CONCEPT STORE

EXPERIMENTAL TRIALS

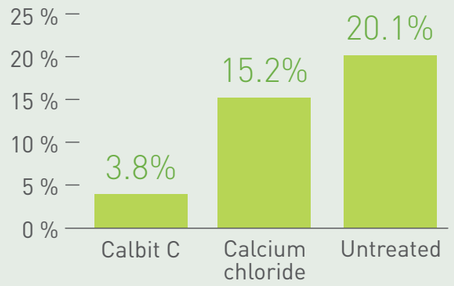
APPLE

COUNTRY: Italy
VARIETY: Fuji (Kiko8)
INVEST. (plants/ha): 5700
LEVEL: Level III on farm Big Plot

Treatments and growth stage of applications

Product	Volume of water/ha	Rate L-Kg/ha	Number of application
CALBIT C	1300	3	7every 15-20 days
CALCIUM CHLORIDE	1300	5	
UNTREATED TEST	-	-	

Results: % of bittered fruits



PHYSICAL PROPERTIES AND COMPOSITION

	FORMULATION	pH (1% in solution)	DENSITY (g/cm³) 20°C	COLOUR	CONDUCTIVITY E.C.-1‰(mS/cm)18°C
PHYSICAL PROPERTIES	liquid	8.0	1.45	brown	0.67
COMPOSITION	Calcium Elemental				
	11%				

DIRECTIONS FOR USE

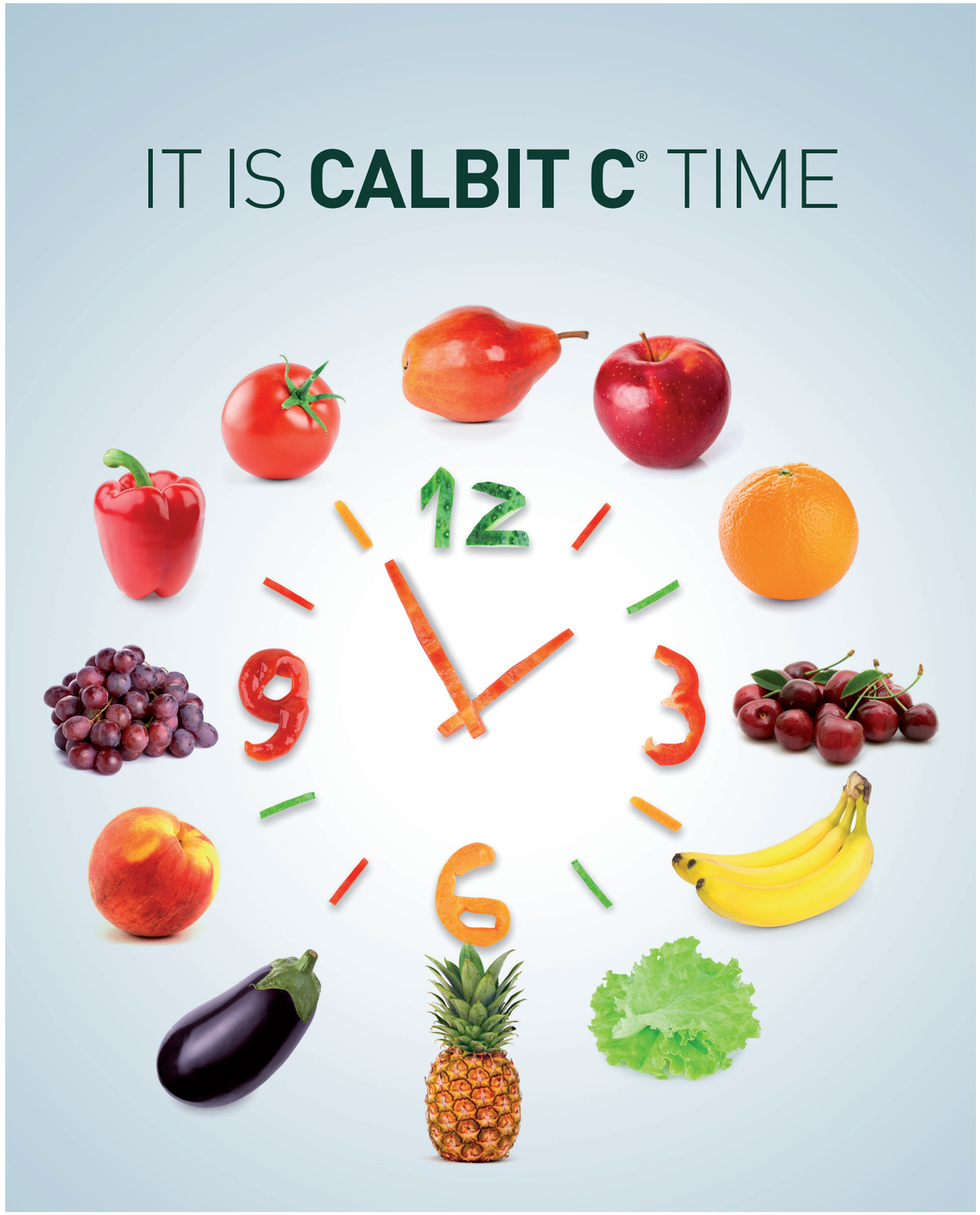
METHOD OF APPLICATION	CROP	PERIOD OF APPLICATION	DOSAGE
FOLIAR APPLICATION	fruits	applications every 10-15 days starting from fruit setting	2-3 L/ha
	vegetables	applications every 8-10 days starting from fruit setting	2-3 L/ha
	leaf vetables	weekly applications from 8-10 days after transplant	250-350 ml/hl
	flowers and ornamentals	applications every 8-10 days during the crop cycle	250-350 ml/hl
FERTIGATION	fruit	applications post fruit setting	10-30 L/ha
	vegetables	applications after fruit setting and during fruit enlargment	10-30 L/ha
	row crops	-	10-30 L/ha

CALBIT C
Tank 1 / 5 / 25 / 1000 L

Valagro®
Where science serves nature

Valagro S.p.A.
Zona Industriale Via Cagliari, 1
66041 Atessa (CH) - Italia

Tel: +39 0872 881.1
Fax: +39 0872 897.416
www.valagro.com



POWERED BY GEAPOWER

CALBIT C® is a Calcium-based nutritional product complexed with LSA (Ammonium Lignin Sulphunate) with high complexing capacity and biological affinity with the vegetal tissues which guarantees a faster and safer adsorption in leaves and fruits, optimizing nutrition.

Calbit C® is the result of Valagro's experiences and GEAPOWER technology.
www.valagro.com

Valagro®
Where science serves nature

WHAT IS CALBIT C?

It is a **Calcium-based nutritional supplement complexed with LSA (Ammonium Lignin Sulphonate)**, specific for the prevention and treatment of: bitter pit in apples, apical rot of tomato, rot (bruising) of pepper, drying of melon leaves, tip burn of lettuce, endive, chicory, cracking of cherry, peaches, nectarines, plums. Treatments with **Calbit lead to increased fruit firmness and consequently, longer shelf life.**

ROLE OF CALCIUM IN PLANT PHYSIOLOGY, UPTAKE MECCHANISMS AND RELATED PROBLEMS

Calcium is a key component of cells, maintaining the structure of the cell walls and stabilizing cell membranes. It also affects directly on the saline balance in plant cells and activates the potassium, to set the opening and closing of stomata and allow the movement of water in the plant. Calcium improves the germination of pollen, regulates some enzymatic systems and influence the growth and health of cells and conductive tissues. It has a specific influence on the quality of harvest. Despite the abundance of Calcium in the soil, **Calcium deficiencies remain as one of the main problems**, particularly in areas where climatic conditions are generally dry. The **low mobility of Ca** in the plant poses serious **problems to enhance the distribution** of this element to the fruit via root system application. Subsequently, treatment of aerial plant parts with Ca sprays, is recommended and applied in many fruit production areas, either as routine applications to prevent the occurrence of localised Ca deficiency in the fruit or to improve fruit quality. There is a connection between Ca uptake and possible related physiological problems.

Mechanism for uptake and translocation of Calcium	Possible related problems
Calcium can move through the soil as a "mass flow", meaning it can move into the plant with water as part of the transpiration flow.	Poor water supply or bad water management will incrase severity of Calcium deficiency symptoms.
Absorption of Calcium can be distrupted by Potassium (K^+) and ammonium (NH_4^+) which are quickly absorbed by the root.	Only a young or actively growing root system is able to supply the plant with the Calcium requirement.
Calcium is transferred within the plant through the xylem pathway, following the transpiration flow of water.	There is no transfer between shoots and fruit, and flow of calcium is very slow. High transpiration rate in the shoots may expose the fruit to Calcium deficiencies.
Calcium directly enters the fruit during foliar application, especially in the first phases of fruit development when stomata are active in the epidemis.	If applications do not begin from flower set, to ensure enough Calcium during the period of size increase, the risk of physiopathies is higher.

Valagro®

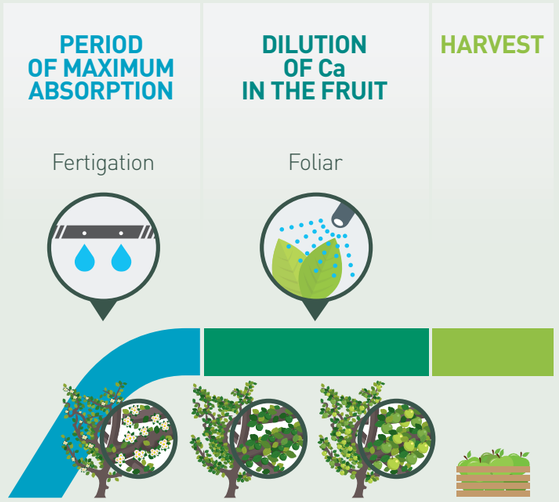
Where science serves nature

Valagro is a leader in the production and commercialization of biostimulants and specialty nutrients for use in agriculture, gardening, and industrial applications. Founded in 1980 and headquartered in Atessa (Italy), Valagro is committed to providing innovative and effective solutions for plant nutrition and care. Its mission is to increase the quantity and quality of plants and harvested crops while enhancing productivity and reducing the environmental impact of cultivations.

CALBIT C THE SOLUTION FOR THE PREVENTION AND CURE OF CALCIUM DEFICIENCIES

CALBIT C (CaO 15%) **prevents and treats Calcium deficiencies** in fruits and leaves of various crops. It is the ideal solution for applying Calcium via fertigation thanks to the presence of LSA complex which protects it from insolublisation reactions. If **applied to the leaves**, CALBIT C is not phytotossic and does not cause russeting on the fruits sensitive to such physiological problems (e.g. pome fruits).

CALBIT C applications both in fertigation and foliar applications guarantees the **optimal quantity of Calcium during the phenological phases of higher and lower adsorption**, excluding any symptom of deficiency, as reported in the illustration.



FOCUS ON **LSA**

LSA (Ammonium Lignin Sulphonate) is a complexing agent derived from naturally present lignin in different types, depending on the species from which it is extracted. Lignin is formed by polymerisation of three hydrocinnamic alcohols, also known as monolignols. This is comprised of p-coumaryl alcohol, conyferil alcohol, and sinapyl alcohol. The ratio of the three monolignols in the lignin molecules is important in influencing complexation and release of trace elements in the tissues.

Valagro's technology allows us to choose the most appropriate plant species and to use the most **innovative methods of extraction** in order to obtain a lignin with an optimal ratio of the three monolignols. This translates into the **greater capacity for complexation of trace elements**, the natural selectivity and easier penetration into plant tissues that characterise Calbit C.

INNOVATION ACCORDING TO **GEAPOWER**

Using science to seize and exploit the potential of Nature with an eye to environmental sustainability:

This is the principle behind GeaPower, the exclusive technology platform developed by Valagro in order to turn potential active ingredients into high-quality nutrient solutions. A technology based on four fundamental concepts:

- Deep knowledge of active ingredients and raw materials
- Selection of the extraction methods of active ingredients
- Cutting edge investigations and analytical skills
- Proven ability to provide effective solutions to the customer's requirements