



## Trunk Girdling

**Trunk Girdling** is a normal part of orchard management in both Green and Gold and there is more than one advantageous response to applying the technique.

### Benefits

- Trunk Girdling can **increase dry matter**.
- Trunk Girdling can give a significant **increase in fresh weight**.
- Trunk Girdling can **advance maturity**.
- Trunk Girdling can **reduce the variation** within the maturity clearānce.
- Trunk Girdling can **increase return bloom**.
- Trunk Girdling can reduce **vigour**.



*A nicely healing Trunk Girdle*

### How does it work?

The theory is that the Girdle prevents the flow of carbohydrates from the canopy to the roots making the fruit more competitive in the allocation of carbohydrate within the plant for the short time the Girdle is open.

The technique involves removing a strip of bark tissue and the subtending cambium layer, around the whole circumference of the trunk.



- Use a hand held chainsaw chain, much like a garrotte to remove the bulk of the material and then clean out the cut with a girdling knife or screwdriver...
- **or** use a special double bladed girdling knife
- The cut must be deep enough to remove the cambium layer between the bark and the wood.

- Avoid cutting into the wood.
- The cut is usually 4.5mm (or 3/16<sup>th</sup>) wide. This allows enough time for the carbohydrates to accumulate above the Girdle, but will still callus over and heal relatively quickly.
- Apply the girdle at a comfortable height on the trunk.
- Choose a straight and round part of the trunk.
- Use a fresh site on the trunk for each new girdle where possible.
- If using an existing girdle site, select the oldest one first.
- Leave the cut neat and tidy.
- All girdling tools, chains, knives etc **must** be cleaned of debris and sanitised after each Girdle, between plants.
- All Girdles should be sprayed with a Copper solution as soon as they have been completed.



The wound remains a clean white colour when properly cut to the wood, but quickly oxidises to brown if the cambium is not properly removed.

Girdles need to be checked after the initial cut to make sure that the cambium layer has been completely removed.

A properly applied girdle will heal relatively quickly when applied in summer and autumn. The healing is characterised by healthy greenish callus growing out from each side of the cut. This should be able to be seen starting a week to ten days after girdling.

### Risks and Cautions

Generally Trunk Girdling has proved to be a reasonably safe and reliable technique when applied correctly.

However it would make sense to observe some cautions;

- Do not trunk Girdle young vines until they have achieved a full canopy.
- If the trunks of the young vines are a very small diameter, such as in a double planted orchard, the Trunk Girdle should be applied with a girdling knife rather than a chain.
- Sterilise the girdling tools by soaking them in a suitable sanitizer between plants.
- Trunk girdling severely stressed vines may hasten their demise. This may not be a bad thing in the case of ***armillaria*** as it will force the replacement of vines that are at risk in your production system.
- Vines that are showing symptoms of water stress should not be trunk girdled.
- A Psa protective spray should be reapplied prior to the next weather “risk event”.

### **Timing**

- The Autumn Trunk Girdle should be early enough to provide the required effect prior to harvest and to have the girdle fully healed before winter. Usually this is around the middle of February.

### **Trunk Girdling and fruit storage**

A recent review of the practice of Trunk Girdling conducted by Dr Errol Hewitt, professor of Horticulture at Massey University, has confirmed that there is no effect of Trunk Girdling on fruit storage. However trunk girdled fruit may have different maturity characteristics at harvest than fruit from vines that have not been Trunk Girdled. These differences should be taken into account at harvest and during inventory management to ensure best storage results.

### **Trunk Girdling and Psa**

There has been some trial work done recently in Italy and France that shows that Trunk Girdling Kiwifruit vines subsequently reduced the development of Psa symptoms. There is some thought that Trunk Girdling may be having an "elicitor" effect on kiwifruit plants, helping switch on their bacterial defence response and reducing their susceptibility to Psa. All hygiene precautions should still be observed when Trunk girdling is being done and in particular

- Girdling tools should be sterilized between vines.
- Girdling cuts should be sprayed with a sanitizer and protectant solution as soon as each cut is completed.

