

# Benefits of controlled traffic farming

The Mackay experience

123

Bradley Hussey

Development Officer –  
Farming Systems

Professional Extension and  
Communication Unit

*Many growers in the Mackay region have moved to controlled traffic farming. This system is built on permanent wheel tracks where the crop zone and traffic lanes are permanently separated. Growers using this system have reaped a number of benefits.*

## Experiences from the Mackay district

An analysis of 2012 Mackay region productivity data established the level of adoption and productivity of controlled traffic farming.

**Table 1** shows the production areas in hectares for the various row spacings used in the district. In cane farming, controlled traffic systems are based on row widths of 1.8 to 2.0 metres because they are best suited to the harvesting and haul-out equipment.

From the table it can be seen that the most popular row spacing is 1.6 m at 42.6 per cent of area, 1.5 m at 26.2 per cent of area and 1.8 m at 23.9 per cent of area. If we consider 1.8 m and above as a suitable row spacing for controlled traffic then 28 per cent of the Mackay district is farmed at this spacing.

## Productivity

To analyse the productivity of this system, we combined the yields of the row spacings from 1.8 m and above as being controlled traffic and compared that to the yield of the narrow row spacing, from 1.5 m to 1.7 m. **Table 2** compares the yields

of controlled traffic farms against that of non-controlled.

These totals show there is no yield penalty in moving to wider row spacing. In fact, there is very little difference between the yields of the two farming systems, though note that this result is from commercial mill data with a sample size of 60,000 ha from farms with varying practices. The large sample size adds to the confidence we can have in the data that there is no yield penalty in moving to wider row spacing.

To analyse the data further, we looked at the yields achieved for various crop ages at the various row spacings. We had data out to 6 ratoons and kept a large sample size of a minimum of 50 blocks for each comparison. We chose to compare the 1.5 m conventional row spacing to the 1.8 m controlled traffic row spacing as each had a total area of about 15,000 ha.

**Figure 1** shows that the cane yield for 1.8 m row spacing was slightly higher than for the 1.5 m spacing for all crop ages out to 6th ratoon.

We also looked at the yield achieved for each major row spacing used in the industry. The yield data showed

very little difference between the spacings of 1.5, 1.6 and 1.8 metres. This fact should give growers confidence that they can move to wider row spacing without losing yield.

## Benefits of controlled traffic

While similar yields are produced for all row spacings, the wider rows suited to controlled traffic lead to increases in field efficiency.

The move from 1.5 m to 1.8 m rows reduces the travel required per hectare by 1,100 m which lowers production costs.

Economic analysis of the controlled traffic system has shown a drop in growing costs of \$153/ha. Most growers who use controlled traffic have also adopted zonal tillage and fallow legumes to cut costs even further.



**Table One:** 2012 Mackay Area Productivity Services data.

Row spacing (m)	Production area (ha)	Per cent of total area
2.0	1,867	3.1
1.9	540	0.9
1.8	14,225	23.9
1.7	1,905	3.2
1.6	25,368	42.6
1.5	15,578	26.2

**Table Two:** Yields for controlled and non-controlled traffic farms.

Controlled traffic yield (t/ha)	Non controlled traffic yield (t/ha)
81.2	79.4

### Key features of controlled traffic system

- > 28 per cent of the Mackay region farmed this way
- > No yield penalty
- > Similar yields at a lower cost
- > Costs cut by \$153/ha

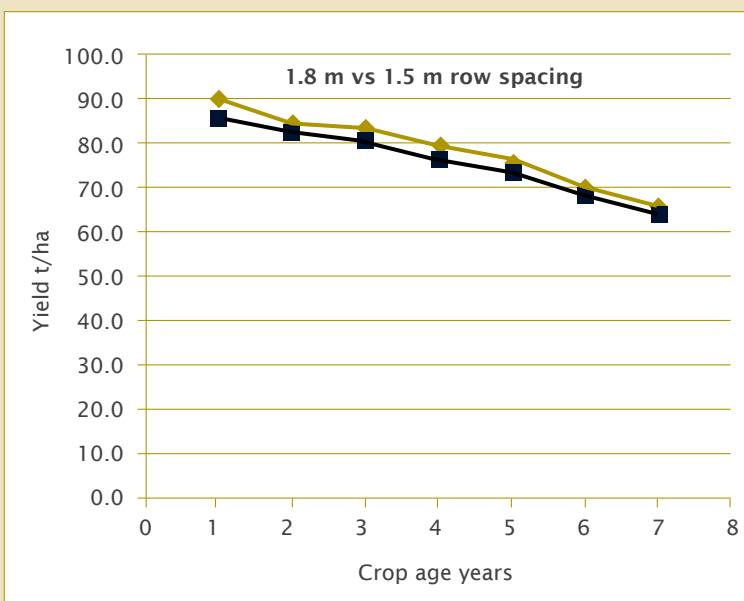
## Sweet success

Vince Germanotta, a canegrower from the Homebush area south of Mackay, has adopted a controlled traffic farming system using 1.83 m single rows.

Vince cultivates plant cane with three-row equipment at a 5.5 m width per pass. This produces a work rate of over 4 ha per hour.

"The controlled traffic farming system has improved my farming efficiency," said Vince.

"By using this system I have also been able to adopt zonal tillage and band spraying, which has reduced my input costs but still maintained my yields."

**Figure One:** Comparison of cane yields at row spacings of 1.8 m and 1.5 m for various ratoon ages.

—◆— 1.8    —■— 1.5

### Steps to consider when moving to controlled traffic farming

- > Deep ripping and cross ripping blocks to remove any underlying compaction before implementing the new system.
- > Block layout and farm design: realigning and amalgamating blocks done while changing row spacing.
- > Building improvements to the whole farm drainage plan into new rows and layout.
- > Using GPS to set the new row spacing, if possible.
- > Adjusting tractor wheel widths and machinery spacing to suit the new row width.