Future Orchards

Future Orchards Business Development Group Update

Issue 27

February 2020

This newsletter has been produced as part of the Future Orchards® program. Future Orchards is a strategic levy investment under the Hort Innovation Apple and Pear Fund. It is funded by Hort Innovation using the apple and pear levy and funds from the Australian Government and is delivered by APAL and AgFirst.

PREPARED BY NIC FINGER, AGFIRST

Harvest is well and truly here with most regions now underway with early varieties and ramping up to bigger volumes of fruit.

Whilst a busy time of year, harvest presents a unique opportunity to evaluate your performance and the 'work-ons' for next year. Whilst individual data points such as number of bins per block (and per pick) are invaluable, a few general notes around your 'gut feel' may also provide much needed inspiration when it comes to planning out next year's crop after this harvest finishes.

Taking a few minutes at each pick to make notes about what has and hasn't worked (colour, maturity, size, cropload, russet, number of pickers etc.) can make a world of difference when you come to winter decision making (problem solving) time with a block-specific list already on hand.

This newsletter touches on some of the datapoints to capture during harvest that can be invaluable for next year's planning as well as an introduction to the new harvest labour planning tool in OrchardNet.

Good luck for the rest of your harvest season and here's hoping things run as close to smooth as possible and any issues are known well in advance.

Cheers,

Nic

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 bud and fruit numbers per tree.

http://www.orchardnet.co.nz

Don't have an OrchardNet account?

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 give it a go.

IN THIS ISSUE

Datapoints for harvest

Labour planning in OrchardNet

Reminders: Critical data for the harvest season

Busy time of year; great time to capture key data for the current crop to help plan for next year.

Here's a few to be capturing over the next couple of months...

Maturity data

Leading into and during harvest, monitoring and tracking development of fruit maturity is critical to ensure harvest is timely and fruit is picked in **optimal condition.**

- SPI - iodine solution
- Pressure - penetrometer
- Brix – refractometer

Monitoring background colour is also crucial to ensuring fruit does not get over-mature.

Just because you have applied a harvest delaying agent (eg. ReTain or Harvista) or colour isn't where you want it to be doesn't mean the fruit isn't ready to be picked.

Fruit condition (and quality as a result) is crucial.

Figure 1 *SPI testing*

Harvested bins by block and date

A simple record of the number of bins picked by day for each block.

By capturing this level of data, you will be able to:

- Calculate profitability in OrchardNet when coupled with postharvest data
- Determine % picked by date
- Monitor productivity

Where fruit will be pooled across the orchard and packed together a couple of notes on estimated packout and the major defects are also invaluable.

This can also be a key first step in ensuring any fruit with poor storage prospects is segregated and moved in a timely manner when required.

Figure 2 *Bins in sun shed*

Final fruit size

Where you have been monitoring fruit size on individual fruit, harvesting and weighing these to get an average 'day of harvest' weight will serve as a good comparison in future monitoring years (the historical curve will translate to an actual harvest fruit weight).

Nutrition

It's not too late for leaf sampling to inform your postharvest foliar and soil programs.

Photos

A photo of each block (labelled) at harvest, on tree and in-bin.

One of the simplest records and a great way to look back on a job well done.

Figure 3 *Nice looking Brookfield at Turnbull Brothers.*

Figure 4 *Brookfield up close*

Updating block estimates pre-harvest

Up to date and accurate estimates

For each block; OrchardNet is capable of suggesting an updated block estimate based on post-thin fruit counts, expected average fruit weight and pickout % (% of fruit making it from tree to packhouse).

To do this you will need:

- Accurate block area, tree spacing and tree number in OrchardNet
- Edit the metrics category for:
  - Fruit Post-thin
  - Fruit weight (g)
  - Pickout % (85-90% typically)

Metrics:
add a year: 2017

	X
Year	2020
TCA	17.0
TRV	
% of Full Canopy	90
Branches	
Beehives per ha	
Green Tip Date	03/09/19
Full Bloom Date	06/10/19
Harvest Date	
BCA	
Buds required per fruit	2.00
Buds Pre-prune	
Buds Monitor prune	
Buds Post-prune	207
Fruit Pre Thin	218
Fruit Monitor Thin	
Fruit Post Thin	128
Fruit Weight (g)	300
Pickout %	85
Harvest Bin Weight (kg)	400
Class 1 Packout %	80
Class 2 Packout %	
Dry Matter	
Winter Estimate: Gross Kg Picked	364000
Winter Estimate: Packout (%)	80
Winter Estimate: Fruit Weight (g)	280

After updating these three fields, return to your block crop estimate (to edit click the 2020 year) and a series of suggested values will now be visible. In this scenario, I would change the tonnes per hectare value to reflect a 73.83 tonne crop and a 300g expected fruit size (this data is from Scilate which can produce very large fruit).

Production Estimate:
add a year: 2018 2017

X	Year	Gross kg
X	2020	27000

Edit 2020 Block Production Estimate

Kg | TCE | Bins | Tonnes per ha

		Suggested Values
Tonnes per ha Picked	68.00	73.83
Tonnes per ha to Packhouse	68.00	73.83
Class 1 Packout %	80	80
Class 2 Packout %	0	0
Average fruit weight(grams)	280	300
High Grade %	70	

Enter

NB: Packout % is based on fruit submitted to packhouse.

OrchardNet – Harvest Labour Planning

With all blocks estimates up to date it is possible to estimate your labour demands through harvest to assist planning.

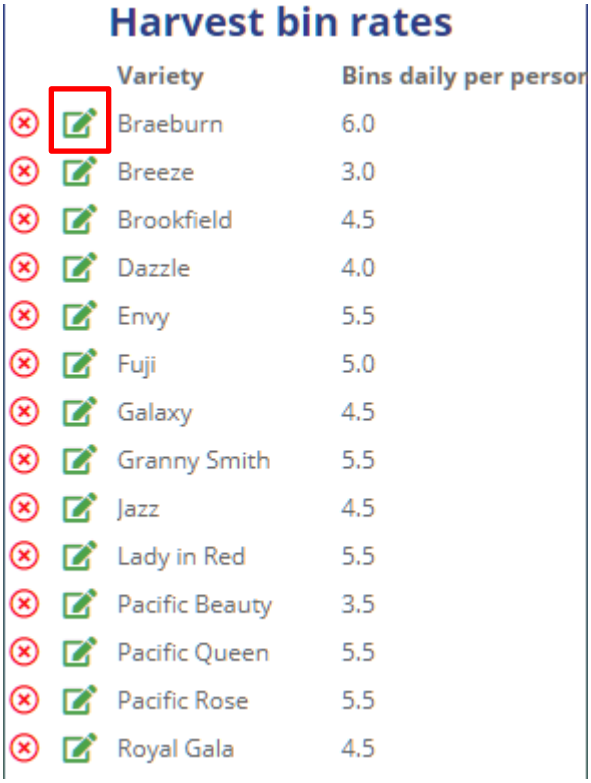
To use this new feature in OrchardNet requires three components to be entered:

- Crop estimate for all blocks
- Harvest bin rates
- Harvest schedule
    - what % per variety in each week

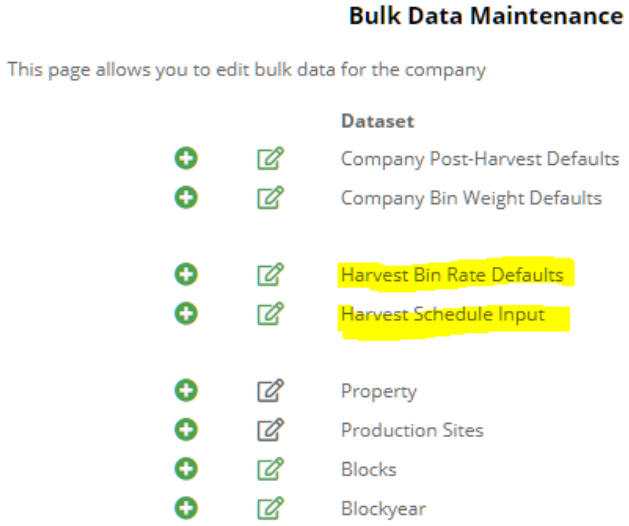
The following serves as a short guide on entering this information.

Step 1. Harvest bin rate defaults

The first column to edit is your picker efficiency per variety. For this example, the grower has entered their average bins picked per person for each variety they grow (pictured right for this example).



To edit the average bins picker per person per day, click the edit icon (red box above).



OrchardNet
Taking the guesswork out of growing

Harvest Schedule Input

After determining the rate of picking for each variety comes the tricky part.

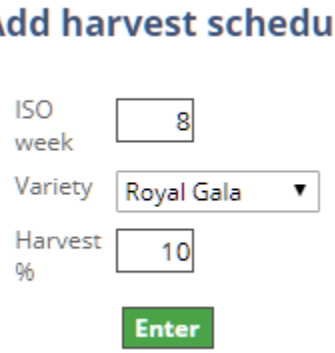
After selecting to edit the "Harvest Schedule Input" under bulk edit, you will see a table similar to the below but with no data. The upper right-hand corner "Add" will allow you to start populating this dataset.

For each variety as a whole, you must determine the percentage volume that will be picked in each ISO week.

Determining volume by week can be a relatively simple process with good records by looking back through previous harvests and how many bins came off in which week.

For example, if you have 1000 bins of Royal Gala and you expect to pick 100 bins in ISO week 8 (February 23 on) then you should "Add" a 10% pick in ISO week 8.

Where harvest management manipulations have been used differently to previous seasons (dormancy breakers, Retain, Harvista) adjustments of volumes will be necessary.



Do not forget to take into account volumes from new blocks.

Variety	3 19 Jan	4 26 Jan	5 02 Feb	6 09 Feb	7 16 Feb	8 23 Feb	9 01 Mar	10 08 Mar	11 15 Mar	12 22 Mar	13 29 Mar	14 05 Apr	15 12 Apr	16 19 Apr	17 26 Apr	18 03 May	19 10 May	20 17 May	Add
Pacific Beauty					30	50	20												100%
Breeze					40	40	20												100%
Galaxy						25	25	25	25										100%
Brookfield						25	25	25	25										100%
Royal Gala						10	30	30	30										100%
Jazz									30	40	20	10							100%
Dazzle									50	50									100%
Pacific Queen										30	30	30	10						100%
Braeburn											25	40	25	10					100%
Fuji											25	25	25	25					100%
Granny Smith												30	40	30					100%
Envy												35	35	20	10				100%
Pacific Rose													30	30	30	10			100%
Lady in Red														50	50				100%

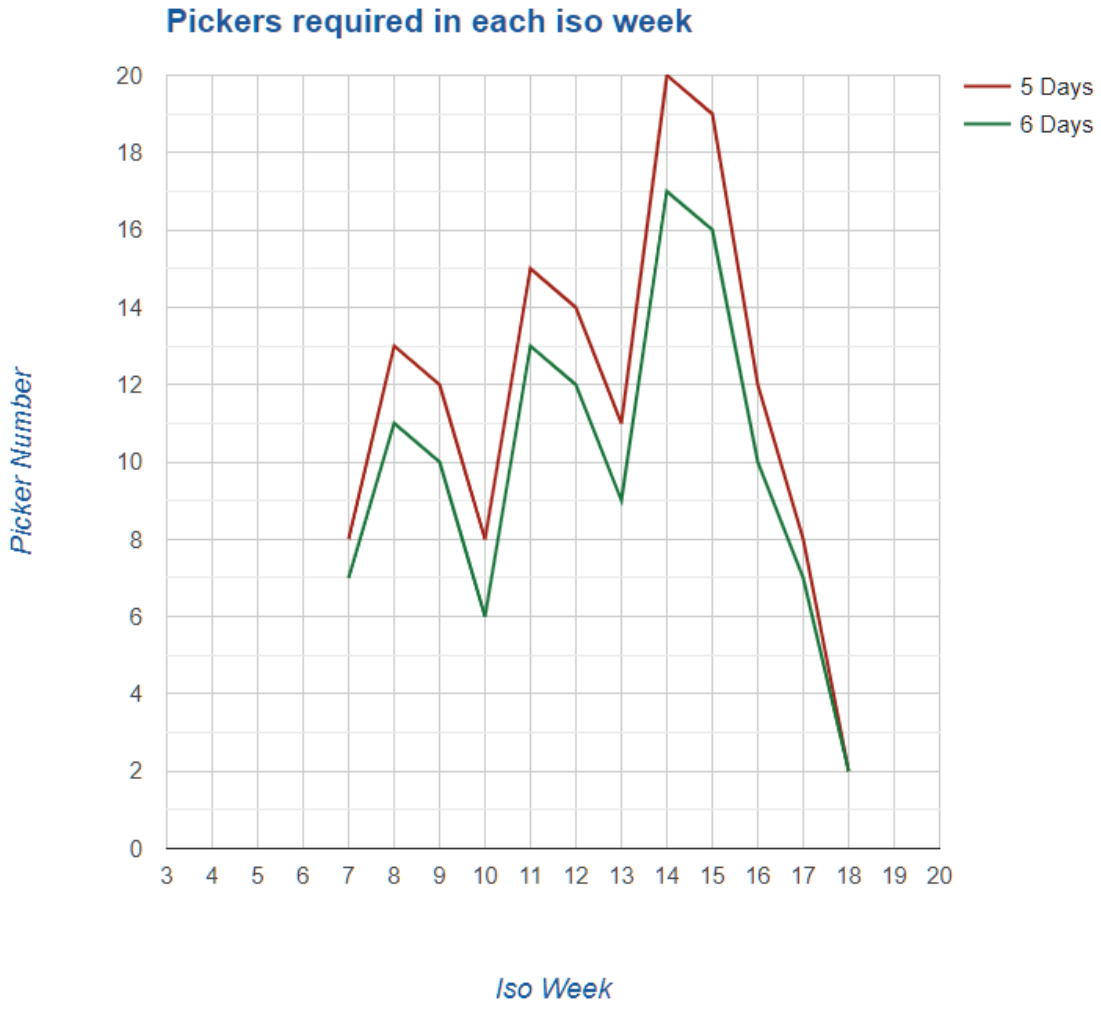
Output

To access the harvest schedule report, select company reports on the homepage.

From here scroll past the other reports (harvest scheduling is the second last on the list).

This report will then summarise your crop estaimtes, bin rates and how many pickers will be required in each ISO week number in both tabular and graphical form.

For instance, in the below example this grower has a large picking peak at ISO weeks 14 and 15. To manage this timing additional pickers will need to be hired, additional hours worked (carefully evaluating the cost in over time associated with doing this) or harvest management products will be needed to spread that volume (eg. Retain, Harvista) to ensure fruit is harvested in optimal condition.



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.

STATE	CONSULTANT	EMAIL	PHONE
OrchardNet Administrator	*Adrian Stone*	adrian.stone@agfirst.co.nz	+64 6 872 7074
AgFirst (NZ)	*Ross Wilson*	ross.wilson@agfirst.co.nz	+64 27 449 0775
AgFirst (NZ)	*Craig Hornblow*	craig.hornblow@agfirst.co.nz	+64 27 436 8441
AgFirst (NZ)	*Steve Spark*	sspark@agfirst.co.nz	+64 27 437 2344
AgFirst (NZ)	*Jonathan Brookes*	jonathan.brookes@agfirst.co.nz	+64 27 208 8750
AgFirst (NZ)	*Nic Finger*	nic.finger@agfirst.co.nz	+64 27 221 4835
FLA North Victoria	*Michael Crisera*	growerservices@fgv.com.au	+61 448 288 253
FLA South Victoria	*Camilla Humphries*	chumphries@eem.com.au	+61 427 111 852
FLA Batlow	*Kevin Dodds*	kevin.dodds@dpi.nsw.gov.au	+61 427 918 315
FLA Orange	*Jess Fearnley*	jessica.fearnley@dpi.nsw.gov.au	+61 437 284 010
FLA Tasmania	*Sophie Folder*	sophiefolder@internode.on.net	+61 439 247 172
FLA Queensland	*Stephen Tancred*	stephen@orchardservices.com.au	+61 407 762 888
FLA Western Australia	*Susie Murphy-White*	susiemurphywhite@gmail.com	+61 429 413 420
FLA South Australia	*Paul James*	paul@lenswoodcoop.com.au	+61 419 826 956