

MODULE 1

SOIL HEALTH AND NUTRIENT MANAGEMENT



YOUR FARM, YOUR WAY Smartcane BMP is a program for you to document and celebrate the way you farm.

What is this about?

The way you manage soil and nutrients has changed significantly in the past 20 years. One of these changes is retaining trash to conserve soil, improve soil health, and help keep weeds at bay.

Better use of ameliorants like gypsum, lime and mill by-products have improved soil chemistry and soil structure. Fallowing land helps break weed and disease cycles while improving soil health.

Not every option for managing soils and nutrients is equally suited to all situations. For example, legume fallows benefit the subsequent cane crop but can be harder to implement and profit from.

Using the Smartcane BMP program, you can describe your farming practices and see how these relate to current recommendations. The result is two-fold: you help to set the record straight about how we farm, showing how industry has changed and adapted over time, and you can explore options that will suit your farm and your goals.

Why is it important?

Soil health and nutrient management are bread and butter issues for your productivity. They also have a big impact on the risk of soil, nutrients and applied chemicals leaving the farm.

Optimising soil health and nutrient management is therefore a win-win situation. Having your practices documented in BMP also helps your industry secure its environmental reputation.

What's next?

REVIEW AND DISCUSS

If you'd like to document or review the way you manage soil health and nutrients, you can access Module 1 at [smartcane.com.au](https://www.smartcane.com.au). The module records your current practices, and the checklist format helps to identify options for further improvement.

Your district facilitator or productivity officer can help you follow-up on additional information, training or expert advice.

GET INVOLVED IN SMARTCANE BMP

Smartcane BMP has modules that cover different aspects of your cane farming business. It includes the option to become accredited in the farming practice modules (Modules 1, 2 and 3). Participation is entirely voluntary, and your facilitator can talk with you about what's involved and put you in touch with local growers who are also part of the program.

Contact your district facilitator to get involved.



Turn over for more information

What's in the module?

INDUSTRY STANDARD	ABOVE INDUSTRY STANDARD
MANAGING COMPACTION	
Where possible, delaying machinery operations in wet field conditions and matching row spacing and wheel spacing	Not operating machinery in wet field conditions and using GPS for all field operations—bed forming, planting, spraying and harvesting
TRASH MANAGEMENT	
Retaining green trash blanket on suitable soils or burning cane before harvest in areas prone to waterlogging	Retaining the green trash blanket throughout the crop cycle and after the final ratoon as a fallow cover
FALLOW MANAGEMENT	
Breaking pest and disease cycles by not growing cane during fallow seasons and spraying weeds before they seed	Growing rotational crops on fallow land to break weed and pest cycles and keeping residues from rotational crops on the soil surface
PREPARING LAND FOR PLANTING	
Using zonal tillage or reducing the number of passes—typically less than six—to reduce the impact on soil structure	Using zonal tillage and reducing the number of passes—typically less than three—to reduce the impact on soil structure, or using minimum tillage into preformed beds on a controlled traffic configuration
TILLAGE MANAGEMENT IN-CROP	
Keeping tillage in plant cane to the minimum necessary to establish row profiles and irrigation furrows, and for GCTB. Not using tillage ratoons other than applying of fertiliser and pesticide	Keeping permanent beds, strategically cultivating as required, and limiting cultivating plant and ratoon crops to coulters—applied fertilisers and pesticides
MANAGING SALINITY AND SODICITY	
Monitoring salinity and sodicity through soil tests and on-farm management practices, and reducing salinity to be in line with regulations	Monitoring root zone soil and groundwater conditions where you have identified salinity or sodicity
SOIL SAMPLING AND ANALYSIS	
Collecting appropriate soil samples from blocks to be planted and sent for analysis, and keeping records to refine nutritional programs	Mapping soil types, developing management zones and collecting soil samples for each management zone
CALCULATING OPTIMUM NUTRIENT RATE	
Using the SIX EASY STEPS™ method to build nutrient recommendations derived from soil test results and making deductions for other sources of nitrogen	Developing a whole-farm nutrient plan using the SIX EASY STEPS™ method
CALIBRATION OF APPLICATION EQUIPMENT	
Calibrating application equipment prior to the season and at each product batch change	Correctly using calibrated automatic controllers and variable rate application equipment
RECORD KEEPING	
Keeping records of soil tests, application rates, products, placement, and using records to make improvements to future nutrient management	Keeping records in digital form linked by GPS and using them to monitor and modify future nutrient management