

## PGA Chill Newsletter Number 3 - 2013-14 Season

16<sup>th</sup> August 2013

### Winter Chill 2013

Winter chill during the 2013 winter to date has been below average - in some cases well below average.

The Swan Hill, Mildura and Renmark growing areas have not reached the benchmark level of 57 Dynamic Portions by 15<sup>th</sup> August. Mildura is now 52 Portions and Renmark 50. It is almost statistically impossible for these growing regions to accumulate the necessary 59 Portions by the end of August.

Whilst the other growing areas have reached the total Dynamic Portions required by *Sirora* pistachios, all areas have received chill at the low end of the PGA data collected over the last 15 years.

The charts for each of the growing areas are attached. The current season is shown in the bold line so it can be easily compared to previous seasons.

This is the final 2013 Chill Report for this winter.

### Chill Background Information

Pistachios are extremely sensitive to lack of winter chill.

Lack of chill will result in very uneven opening of flowering buds; some will not open until November or December, many buds will not open at all.

PGA research, supported by the Australian government through Horticulture Australia Ltd has shown the Dynamic Chill model to be the most appropriate method to measure the chill requirement of pistachios. The research has shown that *Sirora* pistachios require 59 Dynamic Chill Portions between 1<sup>st</sup> March and 31<sup>st</sup> August. The research also shows that 57 Dynamic Chill Portions to the 15<sup>th</sup> August will, in 95% of years, accumulate to 59 Portions by 31<sup>st</sup> August.

### Mitigating the effect of low winter chill

Insufficient winter chill causes uneven bud break and perhaps some buds not to open at all. Sometimes buds will delay opening until November or December resulting in poor or non-pollination. Late opening buds will have late maturing nuts; some buds will mature so late that they cannot be commercially harvested.

Research in California and Australia has shown that winter oil application will significantly mitigate the effect of insufficient winter chill. Correctly applied oil can increase crops with insufficient chill by up to 15%. If there has been sufficient chill, little benefit seems to result from the oil application.

Oil application may bring the trees into flower up to a week earlier. The increased risk of frost damage should be considered by growers before applying winter oil in August.

Trials over seven years in California have shown limited adverse affects from oil application. In the one season where lower yields were recorded from the oil treated trees, the week during the flowering of the treated trees was very wet affecting pollination. A week of rain during pollination will affect crop load.

Winter oil is registered in NSW and SA only for the treatment of scale. Growers can only apply oil for the registered purpose.

Application time: Ideally the third week of August.

Oil to use: refined, heavy, emulsifiable horticultural spray oil. Typically about 860 g/litre petroleum oil. One brand that is used is : “ Vicol Winter Oil” – Winter Dormant Miscible Oil – Insecticide

Concentration: 3% to 6 %, i.e. 3 to 6 litres per 100 litres of applied spray volume

Application rate: Spray volume is dependent on tree size, but must be applied to the point of runoff. It is critical that bud scales are thoroughly wetted. On average size trees, the application rate is up to 1,800 litres/ha. Tractor speed has been indentified in California as most important for the effectiveness of sprays. California research recommends a maximum speed of 2mph, about 3kph.

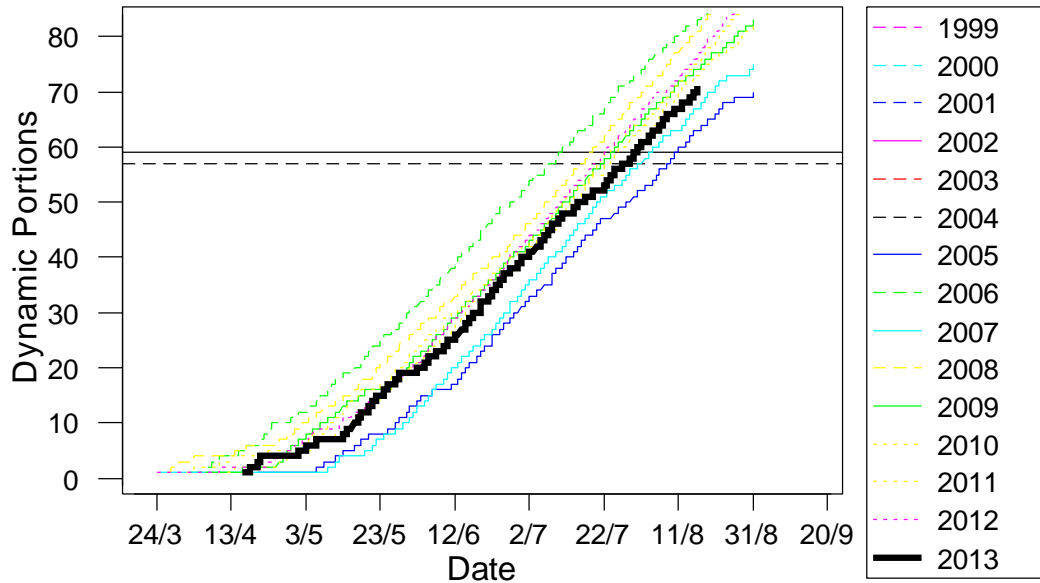
Some growers always apply oil unless the accumulated chill is well above the required Chill Portions. They say they do this to ensure scale control and also to be conservative. In such cases, to reduce cost, they use a 3% oil spray rather than 6%. If the chill has been low, growers usually apply at 6%.

The raw data is collected from the Bureau of Meteorology sites. The data for each orchard may be different. This data and information is provided as a guide to growing pistachios in Australia. Each grower should ensure that actions taken on their orchard is appropriate for their orchard. The PGA Inc and its office bearers will not accept responsibility for the actions of individual growers on their orchard.

Chris Joyce

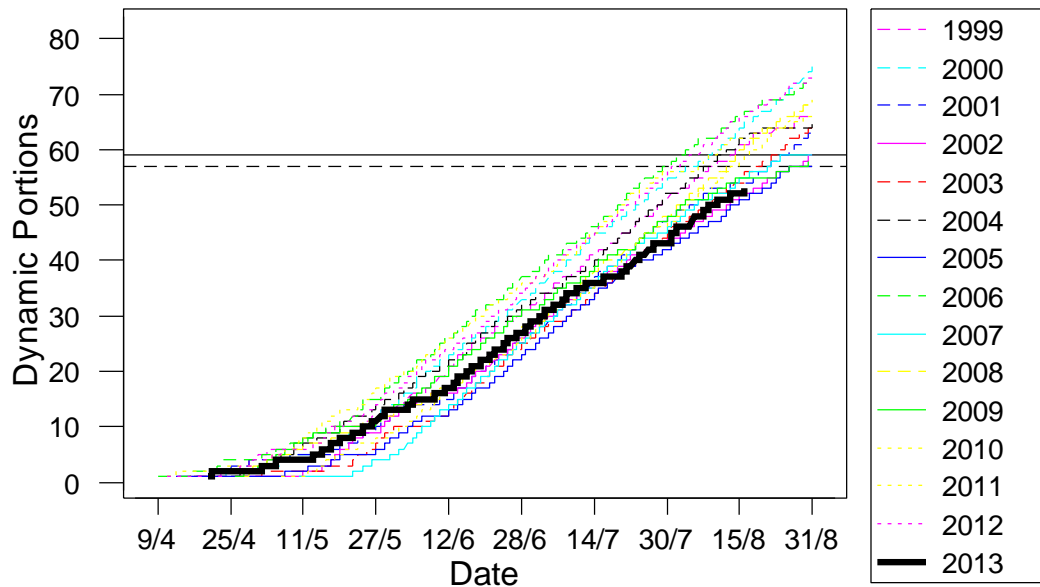
Chair, Research Committee

## Nhill



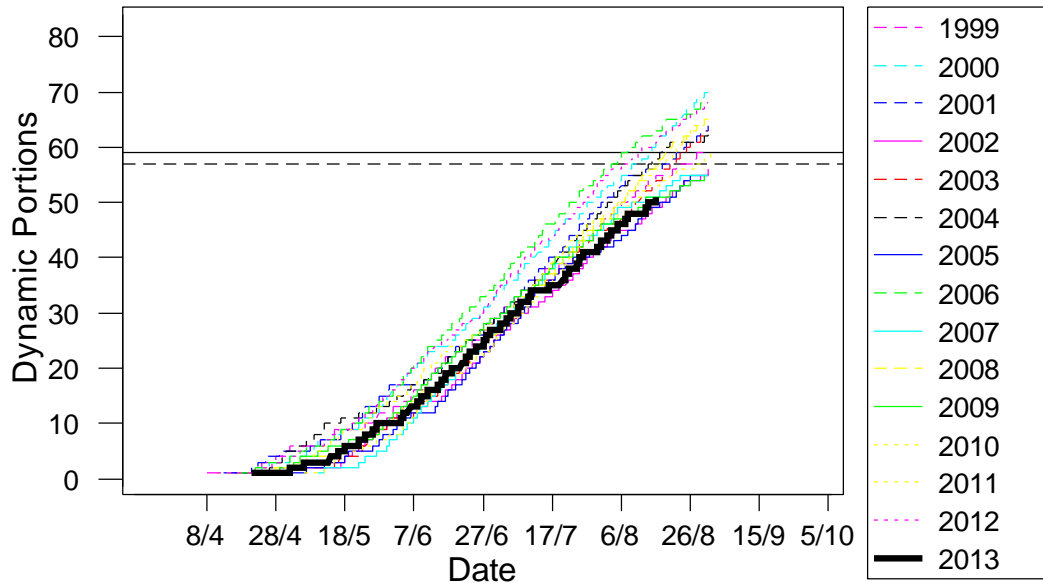
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## Mildura



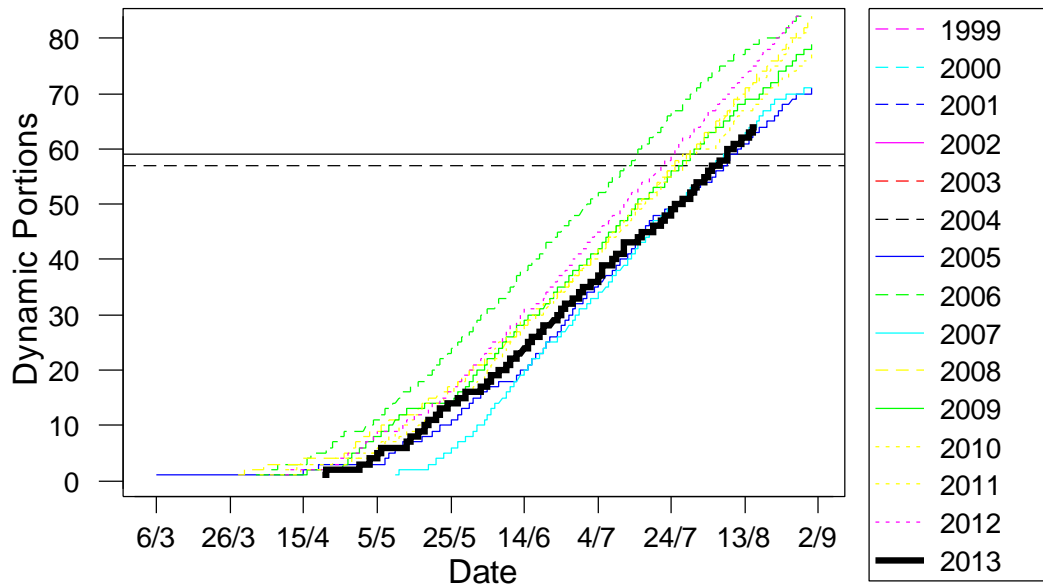
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## Renmark



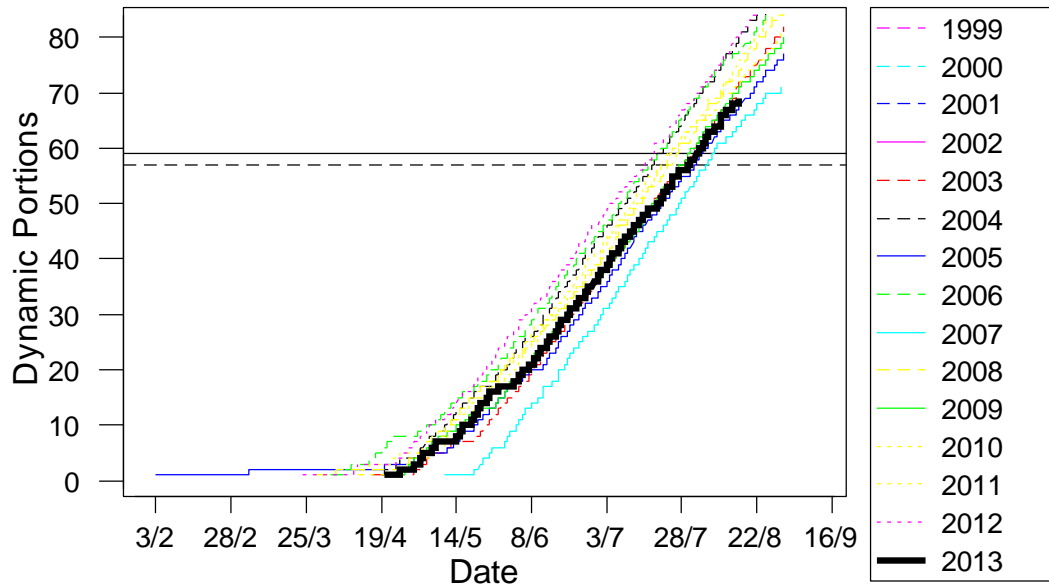
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## Lameroo



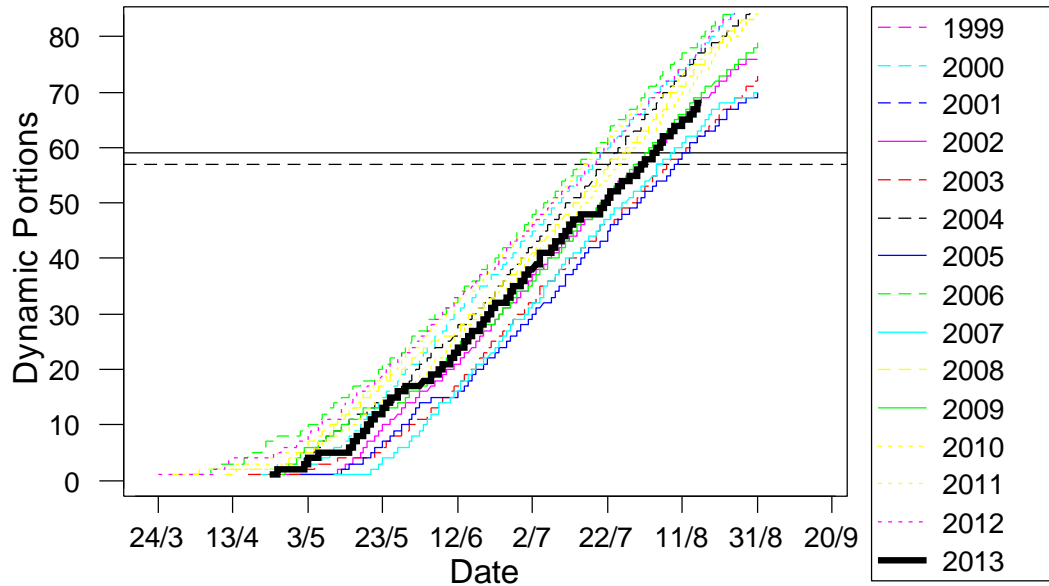
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## Yarrowonga



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## Wagga Wagga



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