

## Frost

I hope you will enjoy a walk through the garden gate with me as we chat about frost.

Autumn is a beautiful time when vivid colour highlights a plant we had taken for granted or transforms a dull corner with instant glow. It can also be, as has transpired this year, a time when every kind of weather is thrown at us from a strong frost through days of rain to a record breaking period of twenty plus degrees.

Our own garden and our nursery are both benefiting and suffering from the confusion of the elements. A plum tree has thrown out new leaves, newly potted plants have surged ahead, my potting shed appeared to have a moat surrounding it and a river running through it, pots of some 'frost hardy when established' plants responded with burnt tips and in some cases, death, when we failed to put out the covers the evening before one very frosty morning.

In response to all this, some actions are obvious, such as drainage improvements and religiously checking the weather forecasts for our town of Inverleigh, not just Geelong. Geelong is on the coast and so is often a few crucial degrees warmer than towns further inland. A good place to find local information is on the Meteye website, <http://www.bom.gov.au/australia/meteye/>. Enter your town to find forecasts for temperature, wind and rain. If it will be below 5 degrees C in the river valley in Inverleigh and a clear still night, we could be in for a frost.

During the night dew lands on plants and freezes, taking the temperature of liquid inside plant cells so low that they can freeze, increasing in volume as they do so. The morning sun on the plant results in a rapid temperature change and the combined result is tissue damage that might be superficial or could cause the death of the plant. Plants such as sweet basil, tomatoes and pumpkins curl up their toes in cool areas such as ours because they are not frost hardy at all. Some of my 'frost hardy when established' callistemons in pots had their growing tips affected and look burnt, but are otherwise fine. Many perennials, such as some salvias, are cut to the ground by frost or by humans as a normal part of their cold winter growth pattern.

Interestingly the same plants that were affected in our nursery pots were fine in our garden, which begs the question of 'why?' Well, everything in our gardens impacts on everything else which means that there are all sorts of microclimates on even the smallest of blocks. Houses and water tanks radiate some heat which protects plants close by. Ponds, dams and paved surfaces absorb heat during the day and release it at night, keeping the air around nearby plants a little warmer. Plants that are growing close together give some protection to each other. Trees and shrubs can act as protectors too. Frost is heaviest at the bottom of a slope since the cold air rolls to the lowest spots. Blockers such as hedges and fences can lead to cold air pooling behind them making a frosty spot which openings can help to alleviate. Our worst ever frost losses occurred in a garden on an unprotected slope facing east where our collection of young pelargoniums, commonly known as geraniums, experienced a heavy frost and then greeted the sunrise full on.

So – to answer my question - over time the plants in our gardens have grown enough to give each other some protection or are at a stage where they can bounce back. The young nursery plants in pots are on exposed racks and have to cope with cold air above and below them. It is no surprise that some were hit by the frost. You can also see why our poor little geraniums didn't have a chance and were like babes put out to be exposed on the hill side. A sprinkle of water on them before the sun rose may have helped them to warm up more slowly but more thought about where we planted them would have been best.

Some ways to help your garden cope with frost are to: mainly choose frost hardy plants to suit your district, look for warmer protected microclimates in your own garden or create them and to recognise the vulnerable plants and cover them on frosty nights with shade cloth, hessian, frost blankets, real blankets, sheets or anything that will protect them. Plants in pots can be moved - under eaves, leafy branches or verandahs or given a winter home near a warm wall. You could also plant some deciduous plants which lose their leaves - they provide so much autumn and other seasonal interest and are not at all fussed about frosty mornings.

The most important advice of all is not to despair when all appears to be devastation. If possible, leave damaged parts on until after the threat of frosts is over, since they will protect the new shoots coming along. Follow the 'wait and see' policy for apparently dead plants, since some do revive. Note which plants were affected and work out why – are they just young and need covering this year? Think about what changes need to be made to work with your microclimates so that more tender plants have the best chance to thrive. Try to remind yourself that gardening is a learning experience, be philosophical and remember that any frost losses have increased your store of wisdom!

Happy gardening!

Christine Windle

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