

NEW TOOLS CAN SIMPLIFY CROP NUTRIENT MANAGEMENT

By Lilian Schaer
TIMING MATTERS

Soil fertility is a complex topic, and it can be challenging to determine exactly what each crop needs and when. A new collection of online calculators that can help make that task easier are now part of the provincial government's agricultural and environmental software package—AgriSuite.

The new tools are part of an overall modernization of AgriSuite, which also includes the widely used NMAN and MSTOR programs to make the tools easier to use and more easily compatible with industry needs and processes.

This latest update now includes five easy-to-use calculators that can be used independently or in tandem to obtain simple estimates to support nutrient management decisions. Topics include field management, organic amendments, phosphorous loss, fertilizer and crop nutrients.

“AgriSuite is designed to give Ontario farmers versatile tools that will help them make the best possible soil management decisions on their farms,” says Christine Brown, field crop sustainability specialist with the Ontario Ministry of Agriculture, Food and Rural Affairs (OMAFRA).

FIELD MANAGEMENT PLAN CALCULATOR

This tool helps determine a crop's nutrient balance by considering nutrients from organic amendments, commercial fertilizer and previous nitrogen credits. This is important to help keep soil productive while minimizing the risk of nutrient losses that could be harmful to the environment, Brown says. The calculator uses field location and site details to help in its analysis, as well as nutrients removed through the previous harvest.

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“If we consider the nutrients in the soil like a bank account, crops remove nutrients while manure and fertilizer put nutrients back in,” she says, adding manure and other organic amendments can make striking the right soil fertility balance more challenging. “Keeping soil fertility levels in the ideal range is what this tool will help you accomplish.”

ORGANIC AMENDMENT CALCULATOR

This calculator will help producers get a better understanding of the nutrients supplied by manure applied on the fields. It calculates the amount of crop-available nitrogen, potassium and phosphorus (N-P-K) and applied micronutrients for each proposed application of organic amendments. It will also estimate the fertilizer equivalent value of each manure nitrogen, potassium and phosphorus application.

“Nutrients from organic sources don't come in predetermined blends, so this calculator helps take the guess work out of available nutrients,” Brown says, basing its estimates on sample analysis information and application rate, timing and placement.

The calculator allows quick comparison of the impacts of different timing or placement scenarios for estimated available nutrients.

PHOSPHORUS LOSS ASSESSMENT TOOL FOR ONTARIO (PLATO)

Phosphorus is an important plant nutrient for crop production, but it can also contribute to environmental problems when it ends up in rivers, lakes and streams. That's why decisions around how phosphorus is applied at what rate, what time and from what source are important when fertilizing a crop.

The PLATO calculator helps determine the risk of field-scale phosphorus based on site-specific characteristics



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and management practices, factoring in soil erosion and soil test levels, phosphorus application amounts and application timing.

“This is a great tool to help determine whether current crop management practices result in phosphorus loss,” Brown says. “For example, when phosphorus from fertilizer or manure is banded or injected, the risk of loss is negligible relative to surface applied phosphorus.”

FERTILIZER CALCULATOR

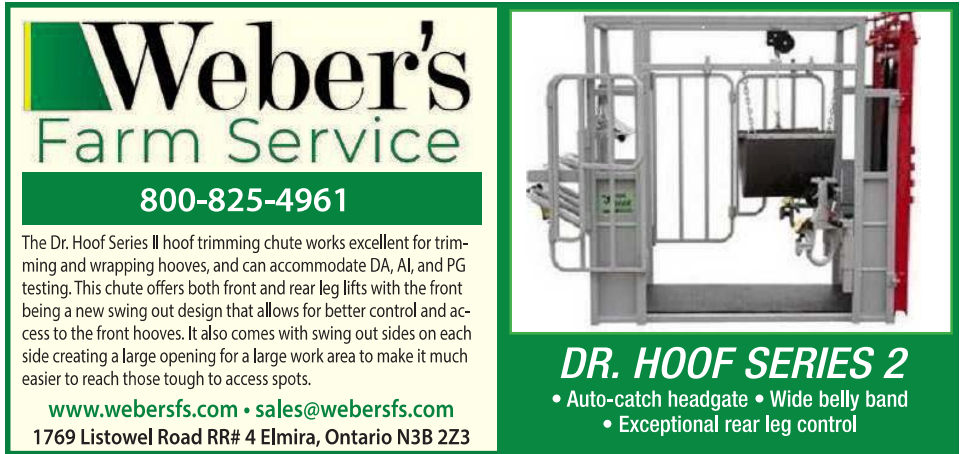
This tool provides the total commercial fertilizer applied to a single field, or calculates the blend of fertilizer, such as N-P-K and micronutrients, needed to complement nutrients already provided—through manure, for example—to best meet the needs of a specific crop.

CROP NUTRIENT CALCULATOR

This calculator provides agronomic crop nutrient requirements (N-P-K) based on soil test values, yield goal and location information entered by the user for each field. It also estimates the amount of nutrients removed from a field by a specific crop.

Additional calculators that are also part of AgriSuite are currently being updated. The entire collection of tools, which is free to use, is available at www.ontario.ca/agrisuite. The AgriSuite expansion and updating project was funded in part through the Canadian Agricultural Partnership.

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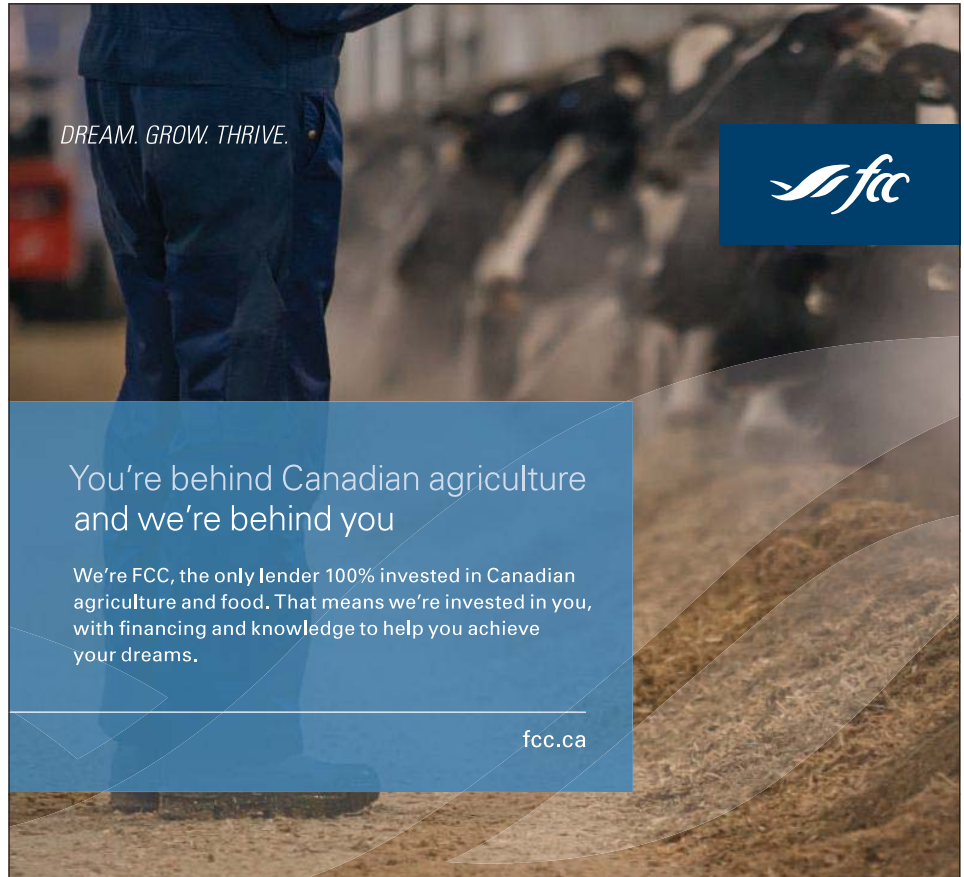
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