

## FUTURE ORCHARDS' BUSINESS DEVELOPMENT PROGRAM

### Fruit Size Progress Report – Mid January 2012

Prepared by John Wilton

Good fruit sizing data this year is only available from the mainland Eastern States, with most data coming in from Victoria.

Varieties being sized on a regular basis include:

- Gala group
- Cripps Pink
- Fuji
- Jazz™
- Granny Smith

In addition there is a little data coming in on Jonathan, Golden Delicious, Braeburn and Sundowner.

The main differences this year compared to last season is that bloom dates have been earlier. In the case of the Royal Gala group, flowering dates were around 10 – 12 days earlier in Victoria and New South Wales, dropping back to about 7 days in Queensland. Because of this earlier flowering, fruit sizes by calendar date are larger than last year. However, when measured by days after full bloom (DAFB) the fruit size is similar for most Gala blocks, which suggests that harvest will be earlier this year than last year, due to the earlier flowering date. Compare Fig 1 and Fig 2. The both show the same data, fig 1 by date and Fig 2 by DAFB.

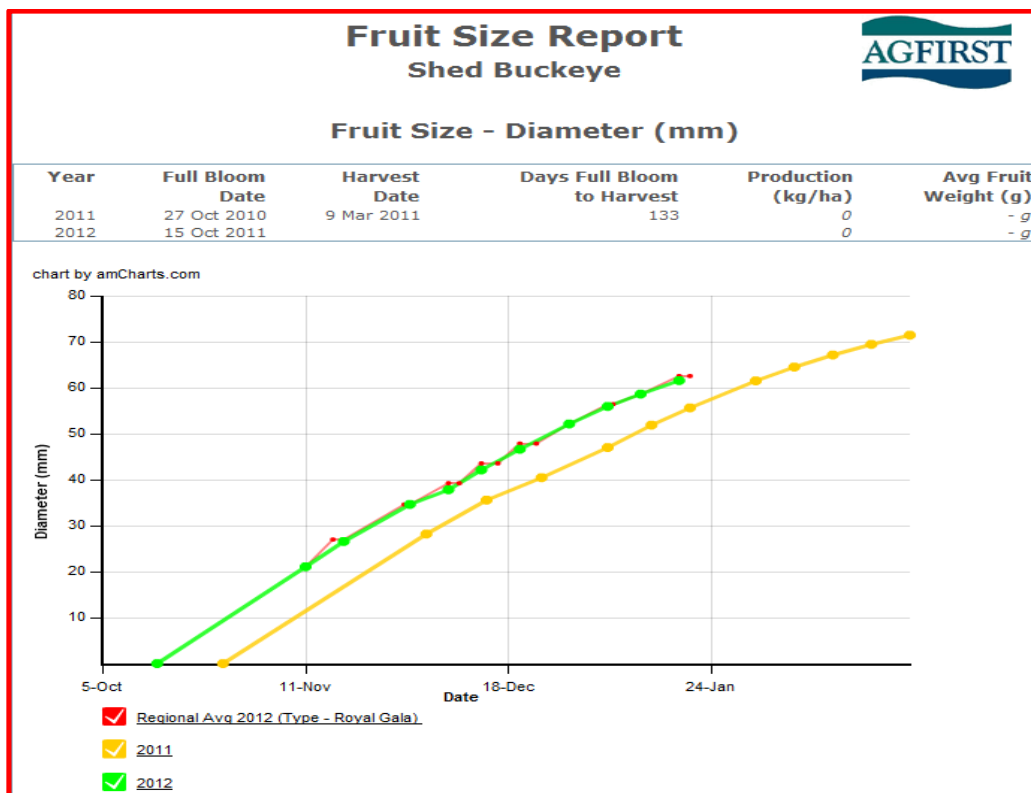
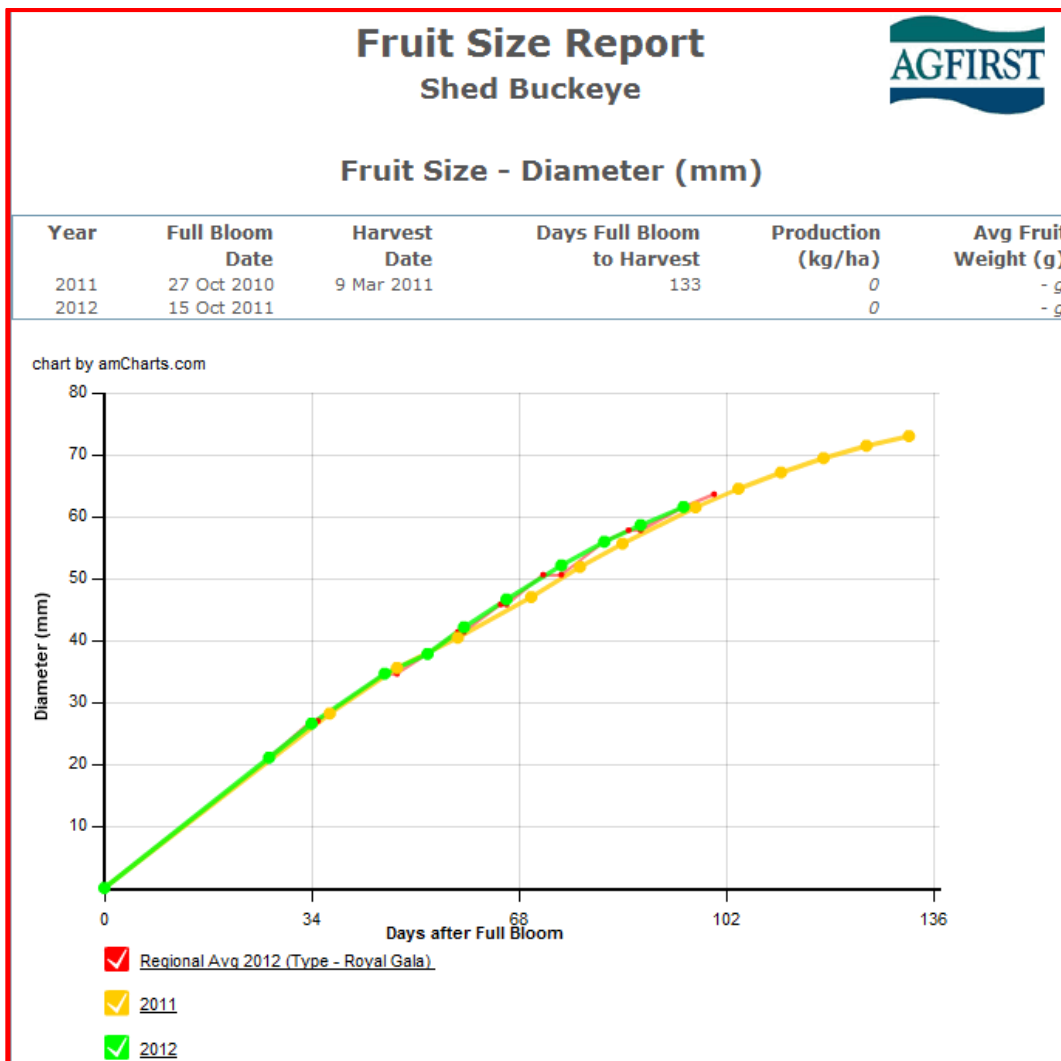


Fig 1. Fruit size by calendar date



**Fig 2. Fruit Size by DAFB**

Cripps Pink, Jazz™, Sundowner, Golden Delicious and Granny Smith flowering dates were also earlier this year, so are showing larger fruit size by calendar date than last season. One block of Jazz™ flowered 22 days earlier than last season, consequently its fruit size is just over 5mm larger on 21 January than the fruit size last year was on 22<sup>nd</sup> January.

On the whole the fruit size, as expressed by DAFB has been tracking similar to last year for most blocks. There are a few exceptions, probably due to differing crop load between last year and this year where fruit size by DAFB differs. Below are graphs of a Gala example, both from the same orchard, where differing crop load is clearly influencing fruit sizing.

Royal Gala VC 40 had a gross crop of 46t/ha last year and is forecast to have a modest increase of 24% to 55t/ha. The block which is going into its 6<sup>th</sup> year can handle this increase, consequently its fruit sizing is tracking along at a similar pace as last year.

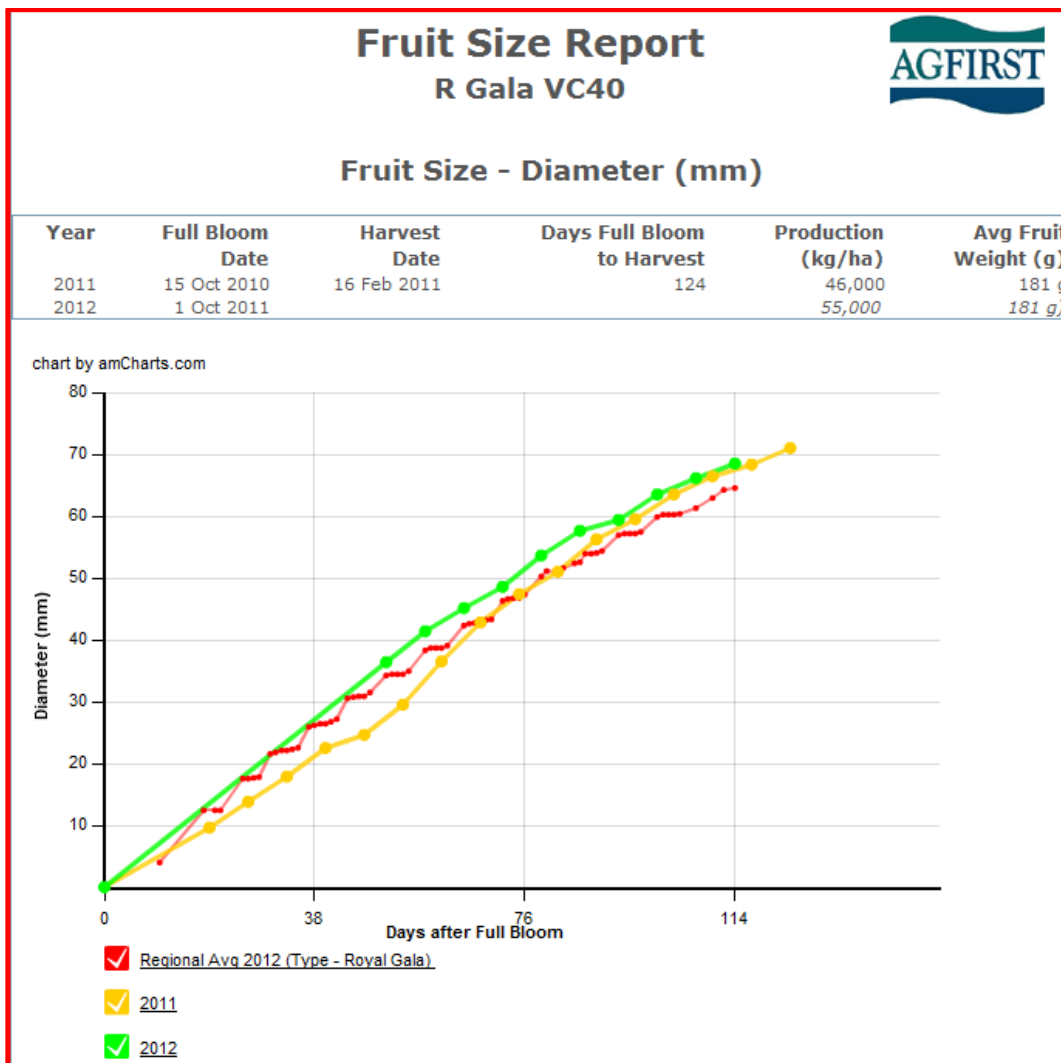
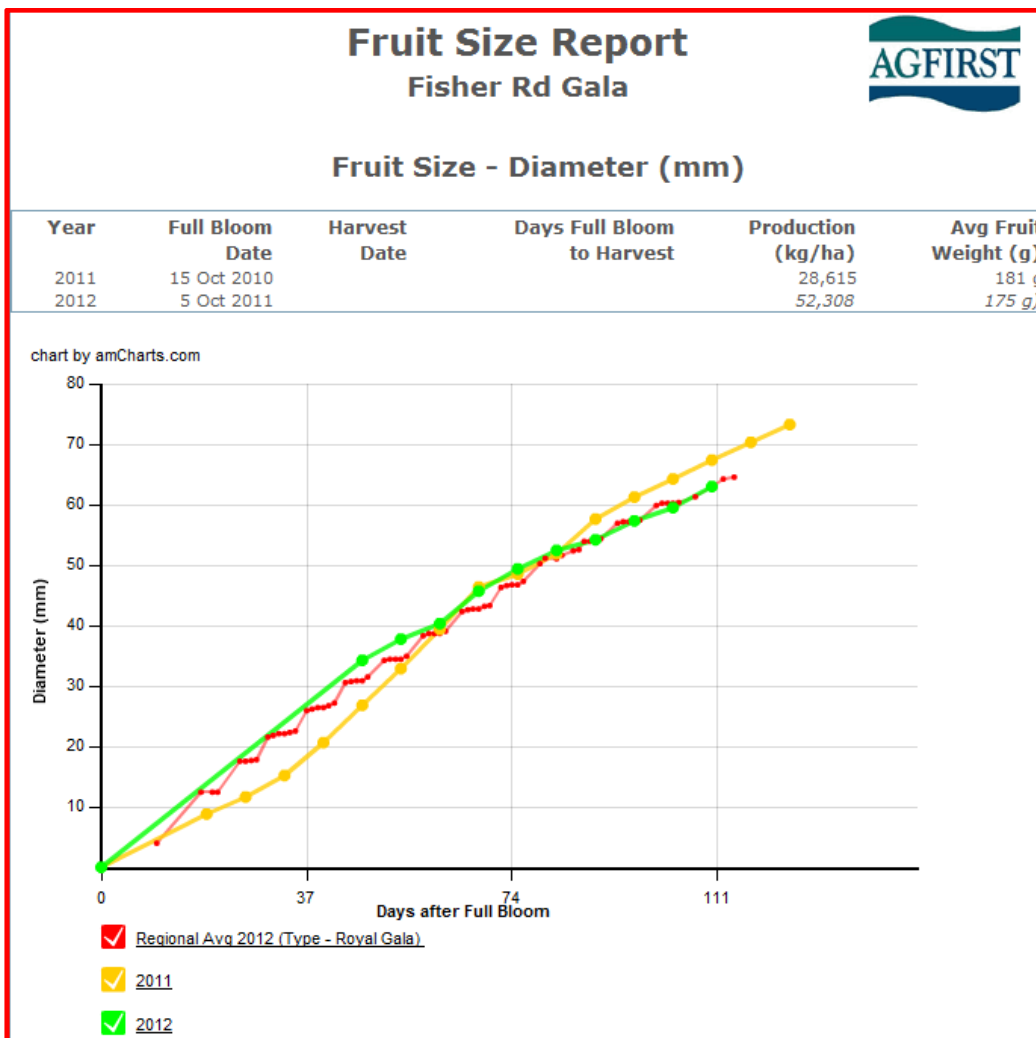


Fig 3. Fruit Size by DAFB - 2011 and 2012

In contrast Fisher Road Gala had only 28.62t/ha last year and is forecast to lift production by 82% to 52t/ha this year at 5 years of age. With this big increase in crop load fruit sizing rate began to fall behind last year's growth curve around 80 days AFB.



**Fig 4. Fruit Size by DAFB - 2011 and 2012**

Cripps Pink on many blocks is now showing signs of lagging behind last year in regards to fruit sizing expressed as DAFB which is probably welcome for many growers, because the variety has a tendency to be over size by harvest.



The graph below of the Shed RG shows a Rosy Glow block that is sizing at a slower rate than last season.

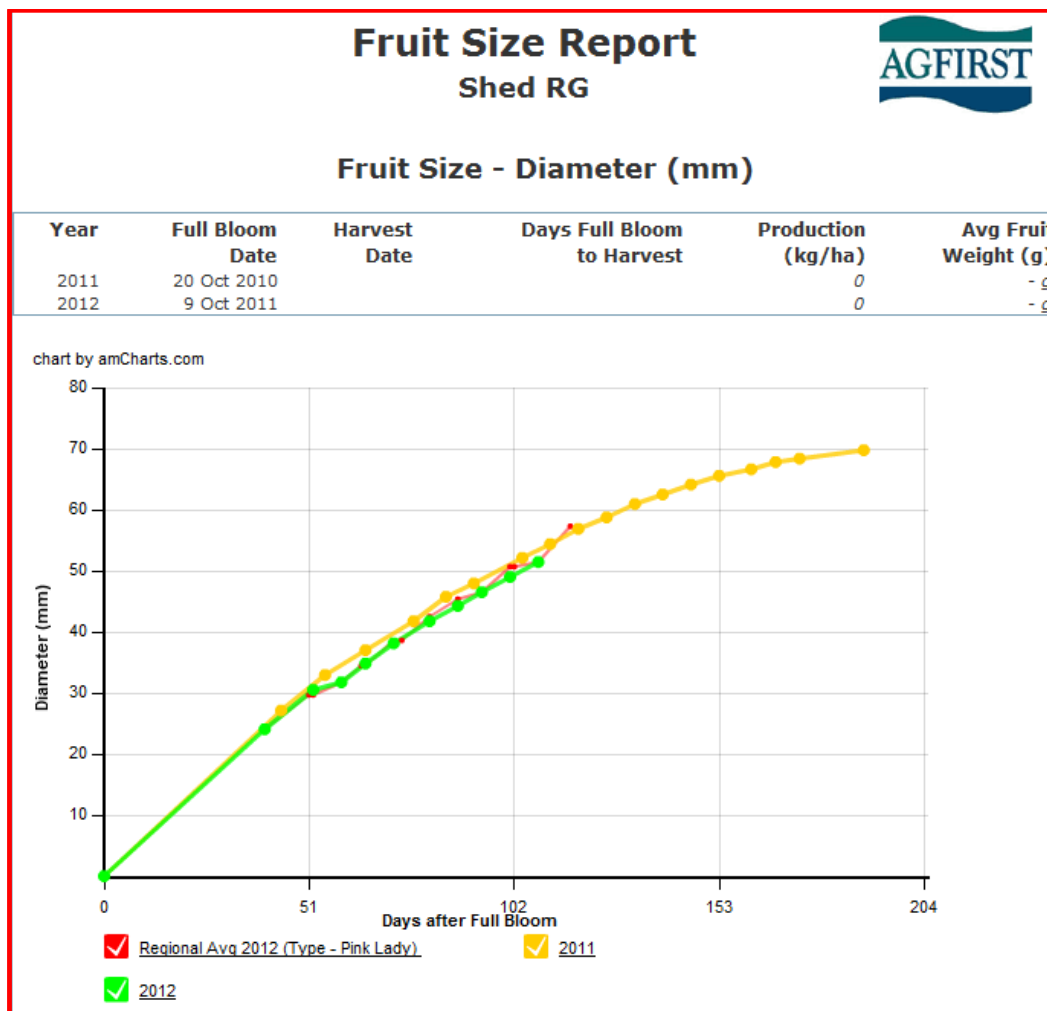


Fig 5. Fruit Size by DAFB - 2011 and 2012

### Fruit Growth Rate Patterns

An obvious feature of weekly fruit growth rate this season is that most blocks being measured, generally across all varieties, are showing marked pause in their growth rate between 50 and 60 days AFB and the effect of this is obvious when the regional or national mm per week sizing graphs are viewed. The precise timing of this drop off in fruit sizing varies by variety as the table below shows:

Variety	DAFB Temporary Fall in Growth Rate
Cripps Pink	57 days
Gala	51-55 days
Granny Smith	63-65 days
Jazz	56 days
Fuji	53-57 days

Because of the different flowering dates across the blocks and the wide range of location this fall off in growth rate is unlikely to be due a weather related event. It, therefore appears to be associated with a physiological stage in fruit development, perhaps the completion of cell division which would occur around this period. Another possible explanation is that this is when natural fruit drop is beginning to kick in.

Some blocks show distinct pauses in fruit sizing later in the season, however the timing of these events is not similar to other blocks or widespread among monitored blocks, indicating these later disruptions to fruit sizing are block or microclimate related.

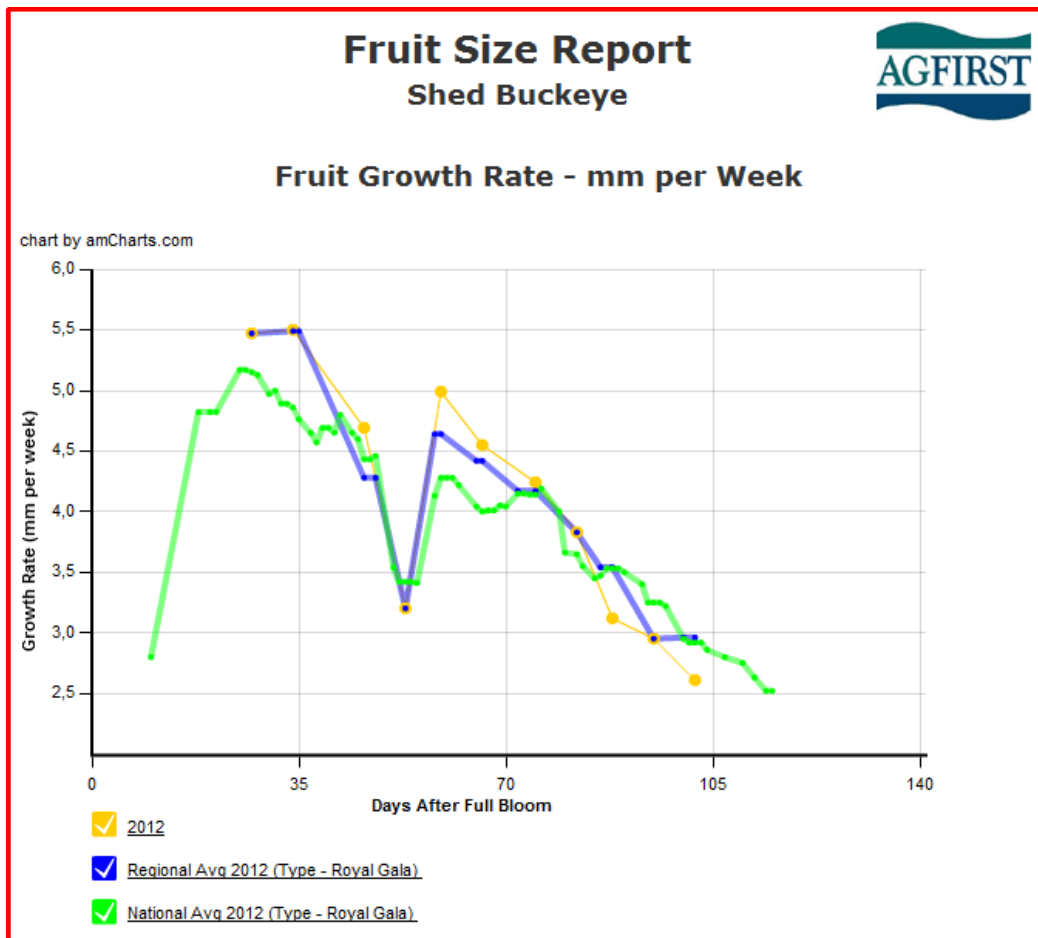


Fig 6. Fruit Size by DAFB - 2012