

# to soil

TREATMENT	DOSE ACCORDING TO CULTIVATION TYPE (l / ha / week)			OBSERVATIONS
	VEGETABLES	ORNAMENTAL	FRUIT TREES	
Bionare Suelo	1.0 - 3.0	2.0 - 4.0	1.0 - 3.0	Complementary treatment to mineral nutrition. Break down suggested dose among the number of applications carried out during the week.
Huminare	5.0 - 10.0	5.0 - 10.0	5.0 - 10.0	



## complementary treatment

- over-irrigation before the freeze
- avoid over-irrigation if there is no freeze threat
- over-fertilize
- selection of fertilizers of high solubility at low temperature
- adequate orientation of furrows

# product line

PRODUCT	DESCRIPTION	BENEFITS
<b>Bionare</b>	Liquid foliar biostimulant based on L-amino acids, vitamins and microelements.	Activates the metabolism of cultivation.
<b>Germi MAX</b>	Liquid foliar biostimulant based on L-amino acids, organic extracts, silicon and microelements.	Activate the metabolism of crop to increase crops.
<b>Germi SUPRA</b>	Stress Reducer Based L-amino acids, minerals and organic extracts	Regulation of metabolic processes, increasing the formation of carbohydrates.
<b>ViGonare</b>	Liquid Root Vigorizer based on L-amino acids, minerals and extracts organics.	Strengthens root development by supporting the establishment of crops.
<b>Bionare SUELO</b>	Liquid root biostimulant complex based on L-amino acids.	Increase the root development and the leveraging of nutrients in the soil.
<b>Surfare</b>	Surfactant, penetrating, moisturizer, acidifier and pH indicator.	Increase the efficiency on the application of agrochemicals.
<b>Huminare</b>	Liquid humic acids complex enriched with microelements.	Increase the leveraging of nutrients of the soil.
<b>Germi PHOS</b>	Balanced liquid foliar nutrient and L-amino acids.	Increase the energy level of the plant.
<b>Germi PLEX</b>	Balanced liquid foliar nutrient and L-amino acids.	Reinforce the metabolism of the cultivation thanks to the contribution of balanced nutrients.
<b>GermiK</b>	Liquid foliar nutrient rich in potassium and L-amino acids.	Activate the metabolism of cultivation.
<b>Germi CALCIO</b>	Saline soil enhancer.	Favours the release of sodium in the soil, as well as the sodium/calcium exchange.



## antistress treatment

**Germinare**  
leader in plants stress control

caused by cold



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# stress caused by cold

## WHAT EFFECT PRODUCES COLD IN CULTIVATION ?

The effect of cold over the development of cultivation may have a **wide range of manifestations**, going from **slowness in growth to death of the plant**, depending of the temperature attained and the time of exposure.

## temperatures

*optimal temperatures for different cultivations*

CULTIVATION	BASE TEMPERATURE		OPTIMAL TEMPERATURE	
	Minimal (°C)		Minimal (°C)	Maximum (°C)
<b>VEGETABLES</b>				
Cucumber	13	18	28	
Melon	14	18	30	
Courgette	12	15	30	
Pepper	12	16	28	
Aubergine	10	15	26	
Lettuce	6	10	20	
Tomato	6	13	26	
<b>FLOWERS</b>				
Carnation	6	10	21	
Rose	12	14	25	
Gerbera	10	13	24	
Chrysanthemum	8	13	25	

## stages of exposure to cold

**LOW TEMPERATURE:** When the plant is slightly under the optimal threshold for its growth.

**COOL OFF:** Stage in which cultivation is near its base temperature and where temperatures are not as low for ice to be formed in the tissues.

**FREEZE:** When water intra and inter cellular reaches the point where it becomes ice.



## effect of exposure to cold

EXPOSURE TYPE	DAMAGE
LOW TEMPERATURE	A) Elongation of the cycle caused by reduction of metabolic activity. B) Low productivity caused by metabolic imbalance. C) Reduction in the supply of nutrients caused by the reduction of solubility in the soil solution and its translocation in the plant.
COOL OFF	D) Reduction of permeability of membranes. E) Reduction of energy available caused by damage on mitochondria. F) Increase in free radicals synthesis and reduction in antioxidants synthesis.
FREEZE	G) Death of tissues or plant caused by the broke of cellular membranes.

## Germinare treatment

### foliar low temperature

TREATMENT	DOSE ACCORDING TO THE CULTIVATION TYPE (l / ha / week)				OBSERVATIONS
	VEGETABLE	ORNAMENTAL	FRUIT TREES	EXTENSIVE	
Bionare	0.25 - 1.0	1.0 - 2.0	0.5 - 1.0	0.25 - 0.5	Carry out applications every 5 - 7 days alternating the proposed treatments.
Germi-Phos	1.0 - 4.0	1.0 - 4.0	2.0 - 5.0	1.0 - 3.0	
Surfare	1 ml / liter of water	0.25 - 0.5 ml / liter of water	0.5 - 1.0 ml / liter of water	1 ml / liter of water	
Bionare	0.25 - 1.0	1.0 - 2.0	0.5 - 1.0	0.25 - 0.5	
Germi-Plex	1.0 - 4.0	1.0 - 4.0	2.0 - 5.0	1.0 - 3.0	
Surfare	1 ml / liter of water	0.25 - 0.5 ml / liter of water	0.5 - 1.0 ml / liter of water	1 ml / liter of water	

### foliar cool off

TREATMENT	DOSE ACCORDING TO THE CULTIVATION TYPE (l / ha / week)				OBSERVATIONS
	VEGETABLE	ORNAMENTAL	FRUIT TREES	EXTENSIVE	
Bionare	0.5 - 1.5	1.5 - 3.0	1.0 - 2.0	0.5 - 1.0	Apply 5- 7 days before the event, repeat 24 - 36 hours before.
Germi - K	1.0 - 4.0	1.0 - 4.0	2.0 - 5.0	1.0 - 3.0	
Surfare	2.0 ml / liter of water	0.25 - 0.5 ml / liter of water	1.0 - 2.0 ml / liter of water	2.0 ml / liter of water	

