With Christmas just around the corner, things are starting to heat up. Fruit are starting to become increasingly visible, our hand thinning job keeps rolling on and harvest for some is only weeks away.

This newsletter will cover an update on how fruit size is progressing this year in comparison to the past few seasons. It will cover the benefits of our water centre and the nutrition toolset in OrchardNet and how this can empower your irrigation and nutrition decision making. Finally, it will cover off the updates to the labour harvest planner in OrchardNet, making it easier to plan your harvest during a labour shortage.

Being >60 days after full bloom now, the heaviest fruitset and blocks with high biennial bearing risk should ideally have had their croploads reduced; even if that means returning later to get down to target croploads. A double pass strategy can be an effective way to minimise biennial bearing risk across the whole, particularly where labour supply may be limited.

As hand thinning continues it is the ideal time to be working on your crop estimate for the 2021 year. This will start to inform how harvest 2021 is going to look, whether you need to order more bins and whether additional staff may be required. As a reminder, now is a great time to run the harvest labour planning tool within the company reports.

Good luck for the rest of your hand-thinning. A Merry Christmas and a happy New Year to you all!

- Jack

OrchardNet has a variety of in-built tools to allow for production planning. A combination of accurate tree counts, areas, block production targets and other factors can be combined to give target fruit numbers per tree.

http://www.orchardnet.co.nz

As part of the Future Orchards project OrchardNet is provided to Australian growers for free (up to 1200 blocks total). Please contact your local FLA or a member of AgFirst (see details on the last page of this newsletter) if you would like to subscribe.
Australian Fruit size update

A number of growers across the country are well underway with their fruit size measurements for the 2020/21 season. If you’re interested in tracking your fruit size progression get in contact with your local Front Line Advisor or a member of the AgFirst team (see last page of this newsletter for details).

This data can be put into OrchardNet where it can be compared to regional and national averages either by date or days after full bloom (DAFB). In doing so you can get a gauge on how your crop is progressing relative to other growers of the same variety. Fruit growth rates can also be monitored and used for your decision making; decisions on irrigation, fertigation, secondary hand-thinning and Retain or Harvista use, can all be driven using data from your fruit growth rates.

In the following two figures (Figure 1 & 2) we show the YTD national averages of the 2 biggest volume varieties, Royal Gala and Pink Lady. Data for Royal Gala suggests a similar fruit size to 2020 and down on 2019 and 2018. In Pink Lady, the data suggests a similar fruit size to 2018 and slightly up on 2020 and 2019. A very good spring is obviously paying dividends.

How do your blocks compare? Rather than try and interpret these graphs why don’t you get on board? We’d love to see as many growers as possible using the service. Please refer to the previous BDG article to see how.

When you do monitor your fruit size and compare it against national and regional trends, if you see a problem with growth rate you can do something about it. Possibilities from here on in include:

- If you haven’t thinned Pinks yet you should do it ASAP and maybe lower your fruit number targets if your size is behind.
- If you have already thinned but size is not looking good, consider a second thin in January.
- Look at water and fertiliser inputs. Are they enough to drive performance?
- Consider the use of Retain or Harvista to extend your growing season.
- Get your marketing team ready for smaller fruit size.
- Make the call whether you will go for short, medium or long-term storage and ensure you have the colour and maturity parameters to fit.
Water Centre

Now is also the time to utilise the water centre in OrchardNet. To start, make sure that the correct weather station is assigned to each property. Once this is done, try entering your irrigation details to be able to run the various reports that track your water use against all others in the database. To enter irrigation into OrchardNet you need to be able to calculate what your irrigation system applies as effective rainfall (ie. mm).

Effective rainfall per hr = sprinkler or emitter output (l/hr) / sprinkler spacing (m²). Eg sprinkler applying 35 l/hr spaced at 5m * 2.0 m. Application rate = 35/(5*2)= 3.5 mm per hr. Calculate the hours the irrigation ran in the month and enter the total mm of irrigation into OrchardNet. Eg. system ran for 6 hrs per week for 4 weeks = 6*4*3.5= 84mm irrigation.

A fully mature apple or pear canopy using minisprinklers should need 70- 80% of ET if you only irrigate the trees and not the grass sward. Figure 3 below shows how one of the water reports can work for you if you enter your irrigation. This example is one of our home blocks and although our crop factor varied a bit by month the average over the dry summer months was (45+62+62+78+56) / 5 = 61%.

We encourage many more growers to use this tool. Just the discipline of calculating effective irrigation and monitoring ET will empower your irrigation decision making. Don’t just rely on what your soil moisture readings tell you, understand this water budgeting technique to ensure your trees are getting what they need. “Remember over irrigating is just as detrimental as underirrigating”. Get on board, give it a go.
Nutrition - providing the optimal nutrition environment for your trees.

Plant nutrition is a vital component of maximising your fruit quality and potential yields. By keeping track of the year-by-year movement of your soil and leaf test results you can begin to develop and refine your management decisions to ensure you’re providing the optimal nutrition environment for your trees.

The wrong balance, a deficiency or an excess of nutrients can drastically change the attributes and storage quality of the fruit you’re growing.

For those of you who have a regular nutrition monitoring program, this data can be entered into OrchardNet’s nutrition centre. Once entered the data can be compared to nutrition reference curves for apple production as seen in the figures to the right. Soil test results can also be compared to reference values; inputting fertiliser application data (amount, timing etc.) can also allow you to track the impacts of your fertiliser program on your soils through time.

Small tweaks in your nutrition program could mean large differences to fruit packout, return bloom and fruitset. Make sure you are taking the time to look at your leaf tests.

What if you’re not monitoring leaf nutrition?

If you’re keen to make a start I’d suggest taking a preharvest sample (~2-3 weeks before first pick) in some of your key blocks. If one block is always far superior on colour it may be worth comparing it to a poorer performing block of the same variety; you might find some interesting patterns in the results...

Additional samples in mid-late November and mid-January can also be useful where there is a specific concern with block nutrition or you’re unsure of whether corrective actions will be sufficient.
OrchardNet Labour planning tool

In the last couple of BDG articles I have pushed the use of the labour planning tool to help you organise picker numbers over the harvest period. We have just updated this to enable you to visualise how your picker numbers will be broken up by variety.

Figures 4 and 5 show the picker number by ISO week for each individual variety as well as the total picker number for the harvest. This reporting gives you the ability to select as many or as little varieties as you want to be included in the report.

In a season like this, it gives you the freedom to plan your harvest knowing you may have to bypass some blocks due to an extreme labour shortage. Figure 4 shows the labour requirement of our Australian OBA model orchard, where as figure 5 shows the labour requirement excluding Pink Lady and Sundowner. The blocks you would look to bypass would be ones that fall in among a harvest peak and are your least profitable blocks. You can see that the second harvest peak has decreased significantly from 26 to just over 14 pickers during ISO weeks 16-18.

To do this youll need to enter your total estimate by variety, then click on company reports and find the harvest scheduling report. From there you can select whether you are working a 5 or 6 day week and then select which varieties you want included in the analysis (note: use ctrl in windows or command on mac and scroll through selecting varieties).
Interested in trying OrchardNet within your business?

OrchardNet takes some perseverance and may require a different way of thinking to what you’re used to.

If you’re not too sure how to login to OrchardNet, enter data, add blocks or you just need a few extra pointers don’t be afraid to get in contact with your local Front-Line Advisor (FLA), the OrchardNet Administrator (adrian.stone@agfirst.co.nz) or a member of the AgFirst team.

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