

An aid tool developed in Réunion to manage the fertilisation of sugarcane using local organic materials: Ferti-Run

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Abstract

In Réunion, the Chamber of Agriculture promotes the use of local organic fertilisers for growing sugarcane – the predominant crop on the island.

To reach this objective, it is crucial to strengthen technical advice given to farmers and to improve farmers' fertilisation practices. In 2007, Cirad and the Chamber of Agriculture created Ferti-Run, a tool to help farmers improve the fertilisation of their crops. This tool allows rapid identification of fertiliser requirement using local organic materials. Ferti-Run was made available online in 2018. Here we present the operating principles that underpin this tool.

Users of Ferti-Run choose the crop they need to fertilise: sugarcane, temperate fodder, 20 types of vegetables and five fruits. They can then select an organic material from the list of 26 possibilities that are characterized for Réunion Island. The area of the plot to be fertilised is identified, as well as the type of soil on which the crop is grown. The tool automatically calculates the amount of organic fertiliser needed to best meet the nutrient requirements of the selected crop. In 2018, a new feature was introduced to meet users' needs. It now includes the possibility to add a mineral or synthesis fertiliser, in addition to organic material.

To calculate the fertiliser application rate, Ferti-Run integrates the area of the cultivated plot, the yield objective and the nutrient requirements of the crop, the soil type and the agronomic characteristics of the organic material. The tool produces a specific report for the cultivated plot and provides the requirements per hectare. The report shows the following: nutrient requirements, amount of organic material needed and nutrients supplied, amount of fertiliser to be supplied with corresponding nutrients, and, if applicable, the nutrient deficit to reach 100% of requirements of the crop.

Ferti-Run is updated regularly based on any new and/or additional science-based information. Available free of charge, it is accessible online or may be downloaded from the Chamber of Agriculture website (www.mvad-reunion.org).

Based on information specific to Reunion Island, this aid tool for mixed fertilisers could also serve as a model for other sugarcane-producing countries, given the simplicity of the underlying framework. For this to occur, the underpinning data will need to be replaced with locally-derived information such as nutrients requirements of the crop, N, P and K contents of products, corresponding fertiliser equivalence coefficients of the available organic materials, and the soils characteristics that impact on the nutrient requirements of the crop.

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