



# In the vineyard

with Nick Hoskins

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I observed a number of problems in newly planted vineyards around the country last season (2002-2003), and I believe that frost may have had more of a role to play than first thought.

The problems concerned slow, irregular budburst – in some cases, vines failed to push a bud at all. The cooler soils and irregular spring temperatures in 2002 meant that buds were slower to move than usual, and that in turn created additional problems for a number of growers.

If the bud is not growing, a newly planted vine is especially susceptible to drying out, as no moisture is being taken up and transported through to the bud. The longer the situation continues the less chance the vine has to get the bud to grow.

While drying out is still the main reason why a vine will fail to push a bud, I now believe that frost may have compounded the situation in some vineyards. As we learned at this year's Bragato conference (in a presentation on how to minimise spring frost damage prepared by Steven McCartney, Darren Chatterton and Maria Good from HortResearch), frost can kill the primary bud. This will almost certainly happen if the frost is lower than  $-3^{\circ}\text{C}$  and the bud is at the DS3 stage – that is, the cotton bud stage.

If the primary bud is killed by frost, then the vine becomes very susceptible to drying out until a secondary or tertiary bud is able to grow. This scenario seems to fit the slow and uneven budburst observed in 2002, when some vines were still breaking bud as late as December.

I have cut open numerous vines that failed to grow or had very poor growth. In most instances, the roots had made some new growth before dying off because no bud had grown. The above-graft portion was usually

dry and dead. In other instances (especially inside spray sleeves), the vines had dead tissue on one side of the rootstock. Sometimes, the bud had made a limited amount of growth, but the vine was essentially dead on one side and unlikely to recover as a result.

Bearing in mind that newly planted vines are at ground level – in the coldest temperature zone – growers can lessen the risk of frost damage in several ways:

- In my opinion, green plastic spray sleeves promote early budburst and should be left off until the danger of frost is past. They should be pulled or folded down rather than lifted and moved to one side. In the latter case, they may still promote early budburst and/or interfere with frost protection (it will also be easier to simply pull them up rather than trying to re-install over new shoots). The same may apply to other spray guards as well.
- Weed control is very important during the period of frost risk, so that heat can be absorbed during the day and released at night. For the same reason, mulch should not be applied until after the danger of frost has past.
- Later planting may also be an option, say a week or two before the danger of frost is over. In some areas, this may mean mid-to-late October; I have even seen dormant vines perform very well when planted in November.

**Feel free to call me on 027 248 7724 if you have any questions regarding vine growth.**

