

## FOLIAR FERTILISER VERSUS SOIL FERTILISER

### A guide to the key differences and a plan for utilising the benefits of both

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 Updated : 29th January 2016



#### What's in this Insight

This Insight shows the key differences and comparison between the benefits delivered by both foliar fertilisers and soil fertilisers.

#### Overview

RLF is a world class liquid fertiliser company that has developed highly advanced crop products for global agriculture. As the manufacturer and global distributor of these products RLF has a very keen understanding of the benefits delivered by its foliar fertilisers. Confusion sometimes exists however about the differences, however subtle they may be between the liquid and granular forms of fertilising. As the premise for RLF's Integrated Fertiliser Management (IFM) concept is to utilise the range of benefits fully from seed, soil and leaf, the check-list that follows should be considered a useful guide.

Foliar Fertilisers	Soil Fertilisers
Less energy used for ion uptake	More energy used for ion uptake
0% phosphate fixation	At least 90% phosphate fixation
Nitrogen and Potassium (N & K) uptake efficiency around 90%	Nitrogen and Potassium (N & K) uptake efficiency around 60%
No phosphate loss in sand soil	Phosphate loss in sandy soil
No nitrogen loss as ammonia gas	Nitrogen lost as ammonia
No nitrogen lost as nitrate	Nitrogen lost as nitrate
No impact on soil acidification	Increased soil acidification
More rhizobial activity	Rhizobial activity may be reduced
No need for lime compensation	Lime required to compensate acidification
Foliar stimulates photosynthesis	No direct impact on photosynthesis
Stimulates phloem loading of sugar	No direct impact on phloem loading
Stimulates transport of sugar and phosphorus	No parallel effect on sugar and phosphorus
Stimulates active root exudation	No parallel effect on root exudation
Stimulates rhizosphere activity	No parallel effect on rhizosphere
Exudates unlock phosphorus	No parallel effect on the unlocking of phosphorus
Exudates chelate more metals	No parallel effect on chelating metals
More rhizosphere bacteria	No parallel effect on rhizosphere bacteria
More N <sub>2</sub> - fixed by free living bacteria	No parallel effect on N <sub>2</sub> fixation
Less energy used by the plant	More energy used by the plant
More plant productivity (growth)	Less plant growth
Better soil sustainability and stability	Less soil sustainability and stability



## The IFM Model

Integrated fertiliser management (IFM) improves the performance of crops in so many ways, and the positive impacts include improvements and efficiencies such as :

- a reduction in the amount of granular fertiliser required
- more efficient water use
- increased plant strength and health
- assured crop quality and increased yield
- beneficial return of biomass to the soil

The success of IFM however depends upon the balanced use of three fertiliser components. They are :



- **Seed**  
Treating seeds with **BSN Seed Primer** to raise phosphorus and trace element levels to optimum or above optimum levels. This enables seedlings to set higher yield potential, form greater root mass and the vigour and strength required to better handle stress/disease related challenges.



- **Soil**  
Applying nutrient to the soil (usually in granular form) at optimum but not excessive levels. This is determined by fertiliser history, soil test and potential or expected yield.



- **Leaf**  
Using Ultra Foliar fertilisers to avoid hidden hunger and hidden yield losses – the sub-clinical deficiency that occurs before the plant's nutrient deficiencies become noticeable and identified through visual crop inspection. This is achieved through the use of specially-formulated foliar fertilisers and tank mixes to extend the momentum of root efficiency and growth.

The success of IFM however is jeopardised by :

- soil applications of granular fertilisers in excess of crop demand. Therefore, moderate NPK input and step-wise nitrogen applications should be practised – and this often means a reduction in soil fertiliser inputs by 10% - 20%.

An IFM program can deliver increased yield, more financial return, and all without greater financial outlay.

IFM is a powerful tool for the modern-day farmer who wants to improve not only his crop's potential today, but who wants to protect his land's potential for the future.

### Conclusion

Understanding the differences, and the particular strengths of the different forms of fertilisers available to the market today, can equip farmers and growers with the information and knowledge needed to plan and make decisions that increases productivity and enhances both crop and commercial outcomes.



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