

Promising NIS yields from high-density planting of cultivar P at Bundaberg

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High density planting of the cultivar P at Bundaberg at 625 trees per hectare resulted in an anticipated yield of 3.75 t/ha NIS from the four-year-old trees in 2023. In this article, Roger Broadley takes us through the details.

In January 2023, we visited a high-density orchard of P cultivar at Moorlands, a few kilometres north of Bundaberg, courtesy of Macadamia Farm Management (MFM). The trees were planted at 8 x 2 m spacings (625 trees/ha) in August 2018, making them just 4.4 years old at the time of the visit.

Each tree was bearing around 6 kg of nut-in-shell, making the estimated yield about 3.75 t/ha NIS, a good result for such young trees. Harvesting was scheduled to start in the second week of February 2023. P trees are precocious, as demonstrated by the fact that this block was harvested in 2021 with a yield of 1.56 t/ha NIS recorded.

An efficient performer

P is a smaller tree than average, with good yields shown in the Bundaberg area by the Department of Agriculture and Fisheries (DAF) Regional Variety Trial 3 (RVT3) trial results over a nine-year period, and a kernel recovery of around 38.9%. Original yield data in the RVT3 trials were based on a tree density of roughly 316 trees a hectare.

P is also an efficient cultivar in terms of the amount of kernel produced per cubic metre of canopy. It is characterised by long flower racemes and an ability to set clusters of nuts.

Previously, while we had always thought that yields might be higher when P cultivar trees were planted in a higher density situation, we did not have the detailed field data to recommend this. While it is still early days, with good nutrition and water management, we expect these early high yields at MFM's Moorland block to continue. The plan for the orchard is to remove every second tree at some time in the future.

View from the orchard

According to Scott Allcott, Managing Director of MFM, which currently manages 4000 ha of macadamia orchards mostly in the Bundaberg growing regions, cultivar P has potential for high density due to its compact, small nature.

"It does also have good side branching with nearly 90-degree branch angles often observed. With parents such as A16 and 814, I do feel that the cultivar will perform for many years due to its overall size. The kernel quality appears to be of good overall appearance," he said.

MFM has plans to use P cultivar in more high-density orchards.

Very low NIS per kilogram prices have been noted for the 2023 season. This means it is important for trees to start bearing early and to produce high kernel yields per hectare (a combination of NIS yields and percentage kernel recovery of each variety). P cultivar appears to have the capacity to do this.

Budwood availability

Over the past few years, it has taken some time to build up significant amounts of budwood of G, J, P and R, but we are now at a stage where budwood availability is not a limiting factor for future plantings. You can find nurseries that are licensed to supply trees in NSW and Queensland on website <https://macadamiainnovation.com.au/nurseries/>.



P trees in high-density Moorlands block managed by Macadamia Farm Management.



Nearly mature nuts on trees in high-density P trees, January 2023



The P cultivar has long flower racemes (photo credit Michael Cameron)

Good news for growers planting high-density orchards

The IP owner of industry cultivars G, J, P, and R, the State of Queensland through its Department of Agriculture and Fisheries, has capped the royalty rate for plantings greater than 350 trees/ha, rather than charge on a per tree basis. For growers who wish to plant at normal densities up to 350 trees/ha, the existing royalty rate per tree will apply.

The royalty fee is discounted for growers who buy more than 5000 trees at one time (any combination of one or

more G, J, P and R cultivars). This means that if trees are planted at high density (> 350 trees/ha) and more than 5000 trees are ordered, the total royalty cost will be as little as \$1,050/ha.

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