



Knowledge grows

Introducing YaraVita™

Micronutrients for Easier and Better 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



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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 T2 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.

Oilseed Rape

Oilseed rape 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 oilseed rape 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 BRASSITREL PRO, developed specifically for application on to oilseed rape and brassica crops, is formulated to supply these vital nutrients in a concentrated, safe and balanced way.

Brassitrel Pro rate response trials were carried out at 2 sites in 2016/17 looking at various rates and timings of application.

All 18 Brassitrel Pro treatments across the two sites gave a yield response when compared to the control plots. The average response was 0.31t/ha across all treatments; which would give a ROI of 6:1.

The best yield benefits came from applications in both autumn and spring – giving a 0.41t/ha average increase in yield.

Maize

Maize production relies upon good early plant establishment and maintenance of healthy leaf production right through the season. Foliar application of phosphorus early in the season can alleviate the effects of temporary phosphorus shortage when soils become cold and wet. This is most effective after a period of adverse spring weather. Zinc and magnesium deficiencies are the two most widespread nutritional disorders in maize worldwide. Deficiency affects the early establishment of the plant which is reflected in reduced crop yield at harvest.

In a recent poor year for growing maize, farmers estimated that **YaraVita MAIZE BOOST** used proactively at the correct timing improved crop yield by over 20%. In 2010, two farm trials conducted in a good maize growing year raised starch analysis by an average of 20.1% following one spray at the 4 to 6 leaf stage.

YaraVita MAIZE BOOST, developed specifically for application to maize crops, is formulated to supply these vital nutrients in a concentrated, safe and balanced way.



Sugar Beet

Adequate and balanced nutrition is one of the most important factors affecting root and sugar yield in sugar beet. Adequate provision of nitrogen, phosphorus and potassium is vital in sugar beet production.

Attention must also be paid to magnesium, boron, copper and manganese supply if the grower is to maximise returns from his crop. Where these elements are in short supply from the soil, plant establishment early in the season can be adversely affected which reduces the crop's potential for maximum root and sugar yield at a very early stage.

Statistics prove that the highest returns are always achieved when these nutrients are kept at optimum levels in the sugar beet plant. If leaf quality is not maintained throughout the entire growing season through magnesium and manganese nutrition, reduced sugar production and sugar yield can be expected.

YaraVita BETATREL DF, developed specifically for application to sugar beet, is formulated to supply these vital nutrients in a concentrated, safe and balanced way. UK trials in 2016 have shown an increase in root yield of 4.2 t/ha at 2 x 5kg/ha and an increase in sugar yield of 0.89 t/ha.

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 programme to ensure adequate supply throughout the season including **YaraVita MANTRAC PRO**, **YaraVita MAGFLO 300**, **YaraVita MAGPHOS K**, **YaraVita BORTRAC 150** and **YaraVita STOPIT**.





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Applications for Field Vegetables



Brassica

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 brassica 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.

Multi-nutrient products include **YaraVita BRASSITREL PRO**, **YaraVita PHOTREL PRO**, **YaraVita CROPLIFT PRO**, and single nutrient products **YaraVita BORTRAC 150**, **YaraVita MOLYTRAC 250**.



Legumes

Balanced nutrition is one of the most important factors in achieving the maximum yield potential of peas and beans. Molybdenum is vital for nitrogen fixation and the metabolism of a number of other nutrients, including phosphorus and iron. Magnesium, manganese and iron are all involved in chlorophyll, photosynthesis and protein synthesis. Boron has functions in meristem growth and pollen germination. 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 programme to ensure adequate supply throughout the season, including the single-nutrient formulations - **YaraVita MANTRAC PRO**, **YaraVita MAGFLO 300**, **YaraVita MOLYTRAC 250**, **YaraVita BORTRAC 150** and multi-nutrient combinations – **YaraVita BRASSITREL PRO** and **PHOTREL PRO**.



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Applications for Fruit Crops

Top 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.

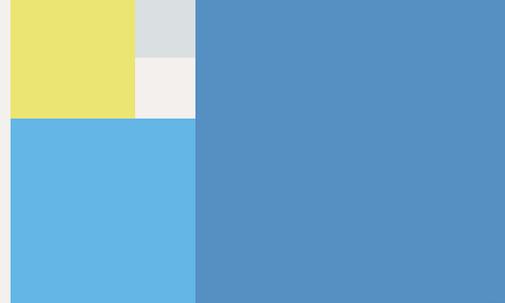
- Zinc and boron for flowering and fruit set.
- Calcium and phosphorous for fruit development, at-harvest quality and the storability of the fruit.
- Magnesium, manganese and iron for overall tree health and leaf quality.

Soft Fruit

Quality is increasingly recognised as crucial to success in the growing of profitable soft fruit crops. It's 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.

Phosphorous 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

There is only one way to measure a fertilizer: in its results.

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.co.uk or contact your local Area Manager for more information on 01472 889250.

You can also contact our agronomy team direct at agronomy.uk@yara.com.

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Nutrients by Product

PRODUCT	B	Ca	Cu	Fe	Mg	Mn	Mo	N	K	P	Na	S	Zn
Single Nutrients - Foliar sprays	Boron	Calcium	Copper	Iron	Magnesium	Manganese	Molybdenum	Nitrogen	Potassium	Phosphorus	Sodium	Sulphur	Zinc
BORTRAC 150	■												
COPTREL 500			■										
FERLEAF 100				■									
FOLIAR POTASH									■	■			
MAGFLO 300					■								
MANTRAC DF						■						■	
MANTRAC PRO						■							
MOLYTRAC 250							■						
SAFE-N 300								■					
STOPIT		■											
THIOTRAC 300								■				■	
ZINTRAC 700													■
Nutrient Combinations - Foliar Sprays													
BETATREL DF	■				■	■		■			■	■	
BRASSITREL PRO	■	■			■	■	■	■					
BUD BUILDER FL	■				■			■		■			■
CROPLIFT PRO	■		■	■	■	■	■	■	■	■		■	■
GLYTREL MnP						■				■			
GRAMITREL			■		■	■		■					■
MAGPHOS K					■				■	■			
MAIZE BOOST					■				■	■			■
MANCOZIN			■		■	■							■
MANCUFLO			■		■	■							
PHOTREL PRO	■				■	■	■				■	■	
SENIPHOS		■						■		■			
Nutrient Combinations - Seed Treatment													
GLYTREL MnP						■				■			

UK Product Range

Single Nutrients

Product	Nutrient	Pack Size
YaraVita BORTRAC 150 - concentrated liquid	150 g/l B	10 litre, 1000 litre packs
YaraVita COPTREL 500 - flowable suspension concentrate	500 g/l Cu	5 litre pack
YaraVita FERLEAF 100 - for foliar application	100 g/l Fe as EDTA	5 litre pack
YaraVita FOLIAR POTASH - concentrated liquid	500 g/l K ₂ O	10 litre pack
YaraVita MAGFLO 300 - flowable suspension concentrate	300 g/l Mg (500 g/l MgO)	10 litre pack
YaraVita MANTRAC PRO - flowable suspension concentrate	500 g/l Mn	5 litre pack
YaraVita MANTRAC DF - dry flowable	310 g/kg Mn	15 kg pack
YaraVita MOLYTRAC 250 - concentrated liquid	250 g/l Mo	5 litre pack
YaraVita SAFE N 300 - concentrated liquid	312 g/l N	10 litre, 20 litre packs
YaraVita STOPIT - concentrated liquid	160 g/l Ca	10 litre, 1000 litre packs
YaraVita GLYTREL MnP	93 g/l Mn, 93 g/l P ₂ O ₅	10 litre pack
YaraVita THIOTRAC 300 - concentrated liquid	300 g/l S (750 g/l SO ₃) 200 g/l N	10 litre, 1000 litre packs
YaraVita ZINTRAC 700 - flowable suspension concentrate	700 g/l Zn	5 litre pack

Crop-Specific Nutrient Combinations

Product	Nutrient	Pack Size
YaraVita BETATREL - for sugar beet	100 g/kg Na, 100 g/kg Mg, 40 g/kg B, 40 g/kg Mn, 12 g/kg N, 170 g/kg SO ₃	10 kg pack
YaraVita BRASSITREL PRO - flowable suspension concentrate for oilseed rape & brassicas	60 g/l B, 70 g/l Mn, 118 g/l MgO, 4 g/l Mo, 125 g/l CaO, 69 g/l N	10 litre pack
YaraVita BUD BUILDER FL for top & soft fruit crops	240 g/l MgO, 100 g/l Zn, 30 g/kg B, 69 g/l N, 50 g/l P ₂ O ₅	10 litre pack
YaraVita CROPLIFT PRO multinutrient product for all field crops	200 g/kg N, 80 g/kg P ₂ O ₅ , 140 g/kg K ₂ O + Mg + S, Mn, Cu, Zn, B, Fe, Mo	5 kg box 20 kg bag
YaraVita GRAMITREL - flowable suspension concentrate for cereals	64 g/l N, 250 g/l MgO, 50 g/l Cu, 150 g/l Mn, 80 g/l Zn,	10 litre pack
YaraVita MAGPHOS K for potatoes & other crops	440 g/l P ₂ O ₅ , 74 g/l K ₂ O, 60 g/l Mg	10 litre, 1000 litre packs
YaraVita MAIZE BOOST - for maize	440 g/l P ₂ O ₅ , 75 g/l K ₂ O, 46 g/l Zn, 40 g/l Mg	10 litre pack
YaraVita MANCUFLO flowable suspension concentrate for cereals	375 g/l Mn, 125 g/l Cu	5 litre pack
YaraVita MANCOZIN flowable suspension concentrate for cereals	330 g/l Mn, 110 g/l Cu, 84 g/l Zn	5 litre pack
YaraVita PHOTREL PRO - for oilseed rape, brassicas, legumes & other crops	80 g/kg B, 4 g/kg Mo, 70 g/kg Mn, 83 g/kg MgO, 288 g/kg SO ₃	10 kg box
YaraVita SENIPHOS for potatoes & fruit crops	310 g/l P ₂ O ₅ , 40 g/l Ca, 39 g/l N	10 litre, 1000 litre packs

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Visit www.yara.co.uk/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.

