



Knowledge grows

Introducing YaraVita™

Micronutrients for Easier Application
and Improved Crop Performance



YaraVita™

More Than Just Nutrients

YaraVita™ products are not just micronutrients: they are finished products designed from the start with crop nutrition in mind. When you choose **YaraVita** you can be sure that what you apply will be easy and convenient to use, and effective and safe for the crop.

Our range is made up of predominantly foliar sprays, seed treatments and for fertigation in soilless systems.

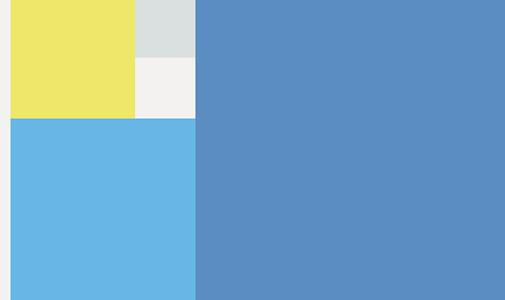
For foliar application

Foliar sprays ensure precise application of the right micronutrient/s at the right time, and can be specifically targeted to the leaf or fruit to suit immediate crop need. Foliar application provides nutrients for immediate uptake by the leaves and, as a result, the grower is not reliant on the right soil, pH or growing media conditions and can quickly keep the crop on course.

Each **YaraVita** foliar product is formulated from consistently high quality nutrient compounds. The raw materials used will depend on the final product formulation and its intended use.

The foliar range includes soluble powders, liquids and suspension products. All are based on raw materials with low impurities and are available as single micronutrient products or as micronutrient combinations for greater ease and convenience. **YaraVita** products are all manufactured to very high, often food and even pharmaceutical grade standards. Products contain co-formulants such as wetters, stickers and absorption aids to control and enhance the performance of the nutrient raw materials.

YaraVita foliar sprays are widely tankmixable with other agrochemical inputs to make treatment easier and more convenient. At www.tankmix.com you will find the results of over 30,000 tank mix tests available 24 hours a day, 365 days a year. This database is updated regularly and is searchable by product or active ingredient.





Benefits in brief

- Foliar application ensures precise application of the right nutrient/s at the right time
- High concentration delivers high quantities of nutrient whilst reducing application rates and packaging
- Good tank-mixability saves time, spray passes and spray problems
- Safe formulations proven over many years of testing means that operators can use **YaraVita** products easily and confidently without crop damage
- Harvesting and transportation is easier and more efficient
- The resulting improved crop quality gains higher premiums and delivers a better return on fertilizer investment





Foliar Applications for Arable Crops

Cereals

An adequate and balanced nutrition is one of the most important factors affecting cereal production. Copper, magnesium, manganese and zinc are especially important for the optimum growth of cereal crops. Straw strength, pollen quality and grain set depend on sufficient copper. Zinc availability ensures growth hormones are activated whilst magnesium and manganese directly affect leaf quality. Plants with poor manganese levels have been shown to be more susceptible to soil-borne pathogens such as take-all.

YaraVita GRAMITREL, developed specifically for application on to cereals, is formulated to supply these vital nutrients in a concentrated, safe and balanced way. In an independent trial carried out in Cambridgeshire **YaraVita** GRAMITREL was applied at two timings to the variety Cordiale on two soil N rates and two seed rates. The average yield increase from applying **YaraVita** GRAMITREL was 0.3 t/ha.

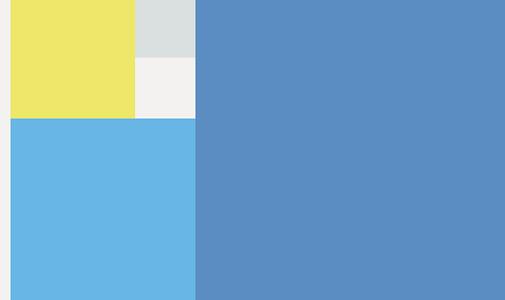
Canola

Canola is a hungry crop which rapidly produces a large biomass, removing more nutrients from the soil than any other major arable crop. As it is difficult for canola to obtain all the nutrients it requires from the soil in the period between the four-leaf stage and flowering, foliar sprays of the most important micronutrients should be used even where crops do not show deficiency symptoms.

Manganese, magnesium, boron and molybdenum are essential to aid root and leaf development, rapid plant establishment and to maintain leaf quality through to flowering. Boron also has a direct function in flower fertilisation and seed set and sulphur, a role in oil formation. It is therefore essential that these elements be provided to the crop up to early flowering.

YaraVita Brasstirel Pro, developed specifically for application on to canola and brassica crops, is formulated to supply these vital nutrients in a concentrated, safe and balanced way.

Independent trials have demonstrated significant yield responses to **YaraVita** Brasstirel Pro applied at stem extension in canola. Furthermore, farmers are reporting increased oil content where they apply **YaraVita** Brasstirel Pro. One user commented that an extra 4% oil content above normal (43% to 47%) earned a bonus payment of \$25 per tonne. With a yield of 3.5 tonne/ha this produced a return on his investment in **YaraVita** Brasstirel Pro of over 4 to 1.





Sugarcane

Adequate and balanced crop nutrition is essential to maximize yield and sugar concentrations and to minimize unwanted fibre and contaminants in the cane at processing. Sufficient supply of nitrogen, phosphorus, potassium and sulphur are vital for sugarcane production.

Unavailability of micronutrients will restrict growth processes and subsequent yield and sugar quality. Boron, zinc and copper are increasingly seen as key micronutrients in sugarcane crop to help improve new root growth, boosting establishment, leaf and cane growth with stronger stalks, leading to higher yields. While only required at low levels, there is some evidence that more attention should be paid to molybdenum, particularly to ensure that nitrogen is fully utilized by the crop. Foliar nutrient surveys have identified low levels of these micronutrients across Australian sugarcane regions.

A comprehensive range of **YaraVita** products are available for inclusion in a crop program to ensure adequate supply throughout the season. They include **YaraVita BORTRAC**, **Yaravita COPTRAC**, **YaraVita MOLYTRAC** and **YaraVita ZINTRAC**.

Cotton

Cotton production relies upon good early plant establishment and maintenance of healthy leaf production through the entire season. Foliar applications of phosphorus and zinc in the season can alleviate the effects of temporary phosphorus and/or zinc shortages when soils are either cold or waterlogged or both. Foliar applications are an effective method of supplying nutrients to satisfy crop requirements. Deficiencies of phosphorus or zinc can reduce plant establishment, slow crop development and reduce lint yields.

YaraVita GLYTREL ZnP has been specifically developed for application to Roundup Ready cotton crops. It has been formulated to supply zinc and phosphorus safely whilst being co-applied with Glyphosate herbicide with no reduction in weed control. **YaraVita ZINTRAC** is an effective product for supplying zinc. It has been formulated to supply zinc for an extended time, reducing the number of applications required.



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Applications for Field Vegetables

Brassica/ Leafy Vegetables/ Lettuce

Analysis is the most accurate way of assessing nutrient deficiency and identifying cost-effective treatment. This is particularly important in vegetable crops where secondary and micronutrient deficiencies can affect crop quality before visual symptoms become apparent.

Boron deficiency affects the growing points of brassica crops, causing stunted and poor development. Symptoms of molybdenum deficiency often resemble those of nitrogen deficiency because this nutrient is involved in nitrogen metabolism, affecting the quality of overall production.

Manganese and magnesium are also important nutrients for vegetable crops, both causing interveinal chlorosis affecting photosynthesis and growth.

A comprehensive range of **YaraVita** products are available for these nutrients - calcium and boron in particular - for application in the 4 – 6 leaf stage and at stem extension/early heading.

Potatoes

To maximise return on investment, potato growers must maximise tuber yield and address factors including tuber numbers and size, dry matter content and skin finish.

Magnesium and manganese are vital for good early canopy establishment and the maintenance of optimum leaf quality throughout the season. The vegetative state of the crop often determines its yield and quality potential and must be carefully managed. Phosphorus applications to the leaves at tuber initiation promote tuber set and numbers and sprays during tuber bulking increase tuber size.

Magnesium plays a role in tuber dry matter production. Boron and calcium applications can help to reduce the incidence of Internal Rust Spot and other tuber quality defects. When these elements are deficient, even in the absence of visible symptoms, yield and quality may be reduced.

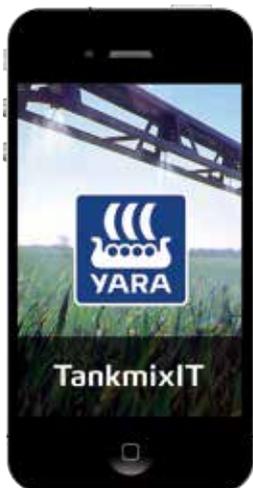
A comprehensive range of YaraVita foliar products are available for inclusion in a program to ensure adequate supply throughout the season including **YaraVita KOMBIPHOS**, **YaraVita BORTRAC** and **YaraVita Mantrac Pro**



Tankmix IT - A service outlining the guidelines for mixing YaraVita™ with many plant protection products.

Yara TankmixIT is based on a database of results from thousands of individual two-way or multi component tank mix tests of **YaraVita™** products with other spray materials.

Access is freely available to everyone and allows better planning of spray programs and spraying opportunities with the **YaraVita™** range. Tankmix information online www.tankmix.com or via smart phones makes it quick and easy to check whether products can be co-applied.



CheckIT - For simple diagnosis of nutrient deficiencies

Yara CheckIT is an agriculture mobile app that gives farmers a photographic library of crops to allow a simple and fast identification of possible nutrient deficiencies.

Users can reference photos of deficiencies in high definition, filter them by symptoms, the location of the symptom on the crop, or by the suspected cause of the symptom. Once the cause of the deficiency is established, the app gives further information on how the deficiency affects that crop, what soil types are prone to this type of deficiency and what factors will make a deficiency worse. CheckIT provides a fertilizer recommendation to treat the identified nutrient deficiency, as well as alternative products which allow preventive treatment for the following growing season.

The Yara CheckIT app is freely available for download on Android and Windows Mobile



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Applications for Fruit Crops

Pome Fruit

Adequate and balanced nutrition is one of the most important factors affecting the quality, yield and storage potential of top fruit. There are seven essential nutrients for quality top fruit production. When these nutrients are deficient, even in the absence of visible symptoms, yield and quality will be reduced.

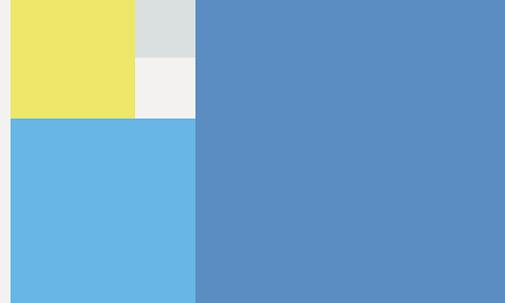
- Zinc and boron for flowering and fruit set.
- Calcium and phosphorus for fruit development, at-harvest quality and the storability of the fruit.
- Magnesium, manganese and iron for overall tree health and leaf quality.

Stone Fruit

Quality is increasingly recognised as crucial to success in the growing of profitable soft fruit crops. It is vital that the full range of nutrients is available at critical growth stages when yield and quality are determined.

Magnesium and manganese are essential for good leaf development and the maintenance of optimum leaf quality throughout the season. Boron and zinc contribute to good quality flower quality and fertilization. Poor fruit or seed set in strawberries, raspberries and blueberries directly influences the size and visual quality of the fruit.

Phosphorus and calcium help to strengthen the fruit, making it firmer with a longer shelf life potential and more resistance to mechanical damage during harvest and transport. A stronger fruit also has increased tolerance to disease pressure, making it more able to withstand the spread of fungal infections such as *Botrytis*, for example.





In Summary

YaraVita is a complete line of micronutrient products designed to help growers get more out of their crops – both in yield and quality. They deliver a better return on investment because they are formulated for maximum efficiency and performance, from their design at the outset to application on the crop exactly when they are required. Importantly, being able to deliver consistent and high quality results earns farm businesses using YaraVita a better reputation with customers and in the market, increasing business demand.

From the most widely grown arable and field vegetable crops through to horticultural, salad and fruit crops and even novel crops which are becoming more widely grown, YaraVita has the answer.

Visit our website at www.yara.com.au or contact your local Sales Agronomist for more information.

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Nutrients by Product

PRODUCT	B	Ca	Cu	Fe	Mg	Mn	Mo	N	K	P	S	Zn
Single Nutrients - Foliar sprays	Boron	Calcium	Copper	Iron	Magnesium	Manganese	Molybdenum	Nitrogen	Potassium	Phosphorus	Sulphur	Zinc
BORTRAC	■											
COPTRAC			■									
MANTRAC PRO						■						
MAGTRAC					■							
STOPIT		■										
ZINTRAC												■
Nutrient Combinations - Foliar Sprays												
BRASSTIREL PRO	■	■			■	■	■	■				
BUD BUILDER	■				■					■		■
CALTRAC	■	■						■				
FRUTREL	■	■			■			■		■		
GLYTREL ZnP										■		
GRAMITREL			■		■	■		■				■
KOMBIPHOS		■			■	■		■	■	■		
MANGZINC					■	■		■				■
MOLYTRAC							■			■		
SENIPHOS		■								■		
SEED TREATMENT												
MOLYTRAC							■			■		
ZINTRAC												■

Product Range

Single Nutrients

Product	Nutrient	Pack Size
YaraVita BORTRAC - concentrated liquid	15 % B	10 litre, 210 litre pack
YaraVita CALTRAC - flowable suspension concentrate	40% Ca	10 litre pack
YaraVita COPTRAC - flowable suspension concentrate	50% Cu	10 litre pack
YaraVita Mantrac Pro - flowable suspension concentrate	50% Mn	10 litre pack
YaraVita MAGTRAC - flowable suspension concentrate	30% Mg	10 litre pack
YaraVita STOPIT - concentrated liquid	16% Ca	10 litre, 210 litre, 1000 litre pack
YaraVita ZINTRAC - flowable suspension concentrate	70% Zn	10 litre pack

Nutrient Combinations

Product	Nutrient	Pack Size
YaraVita FRUTREL - flowable suspension concentrate	6.9% N, 10.5% P, 20% Ca 6% Mg, 2% B, 4% Zn	10 litre pack
YaraVita GLYTREL ZnP - concentrated liquid	4.4% P, 10.1% Zn	10 litre and 1000 litre pack
YaraVita KOMBIPHOS - concentrated liquid	19.2% P, 6.2% K, 4% Mg 1% Mn, 1%Ca, 0.5% Zn	10 litre pack
YaraVita MANGZINC - Mangzinc flowable suspension concentrate	4% N, 31 % Mn, 26 % Zn	10 litre pack
YaraVita MOLYTRAC - concentrated liquid	25% Mo, 11% P	10 litre pack

Crop-Specific Nutrient Combinations

Product	Nutrient	Pack Size
YaraVita Brasstirel Pro - flowable suspension concentrate for canola & brassicas	6% B, 7% Mn, 7% Mg, 0.4% Mo, 8.9 Ca, 6.9% N	10 litre pack
YaraVita BUD BUILDER for pome & stone fruit crops	24% Mg, 10% Zn, 3% B, 3% P	10 kg box
YaraVita GRAMITREL - flowable suspension concentrate for cereals	6.4 %N, 15% Mg, 5%Cu, 15% Mn, 8 % Zn,	10 litre pack
YaraVita SENIPHOS for potatoes & fruit crops	13.5% P, 4% Ca	10 litre, 210 litre, 1000 litre pack

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Visit www.yara.com.au/yaravita for further information and www.tankmix.com for tank-mixability information.

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Timing is Everything

Yara works closely with farmers and growers all over the world gaining invaluable experience that we are able to pass on to others when it comes to what, when and how to use our products.

We know that the choice of product and timing of application is extremely important in achieving optimal plant growth and performance. Our advice on products takes into account all factors: the crop, projected yield, crop quality requirements, availability of nutrients from the soil, weather conditions and local crop husbandry methods.

