



Macro Prima™

Nutrients (by w/v): Calcium 65 g/L · Potassium 25 g/L · Magnesium 5 g/L · Nitrogen 4 g/L · Sulfur 2 g/L

Fertiliser is one of the major input costs in agriculture. A wide range of environmental factors influence the accessibility of applied nutrition. Simply applying more fertiliser to increase plant access is unsustainable due to cost, accumulation of fertiliser salts, and generated acidity.

Macro Prima™ is formulated to enhance plant access to applied nutrition in both acidic and alkaline conditions, maximising access to standard rates of fertiliser. Easy access to nutrients results in greater yield potential, healthier crops, and an enhanced ability to manage crop stresses such as disease and extremes in temperature.

For non-calcareous alkaline soils, Macro Prima™ contains soluble calcium to displace and balance competing cations (sodium, magnesium and potassium) that buffer pH to alkaline levels.

Macro Prima™ contains soluble alkalising agents that can readily minimise acidity when banded with fertiliser at seeding in acidic soils. Ammoniated fertilisers can induce a localised concentration of hydrogen ions as they undergo nitrification — this is known as generated acidity. Tank-mixing Macro Prima™ with these fertilisers mitigates generated acidity, forming an important tool in your overall pH management strategy.

Nutrient Availability and Soil pH

Soil pH has a major influence on the availability of macronutrients. Nitrogen, phosphorus and potassium are most available at a neutral pH. This contrasts with micronutrients, which are generally more available in low-pH soils.

Soil pH	Nitrogen	Phosphorus	Potassium	Approx. Nutrient Use Efficiency
4.5	30%	23%	33%	29%
5.0	53%	34%	52%	46%
5.5	77%	48%	77%	67%
6.0	89%	52%	100%	80%
7.0	100%	100%	100%	100%

(Missouri Cooperative Extension Services)

Whether banding at seeding or as part of a mid-season foliar program, Macro Prima™ ensures your crop has increased access to available nutrition.



In-Furrow pH Management

A key component of an effective pH strategy is the use of Macro Prima™ in-furrow to mitigate generated acidity from liquid and granular fertilisers. By addressing the immediate seasonal impact of fertiliser use, longer-term pH management strategies can be more successful. A net-zero effect is often sufficient; higher rates may be necessary to address major issues.

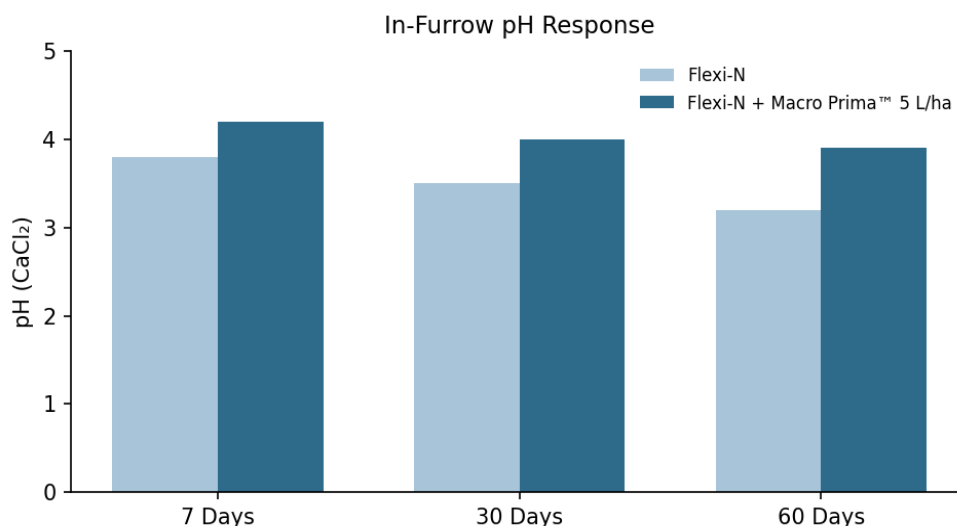


Figure 1. In-furrow pH response over time with Flexi-N alone versus Flexi-N plus Macro Prima™ (5 L/ha).

Improved Nitrogen Availability

Macro Prima™ can increase the availability of applied nitrogen. Sap nitrogen measured in-season was higher with the application of 5 L/ha of Macro Prima™. By altering furrow pH, nutrient uptake efficiency improves. An increase in root-zone pH from 4.5 to 5.5 can increase nitrogen uptake efficiency from 30% to 77%.

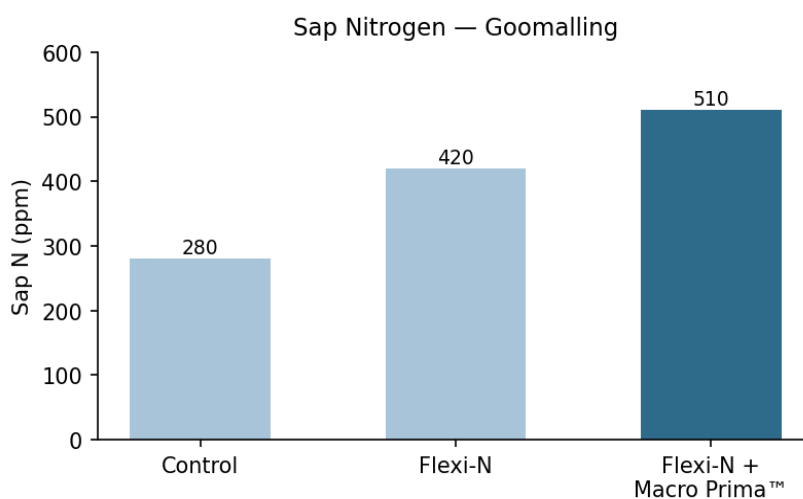


Figure 2. Sap nitrogen content (Goomalling) showing improved uptake with Macro Prima™.



Phosphorus Availability

Phosphorus is one of the nutrients most affected by low-pH soils. Uptake is extremely limited, falling to 23% at a pH of 4.5. Phosphorus is vital for early plant vigour and is a key trigger for yield potential. Planting is a critical time for phosphorus addition and for manipulating the furrow through injection. Raising soil pH from 4.5 to 5.5 increases phosphorus availability from 23% to 48%, supporting better early uptake and overall plant performance. The carbon content of Macro Prima™ is also important for phosphorus availability, increasing microbial and fungal activity.

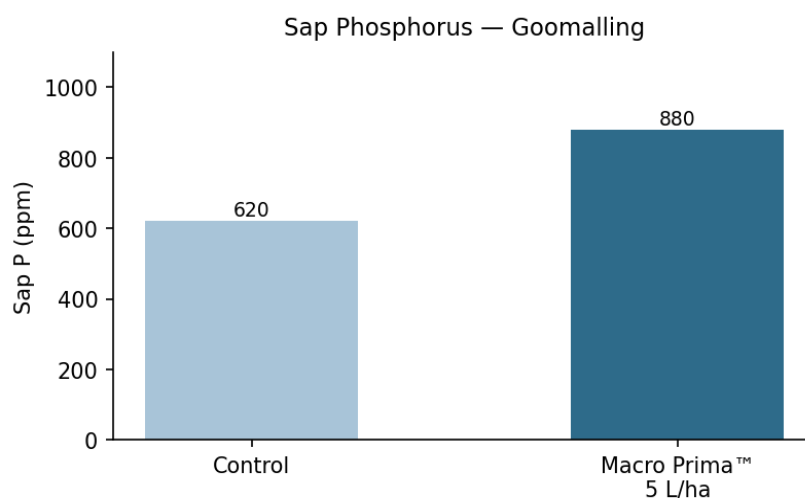


Figure 3. Sap phosphorus content (Goomalling) with and without Macro Prima™ (5 L/ha).

Potassium Availability

Potassium content and availability is a major issue in many soils. Unlike phosphorus, potassium availability increases rapidly with higher pH. Moving from a pH of 4.5 to 5.5 increases availability from 33% to 77% — a significant difference that can be further enhanced by potassium fertilisers at planting. Tissue testing is a useful method for assessing phosphorus and potassium status. Trials at Esperance have shown promising increases in potassium content with the addition of Macro Prima™, due to furrow pH manipulation and the addition of carbon for microbial activity.

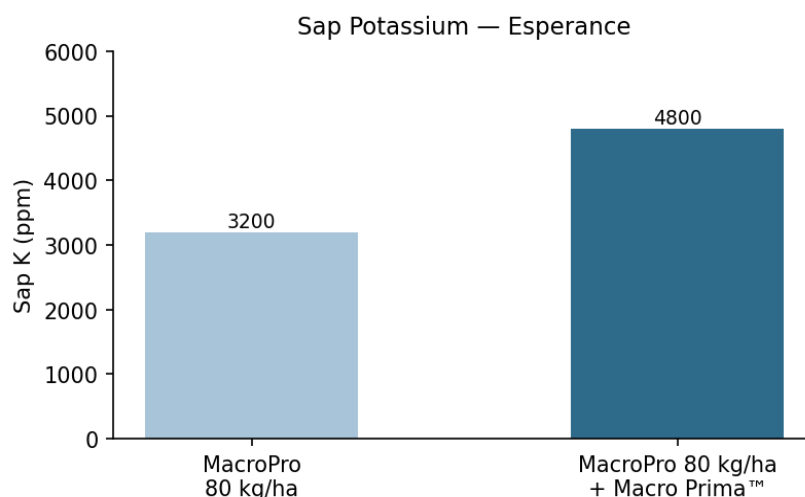


Figure 4. Sap potassium content (Esperance) comparing MacroPro alone versus MacroPro plus Macro Prima™.



Summary

Macro Prima™ is a practical tool for managing generated acidity in the furrow and improving access to applied nitrogen, phosphorus and potassium. By raising localised pH at seeding or through foliar application, it supports higher nutrient use efficiency, stronger early vigour, and better crop performance under stress.

Key Benefits

- Mitigates generated acidity from ammonium-based fertilisers
- Improves availability and uptake of N, P and K in acid soils
- Supplies soluble calcium to balance competing cations in alkaline soils
- Supports microbial activity through carbon content
- Easy to tank-mix and apply in-furrow or as a foliar
- Cost-effective at low application rates

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