



Ultra
Foliar



**Rural Liquid
Fertilisers**

ULTRA FOLIAR

Fertiliser for Modern Farming



**Nutrient
Delivery System**



**High-Analysis
Broad Spectrum**



**High-Performance
Formulations**



**World-Leading
RLF Product**

Trust. Grow. Yield.

www.ruralliquidfertilisers.com



Broadacre Plus

Broadacre Plus is an Ultra Foliar HBS (High-analysis Broad-spectrum Solution) that applies the RLF technology called NDS to deliver through the leaf the nutrient package.



This Ultra Foliar delivers the optimum amount of 12 nutrients in a single application.

Broadacre Plus is up to 350% more efficient in nutrient deliver as the formulation is absorbed directly through the leaf cell walls and into the plant for immediate use. Unlike other foliar it is not inhibited by the need to access the plant via the stomata.



Plasma Power

Plasma Power is an ULTRA FOLIAR fertiliser spray with NDS a Nutrient Delivery System that increases the efficiency in product uptake through the leaf by up to 350%.



With NDS Plasma Power delivers a high Phosphorus (P) and essential nutrients contained in a High-analysis Broad-spectrum solution.

Plasma Power provides the plant with an optimum balance of Phosphorus and essential nutrients to ensure soil nutrient variability and deficiency is fixed. Plasma Power gives you greater plant protection, more growth and improved yield qualities. This is done by using just



Fruits and Veggies Plus

Fruits + Veggies Plus is an Ultra Foliar HBS (High-analysis Broad-spectrum Solution) that applies the RLF technology called NDS to deliver through the leaf the nutrient package.



This Ultra Foliar delivers the optimum amount of 12 nutrients in a single application.

Fruits + Veggies Plus is up to 350% more efficient in nutrient deliver as the formulation is absorbed directly through the leaf cell walls and into the plant for immediate use. Unlike other foliar it is not inhibited by the need to access the plant via the stomata.

Crop Specific Foliar

Crop-Specific Foliar are products designed for a specific crop type. RLF lead the world in broad spectrum high analysis liquid compound fertilisers. These are called Ultra Foliar. RLF have developed a full range of crop targeted CSF Ultra Foliar products.

Using plant science RLF has engineered a complete range of Ultra Foliar products designed specifically for the crop. These are called Crop-Specific Foliar (CSF) and are the latest in crop focused nutrition - CSF ensure that the optimum nutrient levels are provided for the individual needs of the specified crop. This means that your Crop-Specific Foliar will work better and provide better results.

These fertilisers give the plant the resources to grow strong and helps ensure that the NPK-inputs (nitrogen, phosphorus and potassium) together with farm practices (herbicides and fungicide), achieve maximum gain.

It does this by delivering a complete Crop-Specific broad spectrum nutrient package - directly to the plant - that supports plant growth, strength and physiology thereby ensuring that NKP fertilisers and herbicides/fungicide are buffered during uptake for maximum gain.



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Proven to Work

RLF Rural Liquid Fertiliser first developed broad-spectrum compound foliar fertilisers in 1993 – well over 20 years ago. This product, named “K-Komplex” was the foundation of what today is a foliar product with in a class all of it’s own. RLF’s range of ULTRA FOLIAR products have been continuously improved and updated over 20 years of on-farm product use – and today RLF has an entire range of Ultra Foliar products representing the latest in a long pedigree of development.

RLF’s Ultra Foliar is a proven product, extensively trailed and tested but most importantly used since the early 90’s world-wide by millions of farmers year after year as part of their normal farm practices.

Keep the Crops on Track – Russell and Vicky Hooper

“The RLF program enables us to supply trace elements over a large area of our farm at optimum times. BSN Superstrike is fast and easy to use and it promotes bigger root systems which increase the uptake of granular fertiliser. The CSF and Plasma Foliars let us play the season and they mix well with the rest of the spray program. The products help combat the negative effect of SU use. The RLF products help us keep the crops on track.”

Farmers: Russell and Vicky Hooper	Property Size: 6000ha’s
Location: Merredin	Annual Rainfall: 320mm
Farm Enterprise: Wheat, Barley, Lupins, Sheep	Time on RLF Program: 7 years+



Easy to Use

Ultra Foliar application is identical to any foliar product and can be applied in the normal practices of spray application. A product that has a substantial compatibility profile – RLF Ultra Foliar products can be simultaneously sprayed in conjunction with other products such as pesticides or herbicide, other fertilisers or with irrigation. This reduces labour costs and makes the process of on-farm application simple. This means that normal farm practices are maintained, with no specialised machinery or equipment requirements. RLF Ultra Foliar products are a concentration in a clean solution that is readily dispersed when mixed with water – being a solution liquid it does not present any risk of blockage or equipment issues.





Vital for the Best Crops

RLF Ultra Foliar range is a unique High-Analysis Broad Spectrum Liquid Foliar Fertiliser that uses NDS to ensure that the trace elements are received by the plant at a rate approximately 300% better than normal foliar products.

Ultra Foliar

An Ultra Foliar is a leaf applied fertiliser product that in a single engineered formulation (High-analysis) contains up to 12 nutrient elements safely balanced (Broad Spectrum) without any chemical antagonism and at the required quantities to suit a plants optimum requirements. This can only be achieved when you can deliver nutrient at concentrated levels through the use of a delivery system.



Ultra Foliar is used by 2 million farmers

RLF Ultra Foliar products are used through-out the world today by over two million grower and farmer customers. For well over 20 years, this product has had so much "year-on-year on the crop" use by many loyal clients - who regard the RLF range of Ultra Foliar products as the standard in this area.

Confidently share in this experience as RLF Ultra Foliar products are applied to the crops, knowing that you are not alone in achieving the same great results that RLF Ultra Foliar products are achieving for its farmer customers throughout the world today. Ultra Foliar is a modern farming practice.



World-Leading
RLF Product

Supply and Satisfy the Plant

Ultra Foliar
Supplies Broad-Spectrum
Nutrients

The plants varied trace element
nutrition needs are handled.



Ultra Foliar use
NDS Delivery Technology

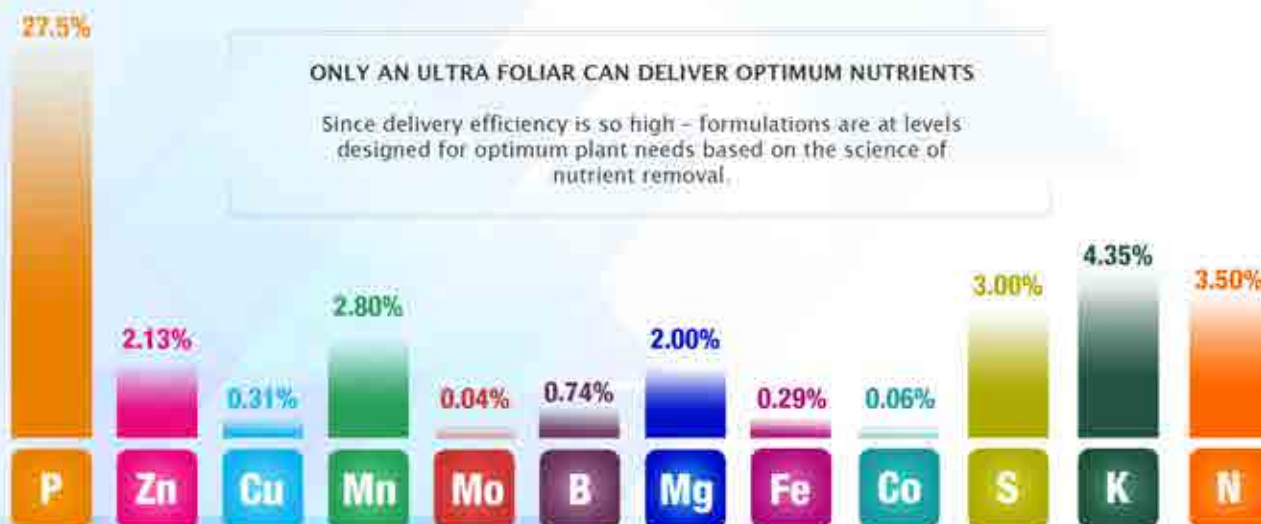
Solving the Nutrient Deficiency Problem

Every crop – every plant – has different trace element nutrient needs. The problem is that it is difficult to know what these specific requirements are – and impossible to treat every plant with a different nutrient solution being absurd to suggest that you provide different nutrients for different plants or crop sections. This however is the reality of farming practice aggravated further in that a single nutrient deficiency or variation could have a remarkable effect on plant health and future yield results and values.

RLF recognised this problem was creating issues in the successful management of nutrient deficiency and in the 1990's developed the first of its broad-spectrum foliar products as a response to fixing some of these problems. Since these early days the science of nutrient plant physiology has seen RLF engineer advanced and more concentrated products that are designed to change the way you can ensure nutrient deficiency issues are satisfied.

Nutrient Delivery System

The key to being able to formulate a broad-spectrum nutrient product was in the proprietary RLF NDS (Nutrient Delivery System). NDS would mean we had develop the way to safely transfer nutrient through and into the leaf and plant cell walls – effectively increasing nutrient delivery by over 300%. This allowed the formulations to be engineered at levels that could ensure stability and plant integrity without any risk of element antagonism created by having so many elements in a single product.



ULTRA FOLIAR



UNTREATED



BIGGER, STRONGER,
HEALTHIER ROOT SYSTEM



MORE GROWTH, STRONGER TILLERS
AND HEALTHIER PLANT



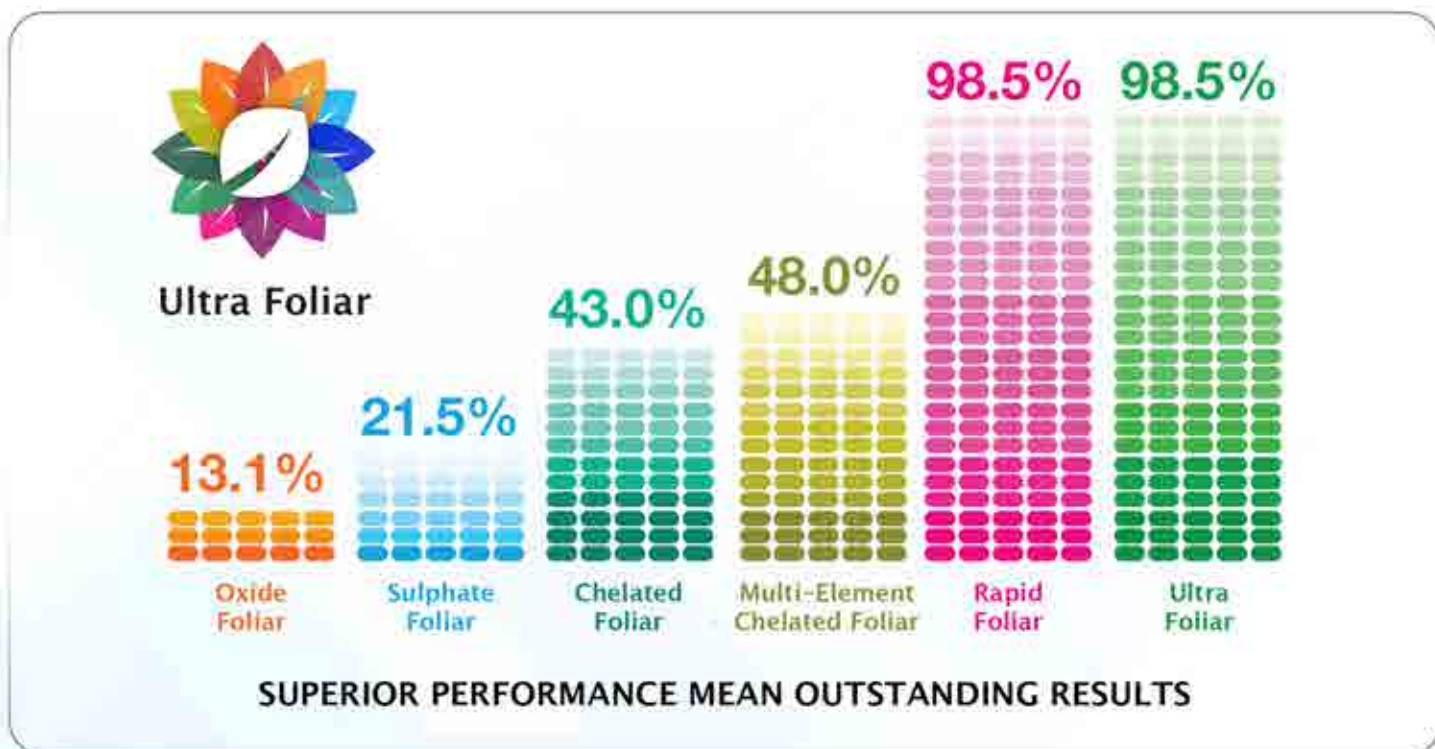
YIELD, QUANTITY,
AND QUALITY



Not a Normal Foliar

RLF's Ultra Foliar is not a normal foliar. It sits in a classification of its own – being substantially different in its substance but most importantly in its features and functional specifications that are required for a foliar product to physically or scientifically achieve real and tangible results. The Classification of foliar products, shown below, demonstrated how an Ultra Foliar product is different in its each area and rated classification.

Achieving a rated 98.5% factor is twice the result of the expensive leading chelated products available to agriculture today – and over 7 X the results of the most basic single element oxide foliar products.



How Does this Classification of Trace Elements Rating Work?

The classification of a foliar product is based on the assessment of the abilities of the product against thirteen performance attributes. Each of these attributes are based on science and plant physiology – they are the basic required for nutrition to work in a plant. They cover the state required for delivery of nutrient to the plant (as a foliar) and go through to the suitability for certain soil types – and such that they classify the rate at which a product is in a condition, substance and form that the plant can use and apply positively toward plants growth, development and future yields.

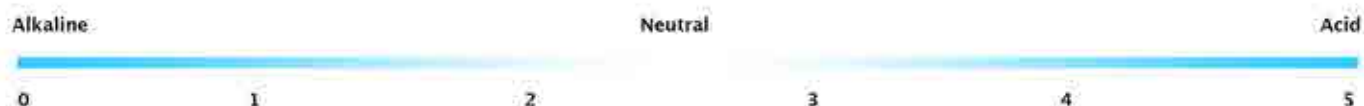
6 types of foliar products have been included and rated against the following attributes – with each product resulting in a score of between 1 and 5 for the ability to perform or achieve the attribute. They are listed and explained here.



World-Leading RLF Product

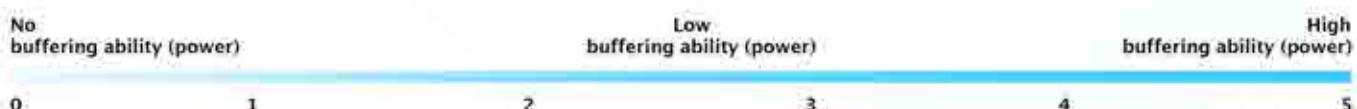
1 High Acidity/Low pH

High Acidity / Low pH is the most important attribute/rule when selecting a foliar trace element product. It is very important that the foliar product selected must be ACID (low pH) - WHY - In order to transfer the nutrient through the leaf you need acidity (hydrogen) to carry the nutrients from the outside of the leaf into the leaf and plant.



2 Buffering Power

If you have an high acid product it will need to be buffered so that you do not harm the outside of the leaf - and to ensure overall plant safety. High buffering ability (power) will ensure that the foliar product does not burn the leaf when applied and still can maintain the high acid rating required to transfer the nutrient.



3 Speed of Uptake

The speed of uptake is the rate of which the foliar applied nutrient is taken in to the plant (absorbed through the leaf) - this is a very important product attribute because you need the product to be taken up quickly to minimise the climatic risks of the nutrient breaking down, dilution or being washed off.



4 Transportability Speed of Nutrient Elements

Once the nutrient is in the plant - this is a measure of the efficiency and speed of the plant transporting (moving) the nutrient through the cells and to the required parts of the plant. Transportability efficiency is vital in accessing what makes a quality foliar - because getting the nutrient to the target parts of the plant that require it - is the only way that the plant nutrient deficiency will be quickly fixed.



5 Correct Deficiency of P

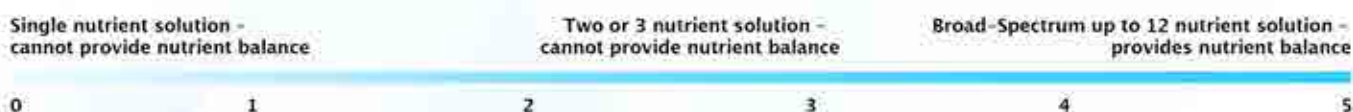
Stimulation of the plants metabolism will require the plant to have Phosphorus delivered as part of the foliar application, Foliar products therefore need to have included phosphorus to ensure plant growth in metabolism is achieved in the process of fixing plant nutrient deficiency.



6 Correct Nutrient Balance

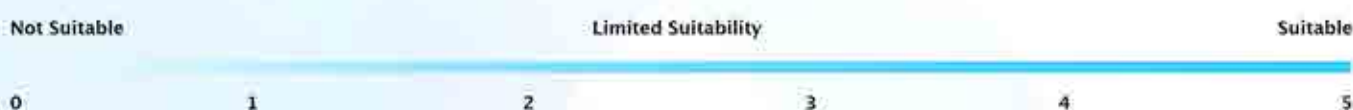
Plant nutrient deficiency is generally the result of an imbalance of many nutrients and rarely is it just a single nutrient deficiency problem. Restoring the correct nutrient balance - not just increasing a single or small number of nutrient levels - is what an advanced foliar product should achieve.

The more the entire nutrient balance is restored in the plant - the lower the risk of failing to address an unidentified nutrient problem or deficiency is - and the more successful the results to the plant will be achieved. This is a measure of the ability of the product to correct nutrient deficiency imbalance.



7 Suitability for Variable Paddock

Paddock Variability theory determines that the paddock can have different nutrient levels and qualities from one square metre to square metre - making paddock nutrient solutions difficult or requiring different nutrient solutions. This measure of efficiency determines if the foliar product is suitable (capable of) for fixing the issue of paddock variability.



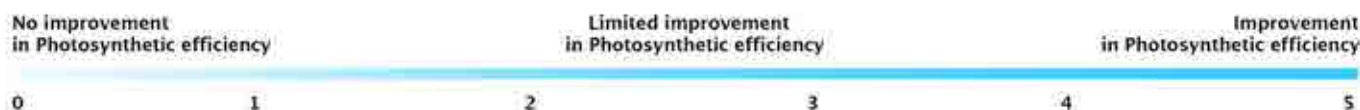
8 Induced Sugar Transport

Increased growth within the plant is only achieved through the efficient transportation of sugars (energy) to the new growing areas of the plant. Foliar product with phosphorus and high acidity achieve substantially higher rates of induction of sugar transport - supplying sugars (energy) to the new growing area of the plant for increased growth.



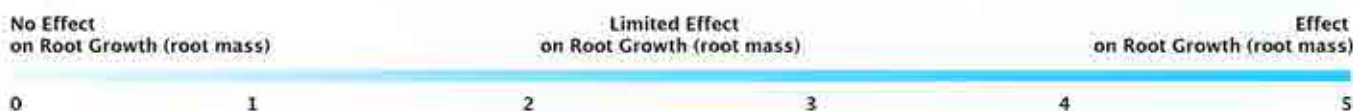
Photosynthetic Efficiency

Foliar product with phosphorus and high acidity achieve greater photosynthetic efficiency - the improvement in this efficiency results in the faster conversion of the sun's energy into sugars (energy) then made available to the new growing area of the plant for increased growth.



Effect on Root Growth

Foliar products need to have a direct size effect on stimulating greater root growth (root mass) and therefore increasing the plants access to soil based macro nutrients such as N, P and K. Unless a foliar product can increase root growth the plant is limited to the accessibility to soil based nutrient uptake.



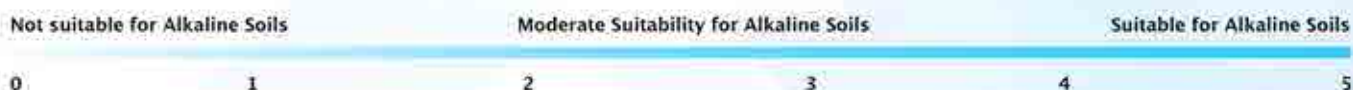
Potential for Productivity – is the product going to increase productivity (yield) - rated

Foliar products should be able to achieve through their application and function a direct result in productivity (yield) improvement/increase. Unless a foliar product can demonstrate the potential for productivity the attention to the nutrient deficiency will be without any direct result.



Suitability for Alkaline soils – if you have alkaline soils will the product work - rated

Foliar products need to demonstrate a suitability to safely and efficiently operate in Alkaline soils.



Suitability for Acid Soils – if you have acid soils will the product work – rated

Foliar products need to demonstrate a suitability to safely and efficiently operate in Acid soils.

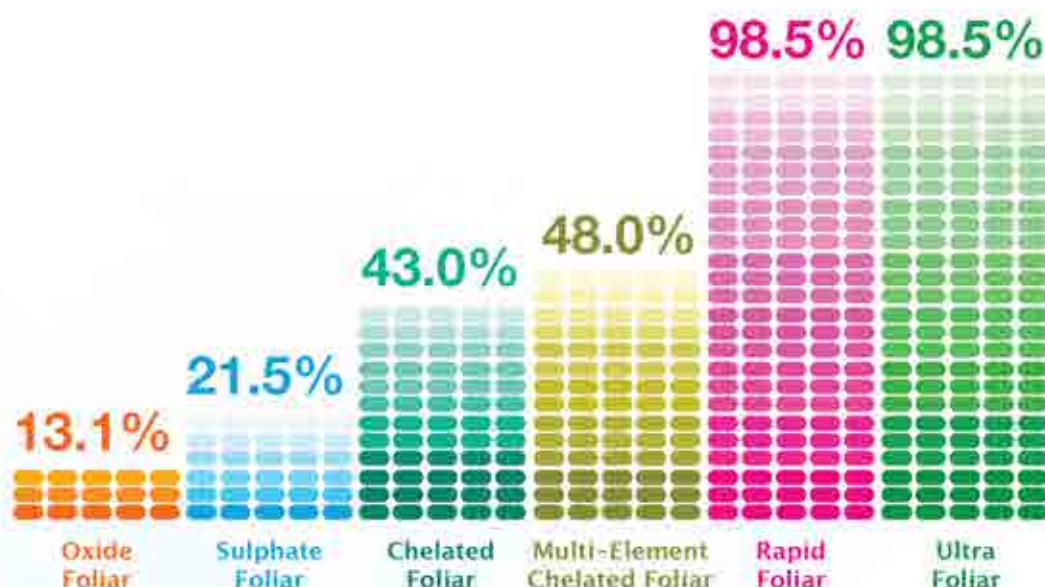


Ultra Foliar Performance is So Much More Advanced

6 foliar product types are compared against 13 performance attributes and rated between 1 - 5 based on product ability and then aggregated and classified by results. An ULTRA FOLIAR is a foliar that achieves a rating in the top 2% of all foliar product types based on this performance attributes system. Only the highest performance products can be classified as an Ultra Foliar against this rating system.



Ultra Foliar



ATTRIBUTE	Oxides of Zn, Mn, & Cu	Sulphates of Zn, Mn, & Cu	Chelated Traces of Zn, Mn, & Cu	Multi-Element Chelated Foliar	HBS High-Analysis Rapid Foliar	HBS High-Analysis Broad Spectrum Ultra Foliar
High Acidity/low pH	0	0	2	2	5	5
Buffering Power	0	0	3	3	5	5
Speed of Uptake	0.5	2	1	1	5	5
Transportability of Elements	1	1	5	5	5	5
Correct Deficiency of P	0	0	0	0	5	5
Correct Nutrient Imbalance	1	1	1	1	5	5
Suitability for Variable Paddock	1	1	1	3	5	5
Induced Sugar Transport	1	1	1	1	5	5
Photosynthetic Efficiency	1	1	1	1	4	4
Effect on Root Growth	1	1	1	1	5	5
Potential for Productivity	0.5	1	2	2	5	5
Suitability for Alkaline Soils	0.5	2	5	5	5	5
Suitability for Acid Soils	1	3	5	5	5	5
OVERALL SCORE	8.5/65	14/65	28/65	31/65	64/65	64/65
OVERALL RATING	13.1%	21.5%	43.0%	48.0%	98.5%	98.5%

Technically an Ultra Foliar

It is achieved by understanding that crop yield is greatly influenced by plants being able to access the required amount of nutrient. Plants need to be able to access every nutrient that it requires and in a balanced and timely way.

Farmers and Growers understand that:

- As much as 60 percent of crop yield is dependent upon nutrient availability and that crop nutrition is the foundation of a healthy and fertile crop.
- Crop nutrition science and research advances at a rapidly changing pace, so it is important to be informed and have access to changing and better technologies. RLF have developed these required technologies.

98.5%



Ultra Foliar

Nutrient Delivery Technology

NDS (Nutrient Delivery System) is an RLF-developed proprietary technology. This system allows for foliar nutrient to be taken into the plant through the leaf and cell walls at a substantially more efficient rate than normal products or practices up to 300% better.



Nutrient Delivery System



Ultra Foliar



Crop-Specific Foliar

Delivery Technology Means We Can Formulate Higher-Analysis Concentrations

RLF-developed delivery technology allows the formulation and manufacture of solutions that contain a high concentration of many different nutrients, all formulated in such a way that is stable and safe for the plant.

RLF technology has neutralised the antagonistic effects that elements can have with each other and the result is revolutionary.

Now, specifically formulated products with 12 elements contained in one single, stable, effective solution can be applied to crops.



High-Analysis Broad-Spectrum



Higher Analysis Means We Can Build in Broad-Spectrum

Safe Transfer of Nutrients

NDS is the activator nutrient carrier-technology that bonds with the nutrient elements and acts to transfer the nutrients, both into the plant and throughout the cells of the plant.

NDS technology is revolutionary in its design and results have allowed for a 350% increase in nutrient transfer.



Nutrient Delivery System

Why Farmers Need Efficient Nutrient Delivery

Crop yield is greatly influenced by plants being able to access the required amount of nutrient. Plants need to be able to access every nutrient that it requires and in a balanced and timely way.

Farmers and Growers understand that :

- As much as 60 percent of crop yield is dependent upon nutrient availability
- Crop nutrition is the foundation of a healthy, fertile crop
- Crop nutrition science and research advances at a rapidly changing pace, so it is important to be informed and have access to changing and better technologies
- Optimum growth environments do not sustain themselves – crop nutrition needs to be carefully managed throughout the year
- The vagaries of climate can impact the health of the crop and therefore plant nutrition is more important in mitigating this risk

Optimum Nutrition

This means that today, more than ever before, Farmers and Growers need to ensure that their farming practices are focussed on providing the optimum nutrient to the plant during ALL stages of growth towards yield.

Only with the crop's nutrient requirements completely satisfied can a plant achieve its maximum potential yield volume and quality, considering the climate and environmental conditions.

RLF products have been developed to provide Farmers and Growers with the latest modern farming practice available. To be able to achieve a practical and economical method of providing crop nutrition throughout the growth cycle.

Here is how:



NDS is THE Answer

NDS (Nutrient Delivery System) is an RLF-developed proprietary technology that IS A WORLD-LEADER. This system allows for foliar nutrient to be taken into the plant through the leaf at a substantially more efficient rate than normal products or practices – 350% better.

There are several factors that impact farm practice that can be overcome with NDS :

- NDS can deliver broad-spectrum nutrient in a single application
- Soil fertility is bypassed as many nutrients are delivered directly to the plant
- Delivery is efficient and cannot be practicably or cost effectively achieved through soil application
- Paddock and soil variability issues are eliminated
- NDS is generally fully delivered to the plant in under two hours from application
- NDS provides 350% increase in delivery efficiency of the nutrient ensuring maximum cost effectiveness and reduced application risk
- OPTIMUM nutrient can be delivered to eliminate potential or future crop deficiency issues before they occur

Safe Transfer of Nutrients

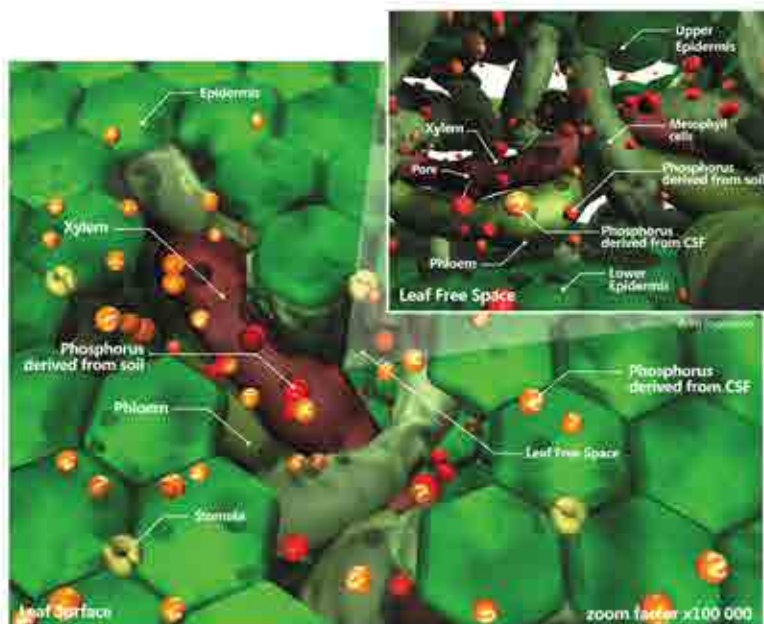
NDS – Straight through the Leaf Wall

NDS allows for the transfer of nutrient elements through the leaf wall. It is then directly absorbed inside the leaf.

NDS – Transferred to the Cells and Transported in the Plant

Furthermore NDS acts as a carrier into the plant cell without causing damage to the cell.

This means that nutrient elements can be safely transferred into plant cells and then freely moved via the cells to the functionaries of the plant.



What Does This Mean?

For the first time, NDS has enabled High-analysis Broad-spectrum formulated products to be quickly, safely and effectively moved through the leaf and directly to the plant.

With RLF's NDS technology it is assured that once inside the plant, and into the cells, it will substantially improve productivity, because the nutrient is readily moved, or translocated within the plant through the increase in the plant's photosynthetic efficiency.

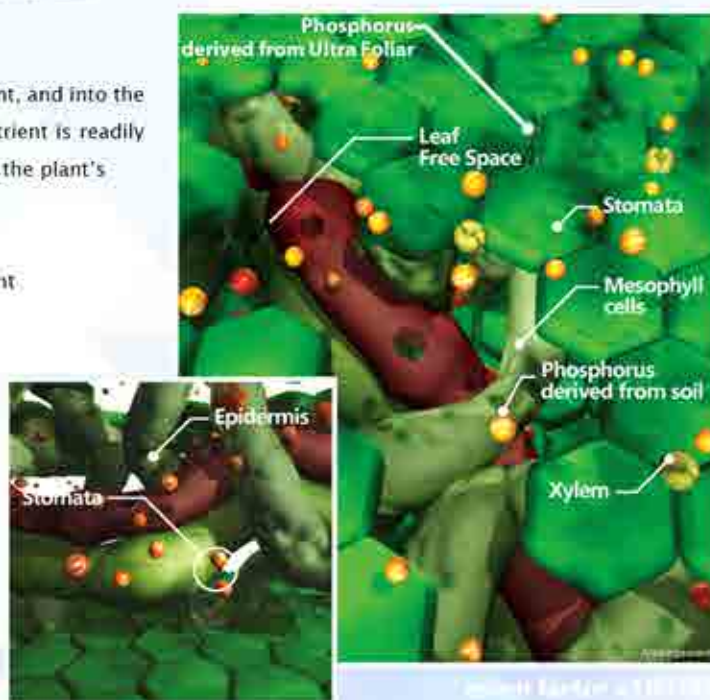
This allows for a much more effective assimilation of the nutrient elements for immediate plant use.

NDS simplifies the science and agronomy associated with the nutrition of each crop-type and it helps deliver the important information necessary to achieve balanced crop nutrition.

It is the single, most effective way to achieve maximum crop yield.

It is an important tool to help farmers learn how best to achieve maximum crop yield.

Other foliar application, without NDS, the nutrient elements are only able to transfer through the leaf via the stomata.



HBS High-analysis Broad-spectrum Solution

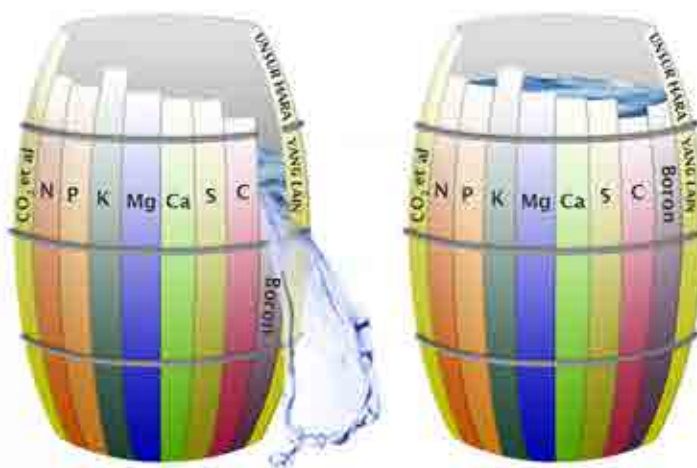
HBS (High-analysis Broad-spectrum Solution) is an RLF-developed technology that allows the formulation and manufacture of solutions that contain a high concentration of many different nutrients, all formulated in such a way that is stable and safe for the plant.



Ultra Foliar

This is a first time technological advance. RLF technology has neutralised the antagonistic effects that elements can have with each other and the result is revolutionary. Now, specifically formulated products with 12 elements contained in one single, stable, effective solution can be applied to crops and produce.

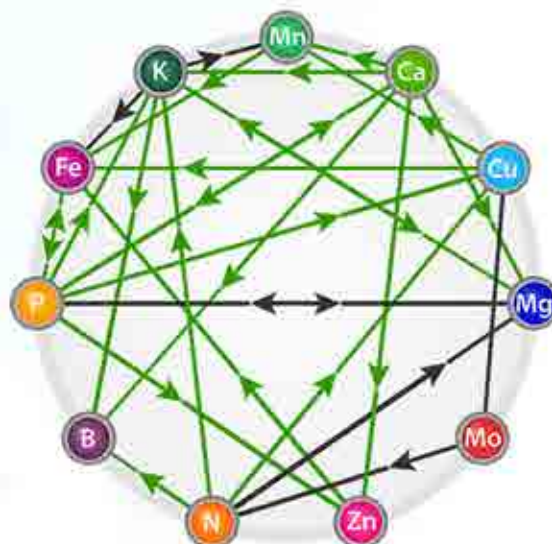
As this diagram illustrates - a deficiency of a single nutrient will result in a deficiency in the plant - a HBS High-analysis Broad Spectrum is the solution required to eliminate this effect.



Mulders Chart

High levels of a particular nutrient in the soil can often interfere with the availability and uptake by the plant of other nutrients. Those nutrients that interfere with one another are said to be antagonistic.

The chart that follows, (The Mulders Chart), demonstrates how care must be taken to ensure an adequate and balanced supply of ALL nutrients to the plant.



Antagonism

A decrease in availability to the plant of a nutrient by the action of another nutrient (see direction arrow).



Stimulation

An increase in the need for a nutrient by the plant because of the increase in the level of another nutrient.



RLF has Engineered a Safe and Stable Solution

HBS High-analysis Broad-spectrum Solution

This high-analysis, or highly concentrated formulation technology means that RLF products often have a specific gravity of 1.5 or greater. HBS ensures the delivery of many nutrients in optimum balance to the plant in a single application.



This means that for the first time HBS has given farmers and growers the tools to cost effectively challenge, or find a solution for :

- paddock-soil variability
- hidden-hunger issues in crops
- crop nutrient difficulties in limited applications
- delivering nutrient in the most efficient way possible and directly to the plant



HBS means stable, concentrated, high-analysis broad-spectrum products can be safely and reliably used in modern farming practices today. RLF is a world-leader in liquid fertilisers and is fiercely proud of its reputation in bringing products to the market that assist farmers and growers achieve both yield and quality of their crops and produce.

HBS, forming part of RLF's ongoing commitment to its valued Farmer and Grower Customers.



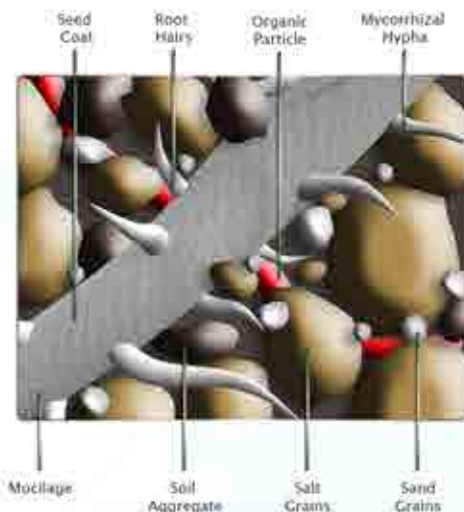
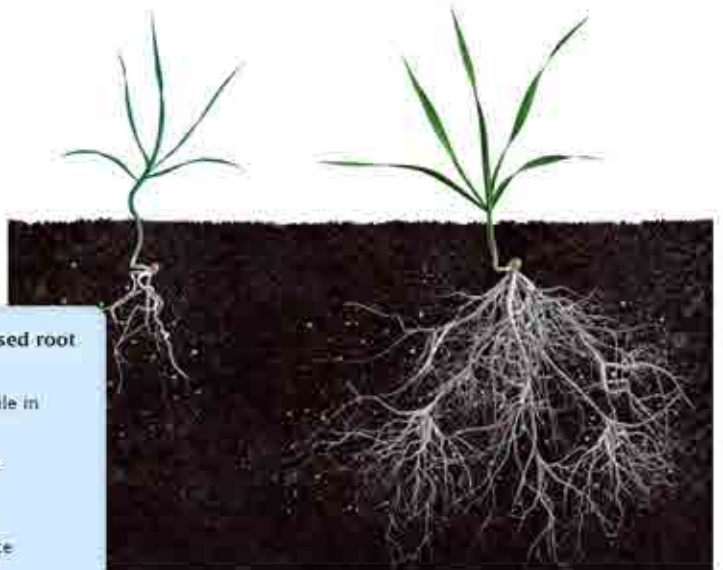
High-Analysis
Broad Spectrum



High-Performance
Formulation

Bigger Roots

RLF Ultra Foliar products achieve a direct exponential effect on root development and growth. Whilst this forms only a part of the cycle of growth and development for each plant, it is a vital and important stage that is also essential in well-considered management of plant physiology, as the benefits to Farmers and Growers will be significant.



Benefits from increased root surface area...

- phosphate is immobile in the soil
- finer roots and more laterals increase surface area!
- increased root surface area 'finds' more phosphate!
- interface between roots and clay is template for bacterial

How RLF's Products Improve the Soil with Bigger Roots

RLF's High-analysis Broad-spectrum ranges of Seed Priming, Ultra Foliar, Fertigation and Root products have a direct effect in benefiting the soil through the plant physiological functions that they achieve.

Greater Microbial Activity + Mineralisation

RLF products create large and thick root structures with substantially more rhizosphere activity growing lots of fine, and very fine hair-like root structures. More roots means more plant 'root exudate' and this means microbial activity increases in and around these root hairs that results in a very large increase in mineralisation.

Mineralisation is the chemical event that 'un-bonds' phosphorus and makes it available to the plant. This results in the plant having access to a lot more 'available' phosphorus.

And, more phosphorus means more yield.

Root Interception + Greater Surface Area

The extra size of the root structure means that physically the plant has access to more. This is because the plant has much greater physical contact with a greater area.

Fine hairs also give the plant a huge amount more surface area. This lets the plant use less energy in achieving easy access to available nutrient and physical NPK in the soil.

And, this increases plant growth.

Nutrient Depletion Zones

Mineral nutrients such as phosphorus have very limited mobility in soils. That often creates a depletion zone - where all the available nutrient has been utilised quickly from around the roots. To obtain more phosphorus, plants must bypass these depletion zones by further root activity elsewhere in the soil.

The outcome of this quest for phosphorus- and other relatively immobile soil resources - should largely be determined by the surface area of a plant's root system.

Creates a 'Wetter' Effect in the Soil

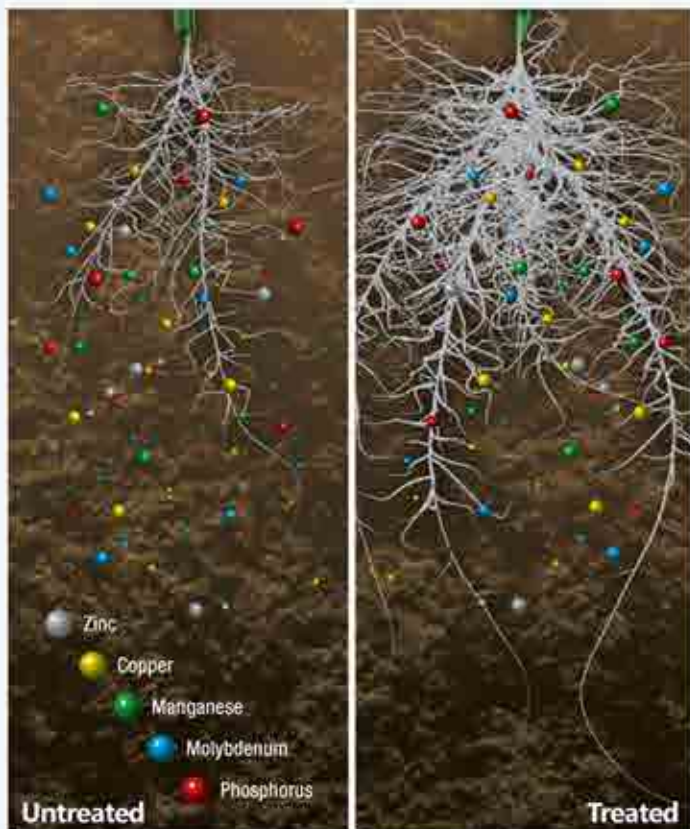
RLF products create a soil condition that improves the uptake of the existing nutrient and chemicals. Furthermore, it creates an environment that enables mineralisation to further improve fertiliser up-take and efficiency.

And, this is like endowing the soil with an additive to make the soil more effective.

Improves the Soil for the Next Season

RLF products result in two major outcomes. Big root mass and high nutrient value

When the plant dies and is ready for harvest this process moves all nutrients from the plant into the root mass and then back into the soil.



Ultra Foliar

Root System Differences

As demonstrated in this diagram the treated plant root has larger total mass as well as finer divisions and better root turnover and regeneration to explore more soil reserves in time and space, resulting in improved yield potential for the treated crop.

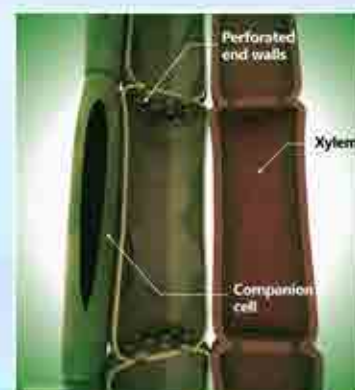


Leaf Free Space

Nutrients that are taken in by the roots from the soil end up being released from the pores of xylem vessels into the Leaf Free Space. When Ultra Foliar is used, the nutrients in your tank mix also end up going into the same Leaf Free Space. From this combined pool more effective and balanced nutrient doses are available for absorption by photosynthetic leaf cells correcting shortcomings. Once the leaf receiving foliar spray is assisted to mature faster, the mobilisation in phloem tissue due to the chelating ability of Ultra Foliar, would help the movement of the cations and trace elements to growing points and immature leaves providing a sustainable plant growth.

Xylem and Phloem

Xylem elements are dead vessels with woody walls that are perforated to conduct and release essential nutrient and water from root to shoot in an upward and outward direction. Phloem tissue on the other hand is composed of companion cells that pump sugar into translocating elements or sieve tube cells. Sugars along with a number of essential nourishments are translocated to young leaves or other organs such as grain that are incapable of making these compounds to satisfy their growth requirements. Ultra Foliar provides the young organs of the treated plants better and faster with more sugars, phosphate and trace elements as a result of foliar intake and improved root performance.



Deliver Optimum Efficiency

All optimum nutrients are made available through the leaf.



Satisfies Plant Nutrition Needs

Better results, stronger plants + greater yields.



Causes Physiological Advantages

Bigger root systems give access to soil-based nutrient.



- Zn Zinc
- Cu Copper
- Mn Manganese
- Mo Molybdenum
- P Phosphorus

Bigger, Healthier + Stronger Roots



KEY BENEFITS OF RLF ULTRA FOLIAR



RLF Ultra Foliar is unlike any other fertiliser product on the market today. It can represent a number of direct benefits that substantially differentiate the product. These are based on plant science and physiology, trial and performance data and the basics of known and accepted agricultural principles. RLF Ultra Foliar is a performance product that can provide a combination of benefits as a direct outcome from its application.

List are the 8 primary benefits of an RLF Ultra foliar and in the following pages are the detailed explanations and supporting information, data and results that supports these principles and validate the results.

1 INCREASES YIELD

2 IMPROVES CROP QUALITY + VALUE

3 IMPROVES NPK + SOIL ELEMENTS UPTAKES

4 FIXES Paddock VARIABILITY

5 SOLUTION FOR HIDDEN HUNGER IN CROPS

6 BUILDS ORGANIC MATTER IN SOIL

7 REDUCE NPK USE + COSTS

8 BUFFERS EFFECTS OF AGRICULTURAL CHEMICALS

9 RESISTS DISEASE + HANDLES CLIMATE BETTER

Fertiliser for Modern Farming

1 Increases Yield

Australian Independent trials demonstrates average yield increases of 14.6% V Control – when applying an RLF Ultra Foliar. These trial results are typical of the on-farm results achieved when used in accordance with the product guidelines. More importantly, in China, where agricultural conditions are generally better, results have been recorded at levels substantially higher than the trial programs conducted in the poorer Australian farming conditions. When applied, using an Ultra Foliar has shown to increase yield.



2 Improves Crop Quality + Value

Using an Ultra foliar can ensure that the nutritional requirements of the plant are better satisfied across a complete spectrum of up to 12 nutrient elements – this is seen to result in the improved crop quality as seen in size, grain weight and colourisation. Manifestly it also ensures that the nutrient value (content) of the yields are more likely higher in line with the higher nutrient values of the plant – and this may even improve taste. Higher quality produce results in the potential for higher sales value.

3 Improves NPK + Soil Element Uptakes

The improvement in NPK + soil element uptake is achieved because of the combination of effects primarily in the root structure and root mass. Increases in root size results in greater root interceptions and physical reach is expanded, this is also supported through the development of more fine root hairs and the subsequent resulting increase in sheer root surface area because of this. The turn-over of these fine root hairs resulting in increases in microbial activity are vital for the conversion of phosphorus and the mineralisation of many other nutrients making them available for the plant to use.



4 Fixed Paddock Variability

Paddock Variability also known as Soil Variability is a real and serious problem facing agriculture today – it essentially is the issue that no two areas of soil (even metre by metre) are the same in terms of nutrient availability – resulting in a variation in the nutrient needs of a plant from within the same crops. Farming practices have traditionally found it hard to solve this problem. An Ultra Foliar eliminates soil variability by providing a broad-spectrum of all vital nutrients thus meeting the needs of the plant regardless of the variable soils.

5 Solution for Hidden Hunger in Crops

Hidden Hunger describes the un-seen (hidden) nutrient needs of a plant before the visual symptoms of the deficiency (if any) becomes apparent. When the visual symptoms appear in the plant it is often too late. The loss of productivity is often considerable and at this time it is likely too late to recover lost yield potential. Using an Ultra Foliar avoids this problem by ensuring the plant has available to it all nutrients at optimum levels.



6 Builds Organic Matter in Soil

The most effective and cost efficient method of building organic matter in the cropping soils is through the enrichment of the crop waste materials and root mass. This ensures that the root mass and necrotic plant matter has greater size and volume, that the root mass is greater thus returning more matter to the soils. Most importantly, and often forgotten, is the nutrient status of the plant – who at harvest – returns all nutrient to the root mass from the plant – making a higher nutrient value plant return higher nutrient value to the soil. Ultra Foliar achieve all of these items; larger volume plants, larger root structure and mass and higher nutrient values.



7 Reduce NPK Use + Cost

Based on many of the principals of Plant Physiology, crops are expected to perform best if managed with an integrated fertiliser program that ensures the needs of the plant are fulfilled completely as possible. A integrated program ensures that an optimum balance of fertiliser is available importantly at the right times of a crop cycle. Ultra Follar is the best solution to ensuring delivery of timely and broad-spectrum (all the) nutrient requirements efficiently to the plant through the leaf and that during this time you are able to moderate and reduce NPK input as crop demands for soil based fertilisers are less.



8 Buffers Effects of Agriculture Chemicals

The more robust, strong and healthy a plant is – then the better it is able to withstand and cope with the effects of harsh agricultural chemical such as pesticides or herbicides and the effects of bulk NPK fertilisers can have on a plant. When a plant suffers these types of impacts it recovers through the use of energy and it will depend upon the nutrient availability in order to maintain its growth and development – an Ultra foliar ensures that the plant is both strong and robust but importantly that it has access to the required nutrients during these times as a buffer effect.



9 Resists Disease and Handle Climate Better

The ability for a plant to be able to resist disease and handle climate and weather are matched to the health, size, root mass and availability of plant nutrients or access to soil based nutrient for use during these times. Ultra foliar provides the best combination of plant health and plant nutrition as the plant typical will have more energy to deal with any stresses associated with things like poor rainfall, too much water, temperature, soil climate and other conditional external factors.





Ultra Foliar is Proven to Work

Australian Independent trials demonstrates average yield increases of 14.6% v Control - when applying an RLF Ultra Foliar. These trial results are typical of the on-farm results achieved when used in accordance with the product guidelines. More importantly, in China, where agricultural conditions are generally better, results have been recorded at levels substantially higher than the trial programs conducted in the poorer Australian farming conditions. When applied, using an Ultra Foliar has shown to increase yield.



Change in yield resulting from foliar spray and/or Integrated Fertiliser treatment in replicated independent trial, median yield increase is 9.1% and average yield increase is 14.6%



Trial Results

RLF'S Broad Spectrum Foliar products are widely and independently tested to produce increased yield results and a positive economic return to farmer.

51.3 %	Increase	▲	738 % ROI
33.5 %	Increase	▲	201 % ROI
26.90 %	Increase	▲	776 % ROI
23.1 %	Increase	▲	362 % ROI
22.8 %	Increase	▲	505 % ROI
20.5 %	Increase	▲	323 % ROI
19.8 %	Increase	▲	1151 % ROI
19.6 %	Increase	▲	619 % ROI
19.3 %	Increase	▲	362 % ROI
18.4 %	Increase	▲	260 % ROI



8 %	Increase	▲	223 % ROI
7.7 %	Increase	▲	222 % ROI
7 %	Increase	▲	270 % ROI
6.7 %	Increase	▲	202 % ROI
4.2 %	Increase	▲	193 % ROI
1.23 %	Increase	▲	1025 % ROI
0.91 %	Increase	▲	1517 % ROI

16.4 %	Increase	▲	735 % ROI
15.9 %	Increase	▲	649 % ROI
15.3 %	Increase	▲	177 % ROI
13.3 %	Increase	▲	397 % ROI
12.7 %	Increase	▲	784 % ROI
12.4 %	Increase	▲	216 % ROI
11.6 %	Increase	▲	304 % ROI
10.5 %	Increase	▲	561 % ROI
10.3 %	Increase	▲	225 % ROI
9.6 %	Increase	▲	288 % ROI
9.3 %	Increase	▲	300 % ROI
9.1 %	Increase	▲	254 % ROI
8.5 %	Increase	▲	303 % ROI
8.4 %	Increase	▲	436 % ROI



Ultra Foliar



Using an Ultra foliar can ensure that the nutritional requirements of the plant are better satisfied across a complete spectrum of up to 12 nutrient elements - this is seen to result in the improved crop quality as seen in size, grain weight and colourisation. Manifestly it also ensures that the nutrient value (content) of the yields are more likely higher in line with the higher nutrient values of the plant - and this may even improve taste. Higher quality produce results in the potential for higher sales value.



More Yield and Better Produce



Higher nutrient values and may even improve taste.

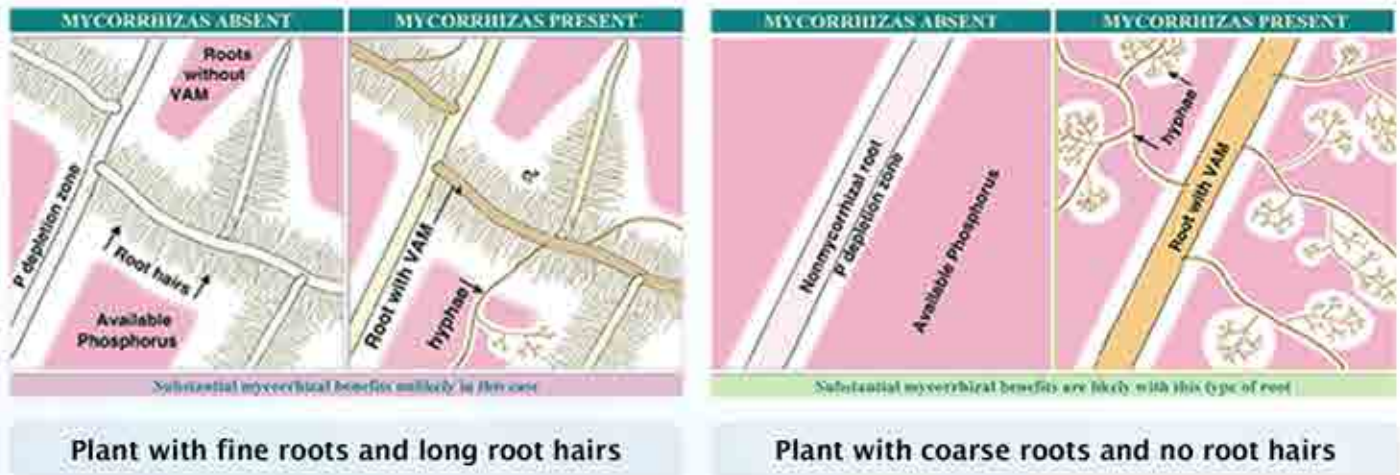
Nutrient Depletion Zones

The demand for a particular mineral nutrient depends on plant internal requirements, while the supply of that nutrient primarily depends on its availability and mobility in soils (Russell 1977, Marschner 1995).

Mineral nutrients such as phosphorus have very limited mobility in soils so that depletion zones - where all the available nutrient has been utilised quickly from around roots (Bhat & Nye 1972, Russell 1977, Marschner 1995). Therefore, to obtain more phosphorus, plants must bypass these depletion zones by further root activity elsewhere in the soil. The outcome of this quest for phosphorus (and other relatively immobile soil resources) should largely be determined by the surface area of a plant's root system.



The most important role of mycorrhizal fungus hyphae is to extend the surface area of roots as is explained in the graphic that follows:



NOTE : These diagrams have been simplified to assume that phosphorus is uniformly distributed in the soil and is equally available to roots and hyphae. They show the extreme situations of a plant with very fine roots and long hairs (such as many grasses) and a plant with thick roots and no root hairs. There are also many plants with intermediate root systems.



Balanced Nutrition is all 16 elements

Through Leaf as Foliar

Zn Zinc	Mn Manganese	Cu Copper	Mo Molybdenum	Fe Iron	B Boron	Co Cobalt
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From Soil and Fertiliser

N Nitrogen	P Phosphorus	K Potassium	Mg Magnesium	Ca Calcium	S Sulphur	Cl Chloride
----------------------	------------------------	-----------------------	------------------------	----------------------	---------------------	-----------------------

From Air and Water

H Hydrogen	O Oxygen	K Carbon
----------------------	--------------------	--------------------

Legumes = 17 elements including Cobalt



Let's Talk Efficiency

The Findings – Higher Seed Phosphorus Levels Increase Crop Yield

Dr Bolland from the Western Australian Department of Agriculture has over the years proven, as is apparent from his publications, that higher seed phosphorus levels increase the crop yield regardless of soil fertiliser input.

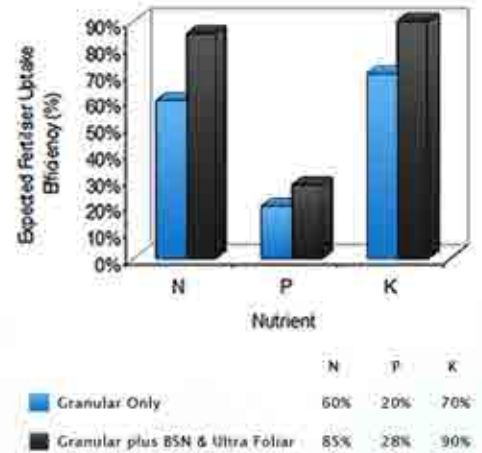
Dr Bolland's findings are sound proof that immobilised phosphorus of the soil is more efficiently taken up by a crop that emerges from seeds with higher levels of phosphorus reserve.

The Products – RLF's Ultra Foliars

RLF Ultra Foliar Products are designed to stimulate and modify plant metabolism leading to high root exploring ability and consequently better efficiency of extracting soil reserves.

This effect is similar to that of BSN with additional benefits of correcting trace element deficiencies in a complete package.

Efficiency of Fertiliser Uptake



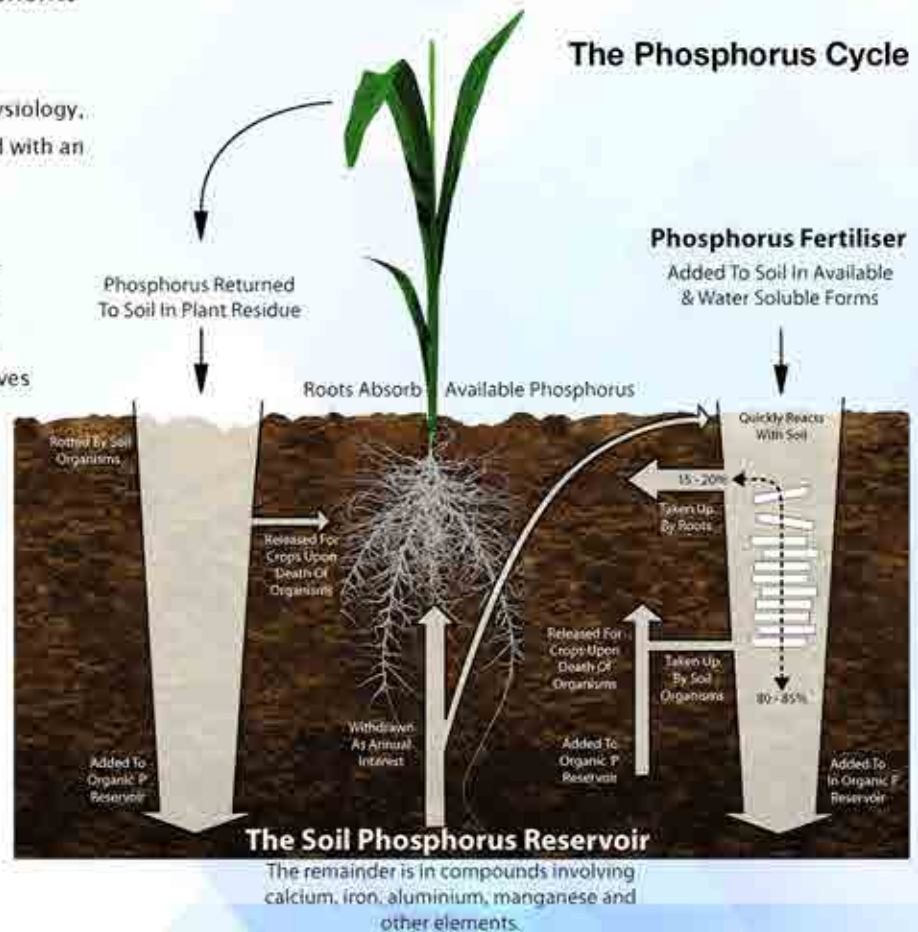
Science and RLF Trials Support the Benefits of Fertiliser Integration

Based on many of the principles of plant physiology, crops are expected to perform best if managed with an integrated fertiliser program.

RLF have conducted many crop trials over the years that have seen the follow up Ultra Foliar Sprays keeping the momentum going as they even up the crop's nutrient status. This improves the root efficiency of the nutrient uptake from the soil.

Some of the trial results and evidence published by RLF over a series of trails conducted in Australia and China are contained within the Technical Library, reference TB138.

The Phosphorus Cycle



Eliminate Soil + Paddock Variability

Soil Variability – the Big Picture

The soil properties vary in the paddock due to a variety of factors including climate, topography, vegetation and land management.

The quality, nutrient value and content of the soil is absolutely variable – it is different in every square metre of soil.

Soil characteristics impacting upon productivity can vary significantly even within paddocks. This problem of soil and paddock variability has caused substantial reductions in crop yield performance and has been hard to rectify.

These facts are accepted, without question, as normal occurrence within agriculture.

Soil fertility assessments commonly rely on a random soil sampling protocol to obtain an average fertility value for a paddock. In undertaking these fertility assessments, soil variability is often ignored, with the consequence that some parts of the paddock may receive excessive fertiliser while other parts may suffer nutrient deficiency due to under-application.

However, knowing about the issue of soil and paddock variability has never been an issue 'of understanding' as farmers and growers have been working with this reality since farming and growing began.

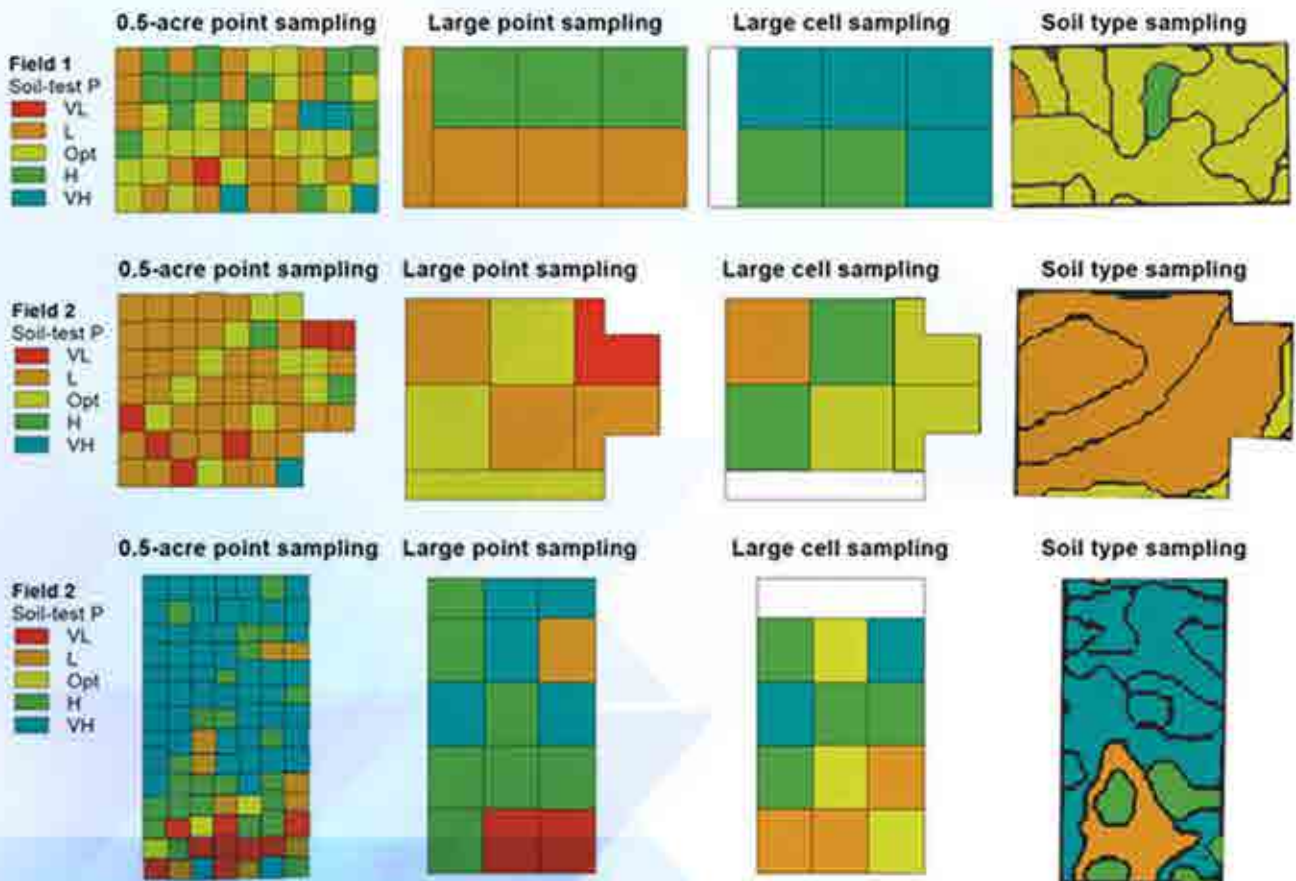
That's not to say that the science should be ignored, rather that thinking of solutions 'outside of the box' may make a lot more common sense.

RLF has the solution.

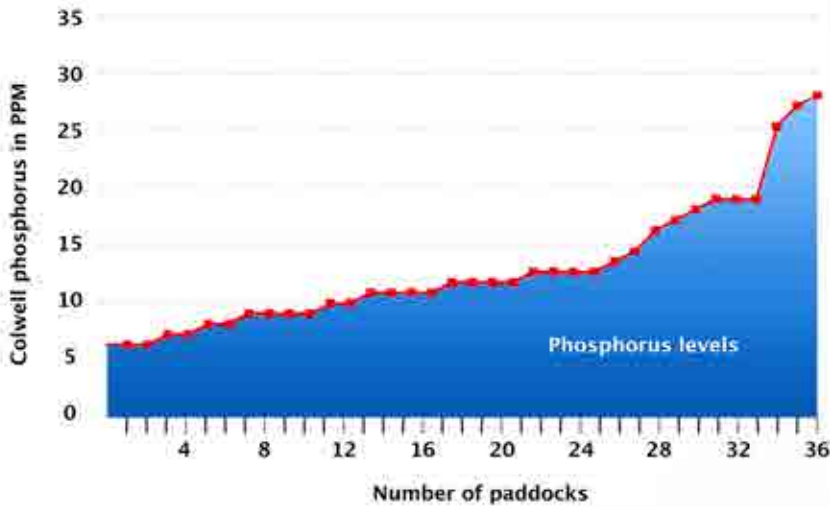
Paddock Nutrient Variability

Soil sampling at various distances demonstrating nutrient variability across paddocks

Source: Antonio Mallarino & David Wittry Iowa State Univ.



Colwell P variation across 36 paddocks of one farm in Geraldton, points plotted in ascending order.



Ultra Foliar is the Solution

RLF through its rigorous research and development processes has developed HBS (High-analysis Broad-spectrum Solutions) a foliar spray that is a world-leading technology, developed especially to address all the problems associated with soil and paddock variability.

Farmers and Growers know that both yield and financial return are effected significantly by the performance and yield loss issues associated with soil and paddock variability.

RLF Ultra Foliar products eliminate the effects of soil + paddock variability by adding high concentrations of the required nutrient directly to the plant - therefore bypassing any soil deficiency.

Soil variability is a widespread condition and can only be addressed by the use of highly engineered products such as the Ultra Foliar and crop-specific foliar products from RLF.

RLF products can bring about considerable improvement.

Soil Variability – the Absolute Practicalities

Farmers and Growers understand the fundamentals of Soil + Paddock Variability, both scientifically and practically.

They work with it every day of the year, and the problems that they encounter are well known and understood by them.

- Every square metre of soil is different
- The quality and nutrient values in the soil are inconsistent
- Whilst macro-nutrients may be easier to find a solution for, dealing with the micro-nutrients which are measured in ppm pose a lot more problems with variability
- The soil mass of the areas they work with is so large that it is almost impossible to fix the micro-nutrient requirement of the soil in any sensible economical or physical way through soil application methods
- That attempting to 'fix the soil' is increasingly more unachievable because of the economic constraints, and that it is not commercially viable to continue practising the same old methods of dealing with the issues associated with soil and paddock variability



Ultra Foliar



Hidden Hunger in Crops

What is Hidden Hunger

Whilst visual plant symptoms are very useful for identifying most nutrient deficiencies, plant growth and yields are often limited by a lack of nutrients before symptoms become evident. This sub-clinical deficiency is often referred to as 'hidden hunger'.

Hidden hunger triggers a sequence of events in the plant when a nutrient is in short supply – and this nutrient deficiency then disturbs a plant function or structure. The plant then uses, or attempts to use, a different means to overcome the problem. If the deficient nutrient can not be overcome with the plants own adaptation mechanisms, the disruption continues and moves through a sequence of events which results in physical (or morphological) change that then becomes visible.

When these symptoms appear, the loss of productivity could be considerable and likely too late to recover lost yield potential.

The following example describes how hidden hunger results from the disturbance of an orderly hierarchy in plant function.



Molybdenum Deficiency (Wheat)



Copper Deficiency (Oil Palm)

Example of 'Hidden Hunger' Effects

Assume that the plant gets 'wet feet'. This lack of oxygen in the soil around the root zone when the soil is saturated with water for more than a day, causes the organic matter to decompose and start the process that ultimately leads to hidden hunger.

So, prior to any noticeable change in the plant, a defined sequence of events takes place.

This is as follows :

- 1 Air or oxygen in the root system escapes and anaerobic conditions (anoxia) is forced upon the root system after flooding occurs - (occurs in minutes)
- 2 Cell membrane loses its semi-permeability property - (follows on within minutes of Step-1)
- 3 Cell membranes become 'leaky' and loss of nutrients from roots (potassium) starts (within minutes) and continues for as long as the roots are flooded - (e.g. a day or more)
- 4 Leaves of plant lose nutrients to the root and soil via conducting tissues - (this starts within a few hours and continues for a day or two)
- 5 Turgidity is lost since ions hold water in plants - (as a consequence of step-4)
- 6 Leaves show physical sign of wilting - (this is usually observed with 1 - 2 days as a result of step-5)
- 7 Stomata pore closes
- 8 Photosynthesis is reduced or stopped - (within days)
- 9 Chloroplast system is oxidised by light and chlorophyll breaks down - (within days) and leaves turn yellow



Analogies that capture 'Hidden Hunger'

Two other every-day analogies can be used to describe and help understand hidden hunger.

- When a human body is not functioning at its peak due to nutrient or vitamin deficiency, we detect these shortcomings when our physical performance is affected. However the physiological change leading to our weakness has occurred much earlier but has escaped our notice - the hidden hunger in our body makes its mark.
- When a motor vehicle performs at its peak it moves better and wastes less fuel (i.e. produces less heat). When it heats up, or struggles on an uphill stretch, we understand instantly that it is faulty in some way. We notice the symptom, but the fault has started the damage to the engine well before we noticed it - the hidden hunger in our vehicle makes its mark.

These two every-day analogies, when considered in terms of agricultural practice demonstrate the importance of modern management practices that eliminate the potential for this damage to occur and effect the performance of the crop.

The solution is to prevent the damage whilst it is still 'hidden' or undetectable.

Fertiliser Integration is ensuring an optimum balance of fertiliser at the right time - all working together in support of providing the plant with nutrient when it needs it. The message is clear - the science is in - 'Hidden Hunger' is the damage being done to your crop before you can detect it.

Safeguard your future yield potential and eliminate hidden hunger by implementing an RLF Integrated Fertiliser Program.

The Solution for Eliminating Hidden Hunger

By implementing an RLF Integrated Fertiliser Program, in which nutrient levels in soil, seed and foliage is managed in a synergistic manner.

The success of fertiliser integration depends on :

- 1 Treating seeds with a seed priming fertiliser to raise phosphorus and trace element to optimum or above optimum levels. This enables the seed to set a higher yield potential, and for the seed embryo to have the nutrients required for early root and shoot growth vigour.
- 2 Applying moderate macro nutrient to soils at optimum but not excessive levels. This is determined by fertiliser history, soil test and potential or expected yield.
- 3 Using ultra foliar fertilisers to avoid 'hidden hunger' and hidden yield losses by ensuring all nutrient availability is above optimum levels. This is achieved by using specially-formulated broad-spectrum foliar fertilisers to extend the momentum of root efficiency/exploration, provide nutrient required for growth and yield and eliminate the variability of soil available nutrients.
- 4 Being aware that a fertiliser integration program is jeopardised by soil applications in excess of crop demand, thus moderate NPK input and stepwise nitrogen applications should be practised. This also reduces the cost of fertiliser programs.

HIDDEN HUNGER NUTRIENT DEFICIENCY



Nitrogen



Phosphorus



Potassium



Calcium



Sulphur



Boron



Copper



Manganese



Not a Normal Foliar

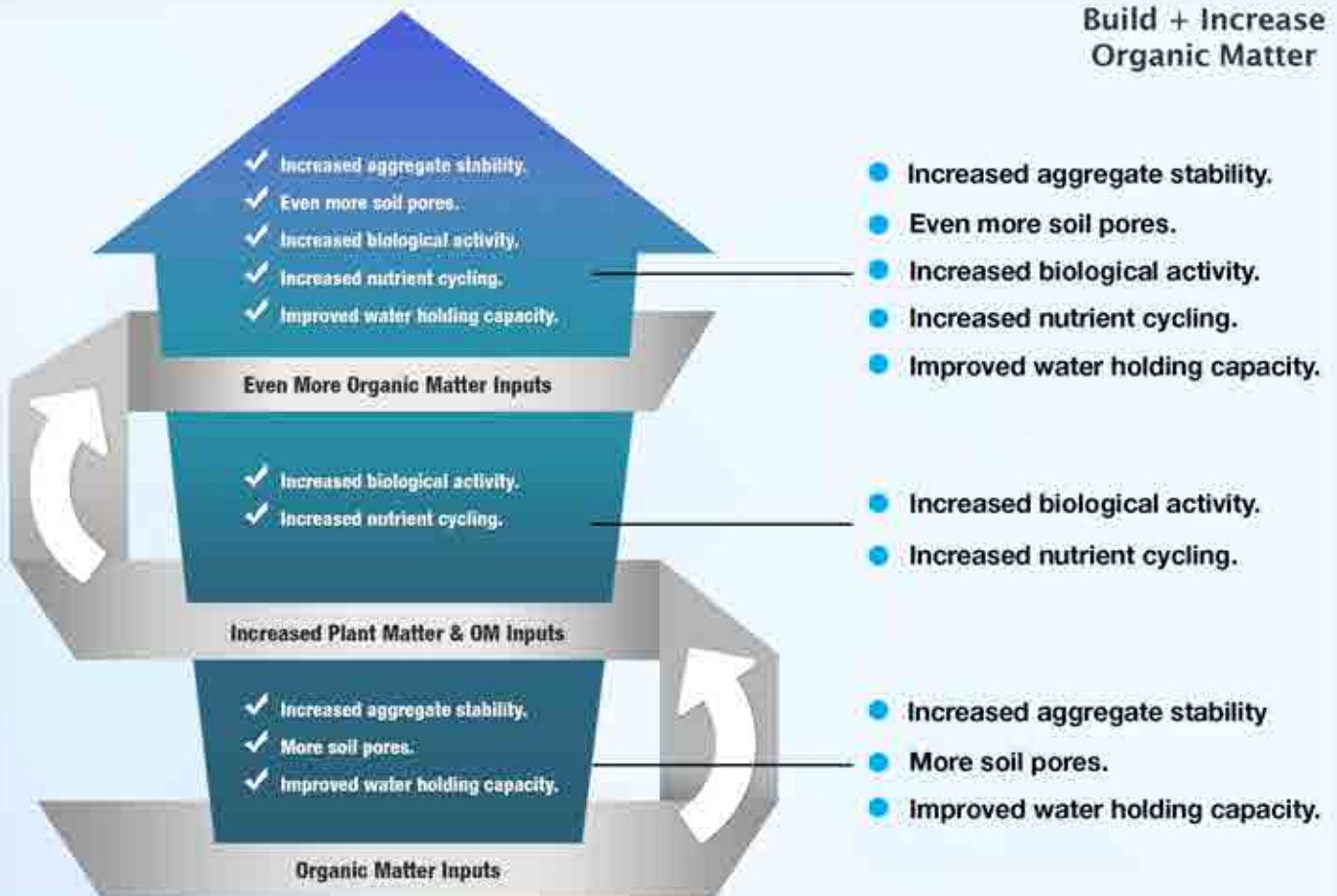
The most effective and cost efficient method of building organic matter in the cropping soils is through the enrichment of the crop waste materials and root mass. This ensures that the root mass and necrotic plant matter has greater size and volume, that the root mass is greater thus returning more matter to the soils. Most importantly, and often forgotten, is the nutrient status of the plant - who at harvest - returns all nutrient to the root mass from the plant - making a higher nutrient value plant return higher nutrient value to the soil. Ultra Foliar achieve all of these items: larger volume plants, larger root structure and mass and higher nutrient values.

ORGANIC MATTER IMPORTS

The driving force behind soil improvement.



Build + Increase Organic Matter





Improving Soil

How RLF's Products Improve the Soil

ROOTS GREATER MICROBIAL ACTIVITY + MINERALISATION

RLF products create large and thick root structures with substantially more rhizosphere activity growing lots of fine and very fine hair like root structures.

More roots means more plant 'root exudate' and this means microbial activity increases in and around these root hairs that results in a very large increase in mineralisation.

Mineralisation is the chemical event that 'un-bonds' phosphorus and makes it available to the plant. This results in the plant having access to a lot more 'available' phosphorus.

More phosphorus means more yield.

ENRICHED CROP WASTE

The crop returns its nutrient to the root mass when it dies (at harvest). The higher the nutrition content of the plant the more nutrient is returned to the soil.

MORE ROOT MASS

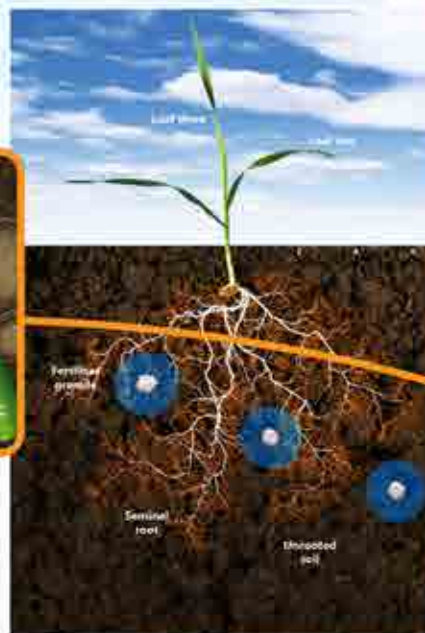
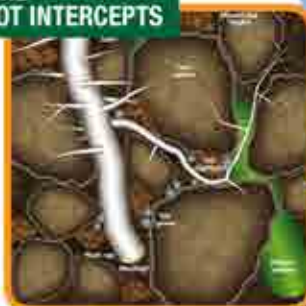
More root mass means more organic substance is returned to the soil every season.

CREATES A 'WETTER' EFFECT IN THE SOIL

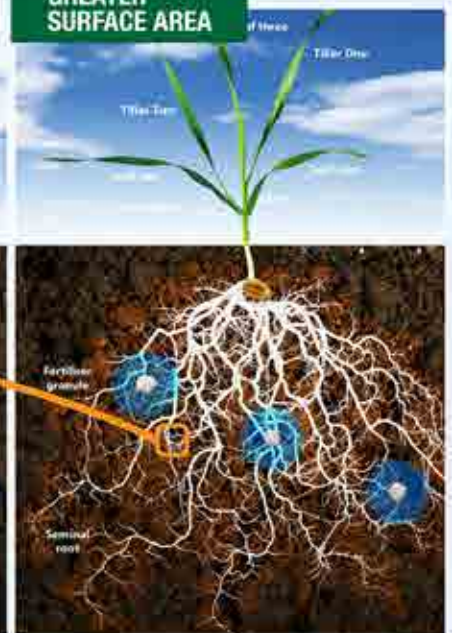
RLF products create a soil condition that improves the uptake of the existing nutrient and chemicals. Furthermore, it creates an environment that enables mineralisation to further improve fertiliser up-take and efficiency.

This is like endowing the soil with an additive to make the soil more effective.

MORE ROOT INTERCEPTS



GREATER SURFACE AREA



Fertiliser Integration

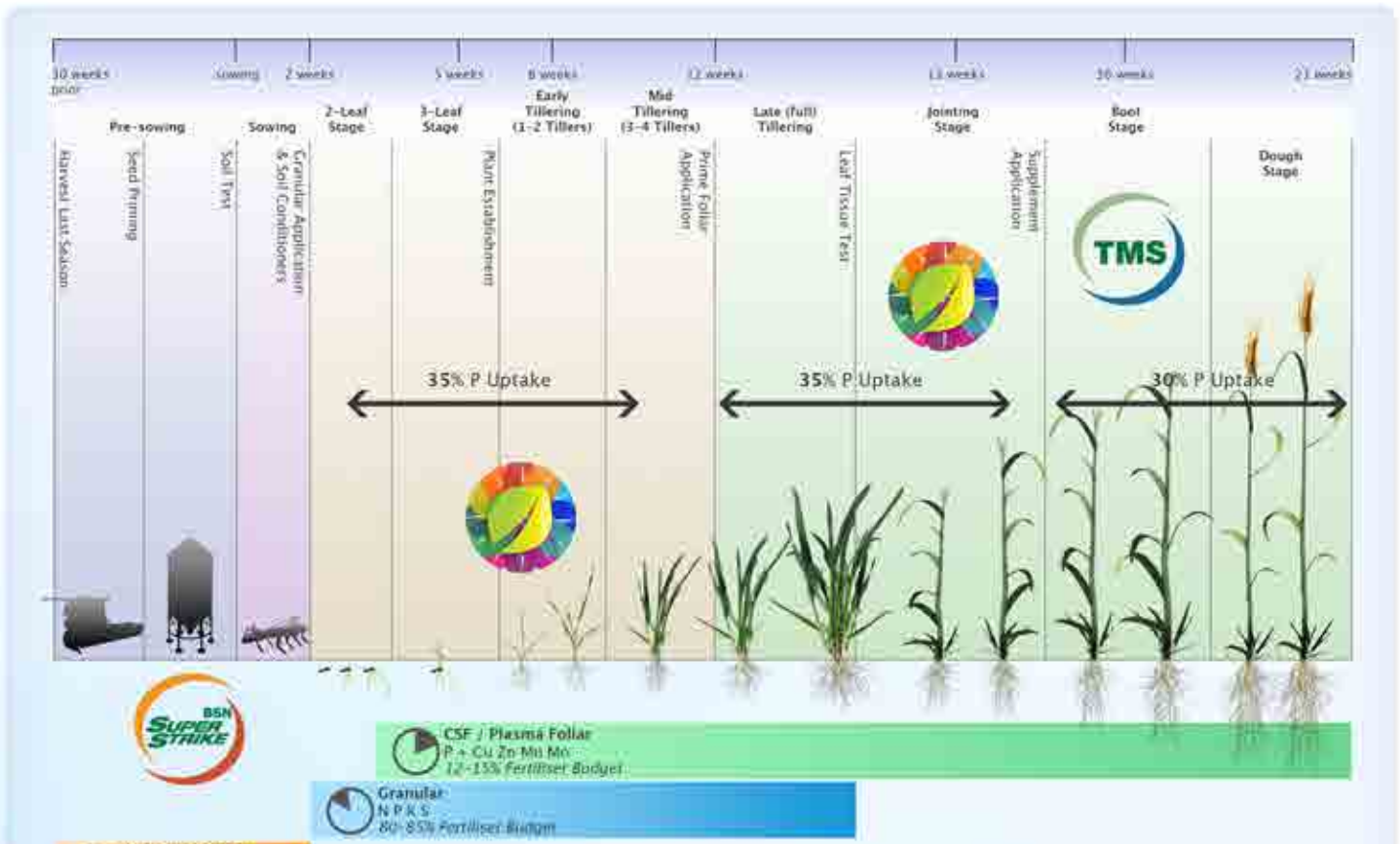
RLF's Broad Spectrum ranges of Seed Priming and Ultra Foliar products are designed to create an integrated system of fertilising crops when used in conjunction with standard granular fertiliser programs.

Seed, Soil and Leaf.



Why use part of your annual phosphorus input into seed or as Ultra Foliar?

Based on many principles of plant physiology outlined in the following paragraphs, there are numerous benefits in budgeting some of your annual phosphorus input as Ultra Foliar.



- 1 The young plant (embryo) gets its first signal of having sufficient phosphorus when the seed imbibes water. Later on when the radicle grows into a proper root system, depending on the soil P level or its accessibility to granular phosphate, the second signal is perceived as to the yield potential by completion of tillers 1 and 2. Thus it is important that available phosphorus in seed is adequate, this could be secured by applying BSN to the seed.
- 2 It is well known that the root uptake of phosphorus is some 10-20% of the season's input. This contrasts with an efficiency of some 80% for foliar-applied phosphate.
- 3 Where soil tie-up phosphorus is high, the contribution of foliar phosphorus in improving yield is higher.
- 4 Having phosphorus in a broad-spectrum blend is an easier and more practical approach to grow uniform healthy crops than to vary fertiliser application rate on the same paddock or row based on soil fertility mapping.
- 5 The quantity of phosphorus applied as foliar could make up for phosphorus removal in a few hundred kilograms of yield.
- 6 Foliar uptake requires half of the plant energy as compared to soil uptake, the extra energy could be used by the root system to increase root mass and root-associated microbial activity.
- 7 In conclusion, by budgeting and using some 10-20% of your P in increasing seed level of phosphorus and phosphorus-based Ultra Foliar fertilisers, yield benefits result with no added fertiliser cost.

How Fertiliser Integration Works

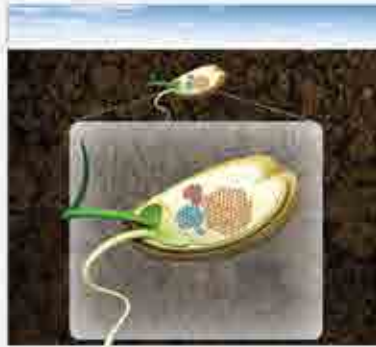
Integrated Fertiliser Management

NO PRODUCT EFFICIENCY

0%

BUDGET

0%



BSN ULTRA SEED PRIMER EFFICIENCY

95%

BUDGET

5%

GRANULAR NPK EFFICIENCY

15%

BUDGET

100%



GRANULAR NPK EFFICIENCY

30%

BUDGET

85%

NO PRODUCT EFFICIENCY

0%

BUDGET

0%



BROAD SPECTRUM FOLIAR EFFICIENCY

80%

BUDGET

10%

OVERALL FERTILISER EFFICIENCY

EFFICIENCY

5%

BUDGET

100%

OVERALL FERTILISER EFFICIENCY

EFFICIENCY

67%

BUDGET

100%

SAME BUDGET -



+ RESULTS
+ PROTECTION
+ BENEFITS



Buffer Effects of Agricultural Chemicals | Ultra Foliar is Proven to Work

The more robust, strong and healthy a plant is - then the better it is able to withstand and cope with the effects of harsh agricultural chemical such as pesticides or herbicides and the effects of bulk NPK fertilisers can have on a plant. When a plant suffers these types of impacts it recovers through the use of energy and it will depend upon the nutrient availability in order to maintain its growth and development - an Ultra foliar ensures that the plant is both strong and robust but importantly that it has access to the required nutrients during these times as a buffer effect.



Resist Disease + Handles Climate Better | Ultra Foliar is Proven to Work

The ability for a plant to be able to resist disease and handle climate and weather are matched to the health, size, root mass and availability of plant nutrients or access to soil based nutrient for use during these times. Ultra foliar provides the best combination of plant health and plant nutrition as the plant typical will have more energy to deal with any stresses associated with things like poor rainfall, too much water, temperature, soil climate and other conditional external factors.



RESULTS OF ULTRA FOLIAR



Results of Ultra Foliar in Vegetables



Cauliflower | Field test

Visually the difference between the Ultra Foliar applied site and Control is very evident. The plant is bigger and looking like it will have a better pathway to producing a healthier and larger fruit with the end result.



Foliar Product on Potato | Field test

A higher, more voluminous and larger plant is evident above the ground and the difference can be easily seen. Ultimately the results went on to be typical of a plant advanced to this extent with more yield and quality being the ultimate result.



Foliar Product on Eggplant | Seedling Comparison

Clearly the differences are visually evident between the Ultra Foliar applied plants and the Control plants – with identical soil contents contained in the pots – the foliar applied plants are performing substantially better.



Lettuce | Yield Comparison

An approximate 30% differential in weight between the produce results of the lettuce crops is visually seen – what is unseen is the difference in nutritional values and overall general quality. The financial return to the farmer would have been more given it was sold on a weight basis.



Foliar Product on Potato | Field test

The results of the field test (shown in the image left) is quite stunning. The potato size difference is easily seen; the yield improvement can be seen in weight and count. It is considerably more and it could be safely assumed that the return to the farmer for an Ultra Foliar applied crop would have been more once sold at market.



Chinese Cabbage | Yield Comparison

The comparisons can be seen between the two results. Whilst the heights are not generally too much difference – you can see the differences mainly in the number of leaves and the width of the stalk. The Ultra Foliar produces a better and higher yielding result.

Results of Ultra Foliar in Grapes



Foliar Product on Grapes | Field + Vine

Early fruit set is healthier and more in number and weight. The plant and leaf is a vibrant green colour and looks as if it is very healthy.



Foliar Product on Grapes | Field + Vine

The comparison images of the same grape plant can distinguish between the Control item that is clearly effected by a nutrient deficiency problem - with clear visual yellow seen on the leaf edges.



Foliar Product on Grapes | Field + Vine

The comparison images of other grape plants in a different trial program again clearly distinguish between the healthy green and luxurious leaf canopy versus the control item which again is clearly effected by a nutrient deficiency problem - with clear visual yellow seen on the leaf edges.



Foliar Product on Grapes | Field + Vine

Larger fruits, consistent in size and visually looking very healthy. When compared the fruit set is more in number and weight. The Ultra foliar has done its job in protecting a plant so that it can end up with this type of yield result - good quality and hopefully the grape will be better tasting for the consumer.



Foliar Product on Grapes | Field + Vine

The difference is evident between the Ultra Foliar applied grape plant and the Control plants.



Foliar Product on Grapes | Field + Vine

The leaf is a vibrant green colour and looks as if it is very healthy. In the Ultra Foliar applied plant you can see no visual signs of nutrient deficiency. In the control plant the leaf is clearly showing a problem exists with nutrients not being available to it as it has yellowing appearing in the leaf.

Results of Ultra Foliar in Apples and Hot Pepper



Foliar Product on Apples | Field + Tree

The direct fruit comparison between the apples is very clear - the fruit result on the Ultra Foliar applied tree looks like it much healthier and a overall much better end result. In comparison the grading of these two fruits will result in more financial return for the better fruit.



Foliar Product on Apples | Field + Tree

The direct fruit comparison between the apples is very clear - the fruit result on the Ultra Foliar applied tree looks like it much healthier and a overall much better end result. In comparison the grading of these two fruits will result in more financial return for the better fruit.



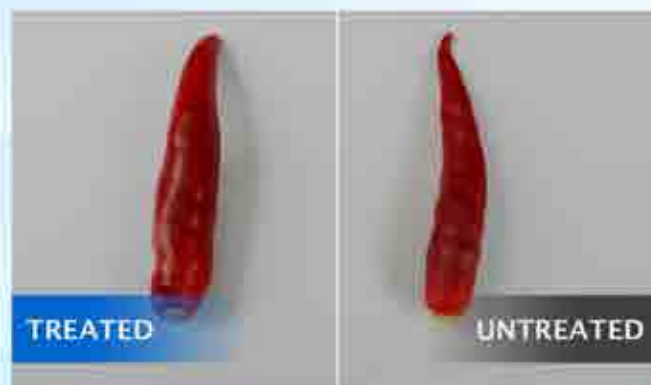
Chilli / Hot Pepper | Yield Comparison

Shown still fruiting on the plant it is clear to see that the success of the Ultra foliar applied plant has resulted in many more fruits and a yield results that visually look substantially more than the results of the control plant. The colour also is more red and better looking when compared.



Foliar Product on Apples | Field + Tree

The direct fruit comparison between the apples is less apparent in this image - the fruit result on the Ultra Foliar applied tree looks like it much healthier and a overall much better end result. The yield or number of apples looks less clear in this image.



Chilli / Hot Pepper | Result Comparison

Shown in comparison the Chilli / Hot Pepper is thicker and a deeper more consistent red colour.



Chilli / Hot Pepper | Result Comparison

A better looking results - redder in colour and shinier/glossy when compared visually. The fruits are thicker and look more in terms of weights. The proof would also be in the tasting - who knows if the better looking fruits mean a hotter and spicier result.

Results of Ultra Foliar in Peanut



Foliar Product on Peanut | Ultra Foliar V Control
The end result is clear in this image. More peanuts per plant and looking bigger. The mass of the leaf is easily distinguished between the two items.



Foliar Product on Peanut | Ultra Foliar V Control
Happy looking farmers are made by achieving great results in yield. This image shows the end results between the two. The greater yield result on weight would have reflected in a greater financial return to the farmer once sold.



Foliar Product on Peanut | Ultra Foliar V Control
This is one of the most clear indications of how an Ultra Foliar product sorts out and handles the effects of nutrient deficiency - by the time the yellowing of the control crop would have been seen - it is most likely that no actions taken (at this late stage) would have fixed the problem in time to achieve the crop results done by the Ultra Foliar.



Foliar Product on Peanut | Ultra Foliar V Control
More peanuts on the bushel and looking healthier. This could mean a better tasting result and certainly should have seen a better financial result for the farmer.



Foliar Product on Peanut | Ultra Foliar V Control
The larger root mass is clearly seen in this image - which supports the strong and healthy plant in access to the soil nutrients and greater access to soil applied fertilisers.



Foliar Product on Peanut | Ultra Foliar V Control
This is another stand-out image - it clearly compares the two results between the application of an RLF Ultra Foliar and the alternative.

Results of Ultra Foliar in Other Crops



Foliar Product on Garlic | Field Test

In the ground the two different garlic crops are looking very different. The thicker and greener treated field is showing stronger growth and is more advanced.



Foliar Product on Corn | Field Test

The height is nearly 30% more and the plant is looking considerably better than the control item growing next - the results are typical of an Ultra Foliar product which gives the stronger plant more yield potential.



Foliar Product on Sugarcane | Field Test

Height and leaf mass is visually more. The flowering looks bigger and in much greater numbers - the flowering is more advanced and this should continue to result in a better yield for the Ultra Foliar applied crop.



Foliar Product on Garlic | Field Test

A close-up of the plants in the field test (shown left) gives you a better indication of the difference between the two plants.



Foliar Product on Corn | Field Test

More leaves, greater height and a slightly thicker stalk. The corn result of the Ultra Foliar also has a deeper green colour indicating a healthier plant when compared to the lighter more transparent colour of the control plant.



Foliar Product on Sugarcane | Field Test

The rich colour of the striation in the cane reflects a healthy plant - even though the image is hard to compare - more tiller development and slightly thicker cane stem can be seen.



Broadacre Plus

High-Analysis Broad-Spectrum	Nutrient Delivery System	High-Performance Formulations	Plant Physiology Removal	Crop Nutrient Removal	Stable Solution	Build + Increase Organic Matter

N	P	K	Mg	S	B
Cu	Fe	Mn	Mo	Zn	Co

Fruits + Veggies Plus

High-Analysis Broad-Spectrum	Nutrient Delivery System	High-Performance Formulations	Plant Physiology Removal	Crop Nutrient Removal	Stable Solution	Build + Increase Organic Matter

N	P	K	Mg	S	B
Cu	Fe	Mn	Mo	Zn	Co



Interceptor XF

High-Analysis Broad-Spectrum	Nutrient Delivery System	High-Performance Formulations	Plant Physiology Removal	Crop Nutrient Removal	Stable Solution	Build + Increase Organic Matter

N	P	K	Mg	S	B
Cu	Fe	Mn	Mo	Zn	Co

Available Sizes

Sizes in Litres



1000 Litres

Description
Intermediate Bulk Container (IBC). Stainless steel frame for the transport and storage of bulk liquid fertiliser.

Dimensions
Height: 1180mm
Width: 1200mm
Length: 1000mm



20 Litres

Description
Drum (Small Size). Leak proof, narrow mouth, tight end made with HDPE (High Density Polyethylene).

Dimensions
Height: 450mm
Depth: 280mm
Width: 280mm



200 Litres

Description
Drum (Large Size). It is made of UHMWPE (Ultra-high Molecular Weight and High Density Polyethylene). Tamper-evident feature.

Dimensions
Height: 950mm
Diameter: 590mm



5 Litres

Description
Bottle (Large). Leak proof, narrow mouth, tight end made with HDPE (High Density Polyethylene).

Dimensions
Height: 255mm
Depth: 190mm
Width: 140mm



110 Litres

Description
Drum (Medium Size). Total opening with screw lid. Water tight closure. Tamper-evident feature. HDPE (High Density Polyethylene) material.

Dimensions
Height: 770mm
Diameter: 465mm



1 Litre

Description
Bottle. Leak proof, narrow mouth, tight end made with HDPE (High Density Polyethylene).

Dimensions
Height: 250mm
Depth: 85mm
Width: 85mm

Sizes in Millilitres (Bottles)



500 Millilitres

Description
Bottle. Leak proof wide mouth rounds with screw cap. Made with HDPE (High Density Polyethylene).

Dimensions
Height: 190mm
Width: 70mm



200 Millilitres

Description
Bottle. Leak proof wide mouth rounds with screw cap. Made with HDPE (High Density Polyethylene).

Dimensions
Height: 125mm
Width: 60mm



250 Millilitres

Description
Bottle. Leak proof wide mouth rounds with screw cap. Made with HDPE (High Density Polyethylene).

Dimensions
Height: 135mm
Width: 62mm



100 Millilitres

Description
Bottle. Leak proof wide mouth rounds with screw cap. Made with HDPE (High Density Polyethylene).

Dimensions
Height: 100mm
Width: 50mm

Sizes in Millilitres (Sachets)



30 Millilitres

Description
Sachet. A small disposable pouch made from plastic lined foil which contains single-use quantity of the liquid fertiliser product.

Dimensions
Height: 130mm
Width: 90mm



10 Millilitres

Description
Sachet. A small disposable pouch made from plastic lined foil which contains single-use quantity of the liquid fertiliser product.

Dimensions
Height: 105mm
Width: 25mm

Sizes in Bulk

60K Litres, 20K Litres, 10K Litres



Description
Road Train also known as "G" Train, 118 stainless steel 550 horsepower freightliner with 18 Speed road (caterpillar transmission).

Dimensions
Height: 13,000mm
Width: 2500mm
Length: 36,500mm



RLF Technology

RLF is a high-technology developer and manufacturer of liquid fertiliser products for agriculture - all of which are engineered and based on plant science. RLF products are based on two key developed and proprietary technologies;

-  **Nutrient Delivery Technology** has allowed RLF to formulate products that can be quickly and efficiently be delivered into the seed (imbibed) or into the plant through the leaf and cell walls.
-  **High-analysis Broad-spectrum Solutions** - RLF has developed technology to allow for the safe and stable formulation of products that contain up to 12 nutrients without any element antagonism or conflict.

This means that RLF products are able to achieve the safe delivery of a broad-spectrum of nutrients directly to the seed or plant - with reliability and integrity - ensuring the maximum chance for effectiveness and results for the farmer and grower customers.

RLF has developed a fully integrated and complete range of liquid fertiliser products designed for the needs of your farmer and growers.



RLF Product Features



High-analysis, Broad-spectrum Solutions

RLF's world-leading technology that enables the safe formulation and manufacture of fertiliser in a concentrated solution that contain many nutrients - all stable and safely engineered for the plant.



Crop Nutrient Removal

RLF applies the science of nutrient removal in the development and formulation of its high technology products. Crop Nutrient Removal science allows RLF to calculate the quantity of nutrients for every formulation as to balance those nutrients removed during the plant cycle.



SDS - Seed Delivery System

World-leading first RLF-developed technology that bonds with the nutrient elements to efficiently and safely transport them directly into the seed embryo. This process is called imbibing and it is essential in the success of fertilising the seed directly with nutrient.



Stable Solution

RLF products are high concentration at specific gravity values between 1.2 and 1.5 - they are engineered in the formulation to ensure that they maintain full integrity. RLF products are tested, accredited and in quality solution that assures stability and longevity.



NDS - Nutrient Delivery System

World-leading RLF's specially formulated nutrient carrier-technology that bonds with the nutrient elements in solution to transfer them straight into the plant through the leaf cell walls and then directly into the cells themselves.



Build + Increase Organic Matter

RLF high-technology products build and increase organic matter through the development of a larger root mass, greatly increased fine root hairs and a higher rate of root turnover caused by increased microbial activity and the resulting increase in plant exudate. This is supported by the increase in plant nutrient levels and the increase in the mass of growth matter - both returning to the soil at harvest.



RDS - Rapid Delivery System

RLF's specially formulated technology that utilises a balance of high-quality chelates and RLF nutrient carrier-technology to enact nutrient transfer rapidly with high-efficiency into the plant and throughout its cells.



Quality Assured

Accredited ISO9001:2008 certification enables RLF to demonstrate high levels of service quality and to show that internationally recognised quality management principles are followed.



High-Performance Formulations

RLF High-analysis Broad-spectrum products have up to 12 nutrient elements delivered to the plant or seed in a single application - meaning that this one product can perform many functions and achieve many outcomes in this high performance formulation.



World-Leading RLF Product

RLF have delivered products to the market that are recognised as world-leading and innovative. Its technologies are scientifically advanced and provide solutions that support modern farming practice.



Plant Physiology + Chemistry

RLF products are developed based on the plants own detailed and individual physiology and related chemistry, in order to achieve the desired results from every formulation. This is the basis of all RLF products. This ensures the correct types of nutrient are delivered to the plant safely and efficiently.



Proven to Work

All RLF products are scientifically tested, trialled and proven in both laboratory and field evaluations.

RLF Ultra Foliar products are a unique technology, and now used by over 2 million farmer customers world-wide. With so many farmers - and so much 'in-the-ground use' - RLF Ultra Foliar today has become the world's trusted Ultra Foliar.

Global Product Range

 Seed Priming			
 Ultra Foliar			
 Rapid Foliar			
 Foliar			
 Fertigation			
 Root Boost			



See:
www.ruralliquidfertilisers.com

