protective and curative fungicide). PE² (protective and eradicator fungicide).

These are all the changed items that we are aware of. If there are any additional changes, please contact our Customer Service officer on 1800 677 640 or send fax details to (07) 5444 9694.