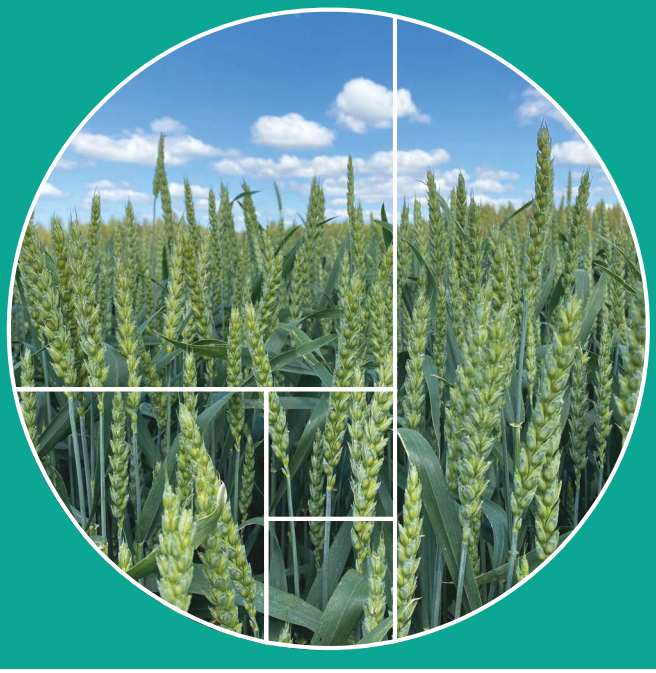
YaraAmplix™ OPTINUE™



Efficient combination of humic substances with nutrients to increase yield and quality

- Improves nutrient uptake
- Promotes root development and vegetative growth
- Increases rhizosphere efficiency
- Enhances abiotic stress tolerance

Product Description

YaraAmplix OPTINUE™ is a suspension concentrate formulation for foliar and soil applications based on a blend of nutrients and humic substances from leonardite from North Dakota in USA. It was developed to enhance nutrient uptake, root and vegetative growth and improve the efficiency of the rhizosphere.

Key Properties

- Highest concentration of humic and fulvic acids ≥ 65%
- Total organic matter: 75 - 90%
- High purity – low in regulated contaminants

Compared to other humic substance formulations OPTINUE is naturally processed micronizing and suspending leonardite in water without chemical alteration preserving all the bioactive components this allows the inclusion of macro, micro-nutrients and better compatibility with other inputs.

Enhances tolerance to abiotic stress

The humic substances present in OPTINUE stimulate the production of plant secondary metabolites involved in stress tolerance (e.g. phenolic components).

Detoxification of reactive oxygen species (ROS) produced under stress conditions.

Zinc and Mn are constituents of antioxidant enzymes that detoxify ROS and enhance tolerance to abiotic stress.

Improves root and vegetative growth

Humic substances can have an effect on enzymatic activity by inhibiting or stimulating specific enzymes.

The inhibition of the activity of the indoleacetic acid (IAA)-oxidase increases the IAA content in the plant which stimulates plant and root growth.

The lower molecular weight humic substances can stimulate enzymatic activity and simulate the action of plant hormones.

Zn and Mn that are present in the product play a role in the production and activation of plant hormones.

Untreated Control | **YaraAmplix OPTINUE**

94 days after application

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Untreated Control

YaraAmplix OPTINUE

Improves soil structure and rhizosphere efficiency

The humic substances in the product improve soil structure around the rhizosphere and create favourable conditions for the root development by improving rhizosphere efficiency.

Some of the main functions are to give the soil structure, better porosity, increased water holding capacity and cation exchange capacity.

This means enhanced rhizosphere efficiency that will increase the capacity to absorb nutrients and water.

Label recommendations

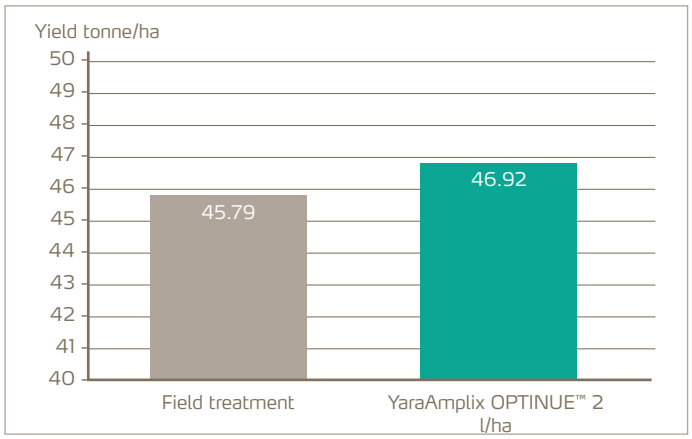
Crop		Rates	Application timing
Vegetables	Foliar	1-2 l/ha	1-2 applications every 10-14 days at early vegetative stage
	Soil	2-5 l/ha	3-4 applications every 2-3 weeks post transplant
Maize	Foliar	1-2 l/ha	When plants have 4-6 leaves
	Soil	2-5 l/ha	At planting to pre-emergence
Cereals	Foliar	1-2 l/ha	1-2 applications from tillering to GS 39
	Soil	2-5 l/ha	1-2 applications at planting and post emergence

ProCam conducted a field scale trial of OPTINUE in Maize in 2023. When compared to field standard treatments the addition of OPTINUE increased yield and dry matter.

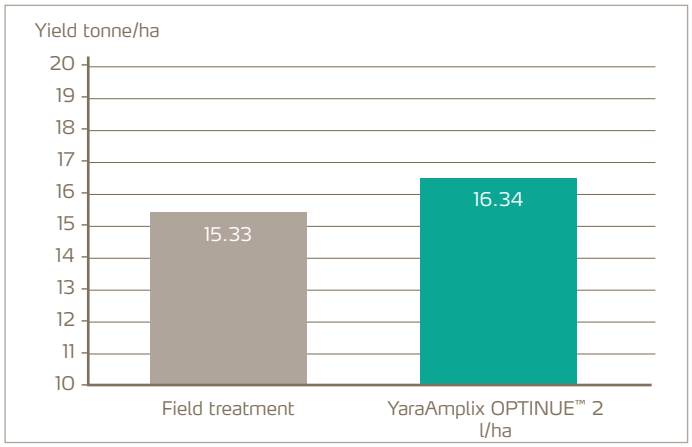
ProCam Trial 2023 Results

- OPTINUE 2.0 l/ha average fresh yield increase over control = 1.13 t/ha
- Extra value of fresh maize @ £50/t = £56.50/ha
- ROI = 2.4:1

Trial Results (fresh t/ha)



Yield Results (DM t/ha)



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