

## Cool Storage for Vines

### What you need to know

The current economic climate has caused a number of clients to reassess or delay their vineyard planting plans. In some cases, grafted vines that were ordered last year for planting this year must now be held until the following year.

#### Storage Options

We have received a number of calls concerning how best to store grafted vines for a full year. It really comes down to two options:

1. Trim back vine roots and tops and then replant so they can grow on for another year in a field nursery, or
2. Hold the vines in a cool store till next spring.

Although Riversun uses cool storage at various stages in the production of grafted vines, we have not made it our practice to store grafted vines for an entire year. Rather, if vines are not sold in one year, we prefer to grow them on in the field nursery. Customers have told us that our “2nd Generation” vines work very well – the vines are sturdier, establish very strongly and often produce fruit one year earlier.

We are currently running some trials to assess how vines fare in cool storage for a year, but we don't yet have enough data to judge whether this practice can be recommended.

#### Different Costs

We recognise, however, that the two options carry significantly different costs. To grow a vine on for another year carries an additional cost of approximately \$1.50 – versus a much lower unit cost in cool storage (estimated at \$0.20 to \$0.30 per vine).

While we can't yet recommend long-term cool storage, we can provide a checklist of best practices, based on our own experience.

#### Cool Store Checklist

- ✓ Wooden bin storage – as opposed to storage in cardboard boxes – is recommended. A large bin will hold approximately 3,000 vines, which creates a more stable environment inside the bin.
- ✓ Each bin must have a sturdy perforated plastic liner to prevent build-up of CO<sub>2</sub> and ethylene (which are both phyto-toxic at high levels). Unfortunately, perforated liners also allow moisture to escape (see below).
- ✓ Cool store temperature must be set at 2°C (with a tolerance of plus or minus ½°C).



*Packing two rows of bundled vines with roots butted together in the middle of the bin enables you to wet the roots only during your inspections at the cool store.*

- ✓ Do not store the vines too wet as this encourages fungal and bacterial growth. We do not like to see “free” water on the scions – we aim for a light covering of condensation only, as on a bathroom mirror.
- ✓ Roots, however, need to be kept moist at all times. To achieve this, we butt the roots of two rows of bundled vines together in the middle of the bin, allowing us to wet the roots only during inspections.
- ✓ Avoid cool stores that house other fruit products because they can produce ethylene, which can kill vines or buds at very low levels – our maximum tolerance is 0.02ppm (for which we test weekly).
- ✓ Monitor the vines in cool store at least once a month to:
  - Check for ANY drying of the roots (should be moist at all times) or excessive drying of the scion and rootstock stem. Re-wet if necessary.
  - Rotate stock in each bin during inspection – there can be different levels of drying throughout the bin.
  - Evaluate vines in each bin for fungal growth and treat accordingly (this may require dipping the top half of vine bundles in a suitable fungicide and draining thoroughly before re-packing).

#### Other Considerations

- While the unit cost per vine will be significantly cheaper than planting vines out in the field, cool storage requires constant monitoring and immediate action where tolerances are not met or in instances of desiccation or fungal growth.

- The grower must bear the risk of failure.
- Vine health may suffer – cool store temperatures are not low enough to prohibit fungal outbreaks (for example, Botrytis can grow happily even at 1 °C). We do not know the risks (if any) posed to vine health by pathogenic vine fungi established during long-term cool storage.
- Recoveries will probably be lower than for field-grown nursery vines.

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