



Defender Zn® ZINC DEFICIENCY CORRECTOR

Benefits of its use

DEFENDER Zn® is a product formulated to correct and prevent zinc (Zn) deficiency. The inclusion of sugar acids as part of its ingredients (obtained by natural fermentation of wheat extracts) facilitates the absorption and metabolism of zinc in the plant. In addition, this source of sugars also represents a benefit when it comes to obtaining energy and the synthesis of glucyte reserves (starch) from sugars included in the compound.

The use of **DEFENDER Zn®** prevents and corrects zinc deficiency in soils. Most of the required zinc moves by root diffusion, which in turn depends greatly on the level of humidity in the soil. In turn, the pH of the soil has a marked influence on its availability. For example, the presence of carbonates (CaCO_3 , basic soils) significantly decreases the availability of the metal (zinc carbonates form). In this regard, several interactions with other elements present in the soil (and common in the formulations of the most commonly used fertilisers), such as phosphorus (P), nitrogen (N), iron (Fe) or copper (Cu), should be taken into account, since they have a negative effect on Zn absorption (thus, often leading to Zn deficiency).



Composition

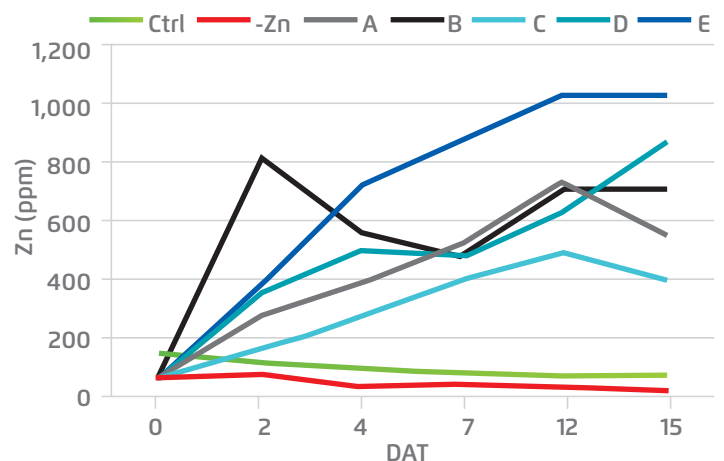
	(%w/w)	(%w/v)
Zn (Zn) ⁻¹ - water soluble	10.0	13.0

DEFENDER ZN COMPONENT	ACTION	EFFECT ON CROP
Zinc Zn	<ul style="list-style-type: none"> Regulation of sugar formation Good root development Promotion of auxin synthesis Maintenance of enzyme activity in photosynthesis and synthesis of chlorophylls 	<ul style="list-style-type: none"> Regulation of equilibrium between glucyte reserves and needs Improved nutritional state and water balance (good root system) Promotes vegetative growth (promoting cell division and elongation) Maintenance of or increase in photosynthetic activity (with consequential crop yield boost)
Sugar acids	<ul style="list-style-type: none"> Zn chelating action 	<ul style="list-style-type: none"> Improved metal absorption Energy source

Efficacy Trials

TREATMENT	DOSE	g Zn/Ha	Zn (ppm)
Positive control (Ctrl)	Original Hoagland Solution	0.0078	0.13
Negative control (-Zn)	Hoagland Solution, 0% Zn	0	0
Commercial product (min.) (A)	300ml/Ha*	204	3400
Commercial product (max.) (B)	600ml/Ha	408	6800
Defender Zn (C)	250ml/Ha	33	550
Defender Zn (D)	750ml/Ha	99	1650
Defender Zn (E)	1.5L/Ha	198	3300

Zn foliar content (ppm) throughout the study





System of application

DEFENDER Zn® can be applied diluted to leaves, with minimal water usage (300 L/Ha), or to the roots either by drip irrigation or hydroponics. A specific dose should be established for the crop by evaluating a range of guiding doses, based on deficiencies detected in the soil and leaf analyses. If the problem persists, the application may be repeated at the dosage determined previously.

Stability and storage

DEFENDER Zn® is stable for at least 3 years from the date of manufacture.

Store in a cool, ventilated place at temperatures below 50°C.

Do not store for prolonged periods in direct sunlight.

Keep out of the reach of children.

Do not eat, drink or smoke during use.

Dosage

DEFENDER Zn® A guideline dose range is established and optimal doses to be used are based on deficiencies detected in soil and leaf analyses. In the event of persistence, repeat the dose.

CROP	TIMING OF APPLICATION	FOLIAR APPLICATION		OTHER DETAILS
		CONCENTRATION ml/200L	DOSE L/ha	
Table and wine grape	Apply to shoots of 10 to 20cm. Repeat every 10 days - 2 applications	150 to 200	0.75 to 1.0	Apply together with DEFENDER MG
Peach, nectarine and plum trees	Apply from jacket fall every 20 days and after harvest	100 to 150	1.0-1.5	Apply during early post-harvest
Cherry trees	Early post-harvest			
Almond trees	Apply 15 to 20 days after full bloom, repeat after 15 days. Early post-harvest (corrective only)			
Apples and pear trees	Green tips		0.5 to 0.75	Repeat at 15 and 40 days
	Fruit growth	0.75		
	Early post-harvest	1.0		
Walnut	Apply during post-harvest		1.0 to 1.5	Corrective only
Citrus and avocado	Apply during spring and autumn sprouting	50 to 150	0.75 to 1.0	Corrective only
Mango	Apply during sprouting	150 to 200	0.75 to 1.0	
Strawberry and cranberry	Apply during plant growth	150 to 200	0.5 to 0.7	2 applications at most during season
Coffee	Apply during sprouting	150 to 200	0.5 to 0.7	Nutritional correction
Tomato, peppers and cucumber	Apply during fructification period	150 to 200	0.3	1 to 2 applications
Melon, watermelon, courgette				
Cabbage, broccoli, cauliflower	Apply during crop development	150 to 200	0.2 to 0.3	
Onion, garlic				
Celery				
Potato				
Corn	With 4 to 5 exposed leaves		1.0 to 1.5	

Compatibility

It is recommended that a compatibility test be performed in a small volume before applying any mixture with this product. For any questions, please contact your local distributor for technical advice.