

## Make time to review nutrition

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Banana growers are being encouraged to make sure their fertiliser programs are the best they can be and aligned with Best Management Practice (BMP).



Rob Dwyer

Rob Dwyer, Tropical Systems Agronomist with Incitec Pivot Fertilisers, says it is important for growers to continually review the management options available and adapt their nutrition programs accordingly.

“There may be opportunities to change the timing of fertiliser application, application method

or the products used that will improve nutrient use efficiency in crop and improve productivity,” he said.

“Incitec Pivot Fertilisers has a wide range of fertilisers and blends that can be used in growing bananas for operational efficiency, productivity improvements and sustainability purposes.

“We recommend banana growers take the opportunity to review their nutrition programs and see where it leads.”

### Visibility

Mr Dwyer’s first tip for growers is to make the most of soil and tissue testing in plant crops.

“Staying in touch with your soil’s nutrient levels and nutrient uptake in the crop at key growth stages is vital,” he said.

He recommends using soil testing prior to planting and tissue testing at both the 10-15 leaf stage and then again just prior to bunching.

Mr Dwyer said there had been some improvements in nutrition testing over the past couple of years, including new tests for ‘potentially mineralisable nitrogen’ (PMN) and deep soil nitrogen.

“There is now recognition of the value of deep profile nitrogen and new soil tests are available to analyse nitrate, ammonium and mineralisable nitrogen levels at soil depths from 25 to 50 cm,” he said.

“These provide a better insight into the nitrogen reserves available to the crop.

“In fact, growers are often able to reduce nitrogen fertiliser applications in the first three months of crop growth if nitrogen levels in the subsoil are sufficient.”

Potentially mineralisable nitrogen is an indicator of the capacity of the soil microbial community to convert nitrogen from organic residues into plant available

nitrogen. It can be used in both shallow (0-25 cm) and deep (25-50 cm) soil samples.

“Again, this information can help growers quantify the nitrogen available to the plant crop and may allow for potential reductions in fertiliser applications,” he said.

These tests are available from Nutrient Advantage® Laboratory Services, a NATA® and ASPAC certified laboratory.



### Sustainability

Banana growers face ongoing challenges around maximising crop uptake of nutrients and minimising potential losses to the environment.

Mr Dwyer said the main nitrogen loss pathways in banana crops were run-off, leaching, denitrification and volatilisation. These losses can occur at any time throughout the year and are likely to occur on multiple occasions.

In reviewing their crop nutrition programs and selecting the most appropriate fertiliser products, banana growers can help address these challenges.

Mr Dwyer suggests considering actions such as:

- Broadcasting lower rates of fertilisers more often
- Switching some of the crop’s nitrogen requirement to fertigation with EASY N® liquid fertiliser (no dust, no dilution, no dissolving of solids)



- Finding alternatives to urea to minimise volatilisation losses, such as Cal-Am® or Cal-Gran® blends



- Avoiding phosphorus fertiliser applications during the peak months of the wet season to reduce run-off
- Matching fertiliser inputs to leaf growth rates i.e. increasing rates when the plant is growing rapidly
- Adopting the latest in enhanced efficiency fertiliser technology with ENTEC®,



Regularly reviewing and adjusting the nitrogen fertiliser form applied, so that it manages the primary nitrogen loss pathway most likely to be experienced over the next month to improve nitrogen use efficiency.

### Product choice

Banana growers can rely on Incitec Pivot Fertilisers to supply quality fertilisers with proven results in bananas over many years.

For planting, Mr Dwyer recommends Nitrophoska® Special.

**Nitrophoska®**  
*Special*

“It’s a high quality fertiliser well suited to planting, because it provides uniform delivery and distribution of balanced nutrition to banana crops,” he said.

Nitrophoska Special contains nitrogen, phosphorus, potassium (as sulphate), sulphur, calcium, magnesium and boron in every granule. The nutrients are readily plant available for rapid uptake by the crop.

The quality granules are also free flowing for more precise application and easy blending.

Mr Dwyer also suggests banana growers add ENTEC, an ammonium stabiliser, to Nitrophoska Special at planting.

“With ENTEC, an Enhanced Efficiency Fertiliser (EEF), the ammonium component is stabilised from converting to nitrate in the soil for several weeks, keeping it protected against leaching and denitrification losses,” he said.

“This means more nitrogen is available to the plant and less is lost to the environment.”

Mr Dwyer said blends based on Nitrophoska Special, such as Banana Phoska, can be used in situations where higher phosphorus demands are required, such as soils with low phosphorus levels or in high to very high phosphorus buffering index (PBI) soils.

He said Banana Phoska is well suited for use in plant and ratoon banana crops, as it also provides higher contributions of zinc (0.44%) and boron (0.26%).

To supply nitrogen and potassium to the developing plant or ratoon crops, he recommends Cal-Am and Cal-Gran blends.

For example, Cal-Am Banana Special is a blend of calcium ammonium nitrate and muriate of potash. Cal-Am Banana Tropic is a high potassium fertiliser with some nitrogen, phosphorus, sulphur and calcium.

“There are many Cal-Am blends developed especially for use in bananas, reflecting their greater need for potassium than other crops and constant nitrogen requirement,” he said.

“Cal-Am blends give crops fast access to nitrate nitrogen while keeping volatilisation losses to a minimum.”

The nitrogen component in Cal-Am is based on calcium ammonium nitrate.

There are several Cal-Am based blends in the Incitec Pivot Fertilisers’ product range and even more custom blends which are appropriate for use in bananas.

Mr Dwyer added that Cal-Gran blends are ideal to see plant and ratoon crops through to harvest.

The nitrogen in Cal-Gran is present in two forms, nitrate nitrogen and ammonium nitrogen, making it less susceptible to volatilisation losses than urea.

With fewer nitrogen losses and improved nitrogen use efficiency, Mr Dwyer says growers can expect great results in crop per unit of nitrogen applied.

“Cal-Gran also contains sulphur and calcium which are essential nutrients for banana crops,” he said.

“The form of calcium in Cal-Gran, apart from contributing calcium, helps reduce soil acidification and assists in maintaining soil health due to its neutralising value.”

Growers and advisers can select a Cal-Gran blend that matches their crop nutrient needs or create custom blends.

### New tool available

Banana growers can use the new [BetterBunch®](#) app for fast and easy record keeping.

BetterBunch is a time-saving device designed to assist growers in their everyday recording of on-farm practices to complement their Best Management Practices (BMP).

It is available free to growers who have completed the on-line version of the BMP. Any growers wishing to access BetterBunch or complete their BMP training should contact Robert Mayers, ABGC Extension Officer, on 0447 000 203 or email [robert.mayers@abgc.org.au](mailto:robert.mayers@abgc.org.au).



# BetterBunch

### Fertiliser program

In summary, consider the following nutrient program for bananas.

The program suggested is only provided as a guide and does not take account of regional or environmental factors or other relevant considerations.

Every crop and situation is different so growers are advised to see their local Incitec Pivot Fertilisers Distributor to arrange soil testing and review their fertiliser program.

Crop stage	Fertiliser	Rate	Frequency	Application method
Planting	ENTEC Nitrophoska Special	375 kg/ha	Once at planting	Mix the fertiliser with the soil in the planting hole. Mix thoroughly to maximise root access to applied phosphorus but ensure the fertiliser is placed below the planting material - not in direct contact with it. Alternatively, band and incorporate 5 cm below and to the side of the plant row to avoid direct contact with the planting material.
Second month post planting to 10-15 leaf stage	Cal-Am Banana Special	90 kg/ha	Monthly (or applied as a half rate, fortnightly, alternating between every second row)	Broadcast evenly at least 30 cm away from the base of the stool
15+ leaf stage to harvest	Cal-Am Banana Special	120 kg/ha	Every second month (alternate with below)	Broadcast evenly at least 30 cm away from the base of the stool
	Cal-Am Banana Special (S)	120 kg/ha	Every second month (alternate with below)	Broadcast evenly at least 30 cm away from the base of the stool
Ratoon crop	Cal-Am Banana Tropic	250 kg/ha	Every second month (alternate with below)	Broadcast evenly at least 30 cm away from the base of the stool
	Cal-Gran 50/50 (S)	300 kg/ha	Every second month (alternate with below)	Broadcast evenly at least 30 cm away from the base of the stool

*Note: Over winter, if minimum temperatures are less than 15 degrees for a prolonged period, it may be possible to omit a fertiliser application.*

For more information about Nitrophoska, Nitrophoska blends, ENTEC, Cal-Am blends and Cal-Gran blends, see your local Incitec Pivot Fertilisers Distributor.

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