



Participants at a SIX EASY STEPS workshop in Mourilyan in 2016.

The full monty on the SIX EASY STEPS nutrient management program

The SIX EASY STEPS aims at balanced nutrition and sustainable soil and nutrient management. It considers the underlying sugarcane farming system and all essential nutrients for sugarcane production.
By Bernard Schroeder, University of Southern Queensland

There has recently been much discussion and comment about the SIX EASY STEPS in terms of nutrient management in the Australian sugar industry. Although this attention has often focused on nitrogen (N), it is important to remember that the SIX EASY STEPS is an integrated and comprehensive nutrient management program. Nitrogen (N) management is only part of the overall package.

The goal of SIX EASY STEPS is to optimise conditions for effective, economic and efficient use of nutrients in the soil and those added by fertiliser or ameliorant applications.

The SIX EASY STEPS is focused on profitable production on-farm without adversely influencing soil fertility or causing off-farm effects.

It recognises the different sugarcane-producing regions and districts in Queensland and NSW. This includes the overarching climate and resources (such as soils and irrigation water) that enable the growing of sustainable sugarcane crops across these regions.

The SIX EASY STEPS program is based on a framework of six steps.

Steps 1 and 2 bring together knowledge of the farm, the different soil types, positions in the landscape and the opportunities and challenges for improving nutrient management on-farm.

Steps 3 and 4 are designed for use with full range soil tests from an accredited laboratory to enable interpretation of the nutrient requirements for each block on the farm. They also enable nutrient management plans to be developed and for determining and rationalising the fertiliser requirements for the farm as a whole.

Steps 5 and 6 enable expansion of the system to include a range of options for further fine-tuning of nutrient management options. This includes refinements for specific circumstances, when new information becomes available, and to meet an individual grower's needs or appetite for risk.

Steps 5 and 6 also provide the basis for a continual improvement and a loop back to the previous steps so that progress can be made along ongoing learning.

The SIX EASY STEPS program is being delivered to industry through a number of tools within the SIX EASY STEPS toolbox:

- District-specific nutrient management guidelines used within Step 4 (all districts).
- District-specific grower-orientated short-courses (most districts).
- District-specific short-course workbooks that are supplied to the course attendees (most districts).
- District-specific soil reference booklets (as funding has become available).
- The SIX EASY STEPS NutriCalc™ – an online nutrient management package that enables determination of nutrient requirements for blocks of cane based on location and soil test values (all districts).
- SIX EASY STEPS information sheets such as soil sampling and leaf sampling procedures (all districts).

Other tools that can easily be added to the SIX EASY STEPS toolbox are the:

- SRA FertFinder that enables users to identify the most appropriate fertiliser products and blends to suit their on-farm nutrient requirements
- Nutrient management plan process for use in the Wet Tropics and endorsed by the Wet Tropics Sugar Industry Partnership.

The SIX EASY STEPS framework:

Step	Description
1	Knowing and understanding our soils.
2	Understanding and managing nutrient processes and losses.
3	Soil testing regularly.
4	Adopting soil-specific nutrient management guidelines.
5	Checking on the adequacy of nutrient inputs.
6	Keeping good records to interpret trends and modify nutrient inputs when/where necessary.

The SIX EASY STEPS program is based on the results of past trials, current long-term field trials that have been monitored for more than 10 years, glasshouse experiments and laboratory investigations. Importantly, these results are interpreted individually, and in conjunction with data from elsewhere, by means of agronomic, economic and efficiency criteria. This approach enables a balanced and multi-faceted assessment of the guidelines that are contained in the SIX EASY STEPS program.

The SIX EASY STEPS program going-forward:

- The content of the SIX EASY STEPS program continues to be reviewed, updated and refreshed.
- Other options, outcomes and outputs from various projects and systems are possible within Steps 5 and 6.
- Some of these other options will align with the SIX EASY STEPS program. Others may be considered different from the intent of the SIX EASY STEPS and then should be considered as separate approaches.
- Just as researchers and development specialists are responsible for the systems and outputs they develop, growers, extension providers and advisors need to have confidence in, and take responsibility for, the system they choose, use and/or promote.
- The SIX EASY STEPS team has proposed a mechanism for assessing additions/modifications to the content of the SIX EASY STEPS program in future.
- It is envisaged that this will be done via the SIX EASY STEPS Advisory Committee (SESAC). This will enable setting of standards for accepting amendments to the SIX EASY STEPS guidelines and delivery package, and to consider developments within a review process. The SESAC will receive submissions for inclusion into the SIX EASY STEPS and assess their suitability following a refereeing process. The SIX EASY STEPS team will incorporate accepted data/information into the SIX EASY STEPS program as appropriate.
- This mechanism ensures that the SIX EASY STEPS program itself continues to grow according to the six principles. It also enables further 'tools' to be added to the SIX EASY STEPS TOOLBOX going forward.

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