

You are better off under the 'new farming system'

Yes, although at times you probably have to wonder, you are better off farming the way you are now, rather than the way your grandfather did. Cane farmers, by moving away from traditional farming systems, have reduced their input costs significantly and have gained extra income according to a recent BSES project at Bundaberg.

Dr Peter Allsopp, BSES QCrops manager said the project traced a hypothetical but typical farm through three time periods:

- 1960–70 (traditional farming system);
- 1970–80 (past farming system); and
- 2000–present (new or improved farming system).

The dramatic changes in farming systems over time can be clearly seen in the hypothetical models used in the project:

The Traditional Farming Model – 1960 to 1970

- Plant crop and two ratoons, burnt prior to harvest;
- Twenty-five per cent of farm fallowed – poorly managed cover crops;
- Three 67 kW and one 50 kW tractors, variety of implements; and,
- 2.5 on-farm workers.

System:

- Many in-field operations and tillage practices;
- Whole-stick planting;
- Relatively low nutrient inputs;
- Restricted irrigation;



At work in the sixties.

TABLE 1: How the systems compare

Parameter	Units	Farming systems used		
		Traditional (1960–70)	Past (1980–90)	Improved (2000–present)
Sugarcane production area	ha	56	69	55
Cane production: Farm	t/yr	4256	6031	4389
Estimated cane yield: Farm	t/ha/yr	76	87	80
Sugar production: Farm	t/yr	606	820	610
Estimated sugar yield: Farm	t/ha/yr	11	12	11
Total variable costs: Farm	\$/ha/yr	1799	1929	1689
Variable costs: Plant cane	\$/ha/yr	2536	3059	2539
Variable costs: Ratoon cane	\$/ha/yr	1289	1551	1467
Fixed costs: Farm	\$/yr	99,520	75,880	38,247
Gross margin: Bare/poor fallow	\$/ha/yr	-283	-323	-73
Gross margin: Legume crop	\$/ha/yr	n/a	n/a	1 550
Gross margin: Farm	\$/ha/yr	501	562	656
Profit: Farm	\$/yr	-71,000	-37,000	33,000

- Weed control reliant on extensive cultivation; and,
- Insect control with available chemicals (especially BHC).

The Past Farming Model – 1970 to 1980

- Plant crop and three ratoons, burnt prior to harvest;
- Plough-out/replant strategy, limited bare fallow;
- One 82 kW and one 67 kW tractors, variety of implements; and,
- 1.8 on-farm workers.

System aimed at a sugarcane monoculture:

- Land preparation – multiple passes with ripper/rotary hoe;
- Move towards contract planting using billet planters;
- Increased use of nutrients (to minimise risk?);
- Increased irrigation;
- Combination of cultivation and chemical control of weeds; and,
- Insect control with available chemicals (suSCon Blue, Mocap).

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Getting down and dusty in the seventies.

<4...YOU ARE BETTER OFF

The New Improved Farming Model – 2000 to now

- Plant crop and four ratoons, trash retention;
- Twenty-eight per cent of the farm under break cropping;
- One 93 kW tractor, fewer implements; and,
- One on-farm worker.

System:

- Fewer/less aggressive in-field operations;
- Rationalised nutrient inputs aimed at sustainability;
- Efficient irrigation practices;
- Mainly chemical control of weeds;
- Insect control with newer chemicals used strategically (suSCon Maxi, Confidor); and,
- Well-managed and harvested legumes – ‘break’ period and income.

The project applied the ‘hip pocket nerve’ test to the various systems. General characteristics, inputs and typical yields associated with each period were used together with current input values and commodity prices:

The modelling for the hypothetical farm suggests the improved farming system is delivering a profit of \$33,000 per year – \$104,000 more than if the traditional approach was still being used. If growers had continued to operate the way their predecessors farmed, they would currently be losing \$71,000 per year.

Peter says the farming system has changed markedly over the past 40 to 50 years. These changes have had environmental, social and profitability benefits.

Environmental benefits include:

- Rationalisation of fertiliser use;
 - ‘Softer’, more targeted insecticides;
 - Less fuel usage; and,
 - Optimisation of water use.
- Social benefits include:
- Reduced labour needed to grow crop

- No pre-harvest burning
 - No post-harvest burning of tops
- “RD&E has contributed significantly to this change because it has driven the overall sustainability and viability of sugarcane growing enterprises, and consequently that of the entire value chain,” says Peter. “Changes have given growers the ability to keep growing cane and to keep supplying this cane to mills which has kept the mills in business.”



Today's new and improved approach.

WHAT DRIVES PROFITABILITY?

Despite the importance of water (availability and management) and appropriate varieties, Peter believes profitability improvements are largely due to the adoption of improved farming practices with reductions in fixed and variable costs and legume income.

He says more gains can be made with further adoption of best practice management on-farm.

“We encourage growers to embrace the principles of best practice management that are now accepted as fundamental to further improvements in sugarcane productivity and profitability and to maintenance of the resource base.”

The project team: Dr Bernard Schroeder, Tony Linedale and Dr Peter Allsopp, BSES; and Trish Cameron, QDPI&F.

For more information : The Project findings were presented at the March BSES Activate Breakfast: contact Eve McDonald, BSES Communications Manager, phone (07) 3331 3340. ■

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