

# High-tech coffee in the tablelands

By JULIAN CRIBB

**M**echanical harvesting has given the green light to the establishment of a bright new Australian farm industry — coffee.

A breakthrough in the use of automated harvesting at Mareeba, north Queensland, has paved the way for profitable domestic coffee production after more than three quarters of a century of imports.

In one fell swoop it also moves Australia into the forefront of modern production systems for coffee.

Australia had a significant coffee industry in Queensland back at the turn of the century — but high labour costs and heavy frosts killed it.

Now Mareeba Coffee Plantations, run by Dick and Nat Jaques, just inland from Cairns, is proving all over again that coffee is a potential goer in this country.

It's a move which could ultimately go a long way to replacing Australia's massive \$100 million-dollar-a-year coffee import bill with a home-grown product that may in turn one day become a new farm export industry.

For some years it has been known that coffee can be successfully grown under Australian conditions — the cruncher was the massive labour costs involved in hand-harvesting the cherries.

Economic studies suggested that only under peak world market conditions would Australian coffee production be viable.

That was until the Jaques brothers, with years of coffee experience in East Africa behind them, decided mechanical harvesting was the answer.

Using a New Zealand-designed machine used to harvest redcurrants, raspberries and blueberries, they have shown that Australian coffee is more than likely to be a money-spinner.

Before importing the \$70,000 machine they calculated they would need to be able to take off at least 1.5 tonnes of green beans per acre to achieve a good return.

They were therefore reasonably delighted to find that the machine was capable of harvesting in excess of two tonnes/acre from coffee trees yielding nowhere near their best.

The Jaques plan to take of their first commercial coffee crop in just under a year, and so have plenty of time to fine-tune the auto harvesting gear.

As an indicator of what the machine will save, it will enable the two brothers to operate a 40-hectare coffee plantation on their own, compared with a 200-man workforce which is usually required in most other parts of the world where coffee is grown.

Dick Jaques' early projections indicate that the plantation will be producing coffee selling for \$3 to \$4 a kilo of green beans for an all-up production cost of around \$1.50 a kilo, though he cautions these are early figures.

On that basis, the brothers are already opening up a further 40 hectares of coffee in addition to the existing plantation.

The cornerstone of the Jaques' plans for the Mareeba coffee project is high technology — as contrasted with their more traditional coffee operations in Tanzania.

The trees are all of the arabica variety — the world's most highly-prized and popular type of coffee.

They are grown on a buried computer-regulated drip irriga-

At Mareeba the trees are all planted on low ridges which follow the contours of the land, as a soil conservation measure.

The harvesting machine straddles the rows, plucking the cherries from each side.

Dick Jaques believes there may be many more areas of Australia suitable for coffee production besides the Atherton tablelands: the main requirements are that the area be totally free from frosts, have a good reliable supply of water



The key to success of the Jaques' coffee venture is this New Zealand-designed berry harvester.

tion system to iron out the irregularities in growth and ripening which occur when natural rainfall only is used to water coffee.

Even ripening, Dick points out, is an essential part of any machine harvesting system.

Nutrients are supplied through the irrigation system, and insects and fungal attacks controlled by spraying as the need arises.

So far, says Jaques, problems from pests have not been severe — but it is still early days for coffee in Australia.

**With a cost of one million dollars for 40ha it is not an investment for the faint-hearted.**

Harvested fruit are pulped, dried and hulled on-farm to remove the outer skins and leave them at what is known as the "green bean" stage.

Coffee requires a heavy capital investment, and then plenty of patience to await the return: trees do not start to yield until four to five years old and do not start to show a real return until year six or seven.

Dick Jaques estimates the cost of putting in 40 hectares of coffee trees at between three quarters and one million dollars, so it is not an investment for the faint-hearted.

and preferably a tight rainfall pattern (ie so the crop does not ripen unevenly).

Coffee arabica grows naturally in the Abyssinian mountains above 1000 metres where rainfall is up to 2000mm a year, but in Australia it has been grown all the way down to the coast.

Like other tree crops it requires good weed control, and attention to pruning and training to achieve a tree suitable for mechanical harvesting.

Although coffee is still a relatively "new" crop in Australia, the development of the auto harvester puts us at the forefront of world coffee technology, Jaques believes. Brazil is the only other nation to have a few prototype harvesters in the field — and because of the huge structural changes they imply, adoption there and elsewhere is expected to be slow.

Jaques warns that coffee is no crop for the dabbling amateur. He and his brother Nat only began to set up the parameters for Australian production after years of experience elsewhere.

And with million dollar investments for just 40 hectares, you can't afford to make a mistake, he warns.

Nevertheless he feels the crop is destined for a slow but steady expansion in Australia — to the point where, one day perhaps 25 years hence, we will be largely self-sufficient — and possibly among the ranks of the world's big coffee traders too. □