

Grower case study — CT15017 Building a genetic foundation for Australia’s citrus future through targeted breeding

Grower	Nick Ulcoq
Property	Riverbend Citrus, Glenrae QLD
Planted area	24 ha

What was the research about

From 2016 to 2021, CT15017 *Building a genetic foundation for Australia’s citrus future through targeted breeding* (delivered by Q DAF) supported a diverse and comprehensive breeding program to develop improved, quality varieties for the Australian citrus industry. The main highlight was the release and commercial adoption of two new mandarin varieties known as ‘Premier Murcott’ and ‘CB Murcott’. The development of the new low-seeded varieties represented a concerted effort to combine attractive fruit appearance with good eating quality.

What was your involvement in CT15017?

Nick Ulcoq’s property near Glenrae, Queensland was one of the commercial trial sites for the new mandarin varieties, Premier Murcott and CB Murcott. The plantings started in 2017 with 900 trees (2.5 ha out of the total 24 ha planted area) including Premier, CB, and another variety still in the trial stage. The plantings are now in their third year of fruit production.

What were the primary factors contributing to the decision to participate in CT15017?

Nick was involved in the early setup of the project, which had some clear goals. “The drive was to try and find varieties that were improvements on what we already had (Imperial) and to find varieties that were mid-season mandarins, and varieties that were low seed and easy peel to meet the demands by supermarkets on the domestic market, but also an option of exporting on the export market”. Focusing on Murcott was also a priority given they are one of the few Australian citrus fruits that meet Japan’s strict import protocols.

What worked well?

Nick feels that the two new varieties have performed well fitting into the seasonal variety mix. “These new varieties come in at a different time to Imperial. The Premier has been quite good because its fitted into a mid-season window (end May-start June after three crops) so that has fitted quite well in the domestic market. The CB we thought would be September but it’s actually earlier. It would probably hold on the tree longer but seems to at its best July to mid-August”.

While it is still early days for the new varieties, Nick is optimistic about their performance in the market, “they look promising so far, the mid-season Premier is low-seeded and easy peel, so it has better quality and appeal, and we are happy with how it has performed in the domestic market so far. The existing varieties we had in that timeframe were all quite seedy. So hopefully the new varieties will result in increased demand but its a bit hard to tell as there aren’t enough fruit to sell and differentiate on the market”.



Discussing the new varieties at Riverbend Citrus (supplied Nick Ulcoq)

What were the challenges?

Nick feels that the new varieties have not brought up any significant production challenges. “They have not been difficult so far. I expect there will be some things that we need to learn about fruit set, getting maturity when we want it, what fertilizers and so on, but I don’t feel that its a steep learning curve”.

Looking to the future, Nick will be interested to see how the new varieties perform on the export markets. “None has been exported at this stage, but I believe work has been done showing that they hold up to cold storage”, said Nick. “In my view Premier could be a riskier one to export because it’s a softer fruit, but this may be managed with harvest timeframes, irrigation, fertigation etc”.

While the new varieties have improvements in some areas such as seedlessness and easy peel, at this early stage Nick thinks there are still some characteristics of the seeded Murcott varieties that are superior. “One of those is the size of the fruit, the others are the yield and also shelf-life which can be impacted with the lower seed varieties”.

More broadly, Nick highlighted the challenge of aligning long-term breeding programs with changing market trends. “The other thing with seedy Murcott, and why we went down this track was consumer and supermarket demand. We couldn’t sell Murcott domestically because of the seeds, but now we can. So knowing you can get good production from the seedy Murcott and export it, and now you can sell it domestically even with seeds, this takes away some of the advantage of the new varieties. But I think in the long term the seedy ones will become less appealing as more of these new varieties come on with improved characteristics (firm, taste, colour, seedless)”.

What were your key takeaways?

Overall, the new varieties have integrated well into Nick’s citrus operations and the early results have given him the confidence to expand the plantings of the new varieties since the original trial. “In my view they are sitting favourably in the variety mix. Particularly premier as its early. In think there is a good chance they will increase their industry production share over the years, but its hard to tell. We’ve had 3 years of cropping and we are quite happy with them and have planted more Premier with plans for more CB, but until you’ve had 12 years its hard to be confident to go out and plant your whole orchard”.

Photos of new varieties CB Murcott and Premier Murcott developed through CT15017 (supplied Nick Ulcoq)



CT15017 Building a genetic foundation for Australia’s citrus future through targeted breeding was funded by Hort Innovation, using the citrus research and development levy and contributions from the Australian Government. Hort Innovation is the grower-owned, not-for-profit research and development corporation for Australian horticulture. For more information visit www.horticulture.com.au.

For more information on this grower case study, please contact George Revell, Principal Economist at Ag Econ, through george@agecon.com.au.