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VINE STRESS (FROST, HEAT, WATERLOGGING)

What can you do about it?

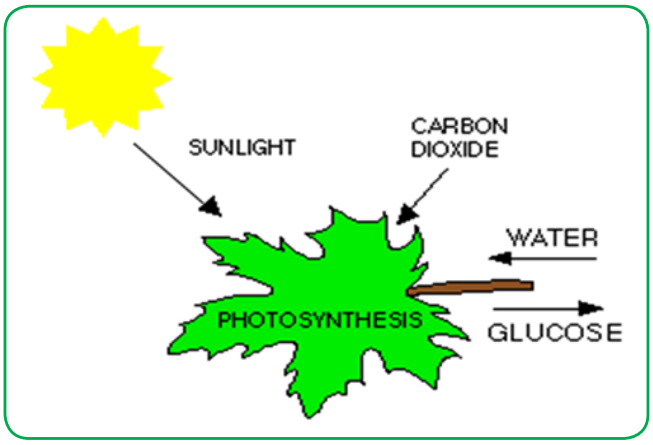
ANSWER: Mega-Kel-P

Mega-Kel-P™

When stress events occur, there are two main impacts that impedes in the plants ability to maximize production.

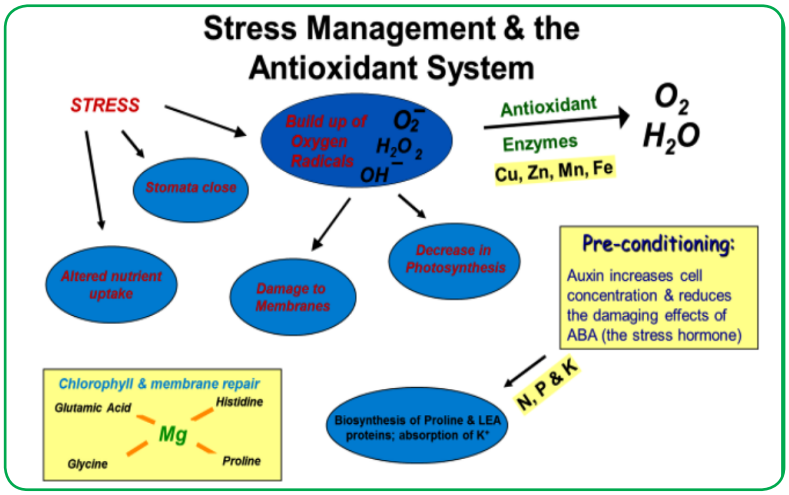
1. Stomata close impeding on the plants ability to photosynthesize and respire. This means that the plant may not create sugars by carbon fixation (photosynthesis), nor utilise sugars (respiration) for energy and production. In such stressful situations plants will start exhibiting symptoms like chlorosis.

2. Self-poisoning by products of anaerobic metabolism (build-up of free radicals due to build-up of oxides). During conditions of stress, plant stomata closes, which leads to build up of oxygen radicals within the plant. This buildup can lead to increased formation of superoxides such as peroxide. These products can damage plant membranes.
It will also increase the production of plant hormones such as abscisic acid(ABA) which can cause physiological problems like fruit drop. Trace elements like manganese(Mn), iron(Fe), copper(Cu) and zinc(Zn) are part of the antioxidant enzyme system to breakdown free radicals into water(H_2O) and oxygen(O_2).



Why use Mega-Kel-P after stress?

- Sufficient levels of trace elements to produce required sugars and breakdown free radicals.
- High in phosphorus to produce sufficient ATP. ATP is an energy carrier and used in different plant metabolism activities.
- High hormonal stimulants generated from kelp for promoting and conditioning the energy production process, and improved root growth. Root growth is important to re-start proper nutrient and water uptake after plants go through stressful conditions like waterlogging.
- Kelp and the combination of nutrients have been proven to reduce abscisic acid production which induce fruit drop.



- Sufficient magnesium for repairing chlorophyll molecules.
- Well balanced trace elements like copper, zinc, manganese and iron which are active in the plant antioxidant system.

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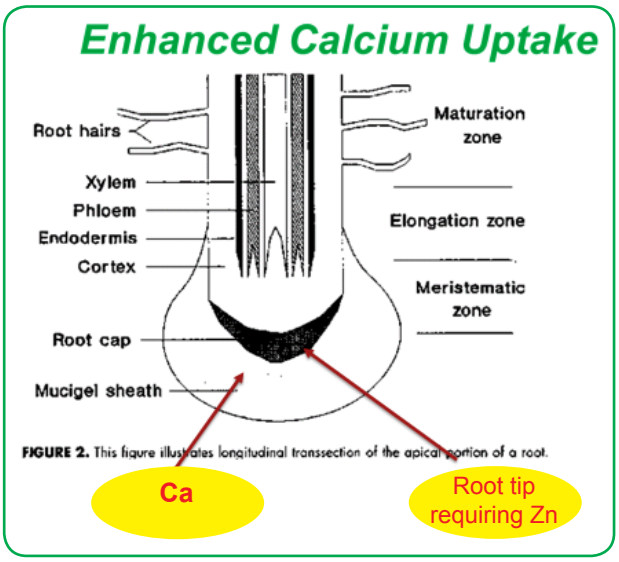
Kelp and stress

Mega-Kel-P is a kelp-based nutrient foliar product that will assist plants in the resistance and recovery process after stress.

Put simply:
Kelp will change the make-up of the water content in the cell cytoplasm and change its freezing point, and also has the same impact in cooling the plant (similar to radiator fluid in a car). This is how kelp products are used to assist in the prevention of stress prior to a frost or heat event.

One of the key methods of stress resistance is to ensure cell wall integrity is high. Calcium is very important for this. Kelp contains a hormone (Auxins) that are in a form of plant hormone Indole Acetic Acid (IAA) used to stimulate root growth. As calcium is taken in through root tips, it is important to stimulate constant root flushes for the plant to find "new" calcium. Such root flushes will also assist with finding moisture and nutrients. With the application of Mega-Kel-P, you are also applying essential nutrients required for root flushes and root tip development. Zinc (and other nutrients) is very important for root tip development which is why zinc is related to root growth.



The second important aspect of kelp is to trigger root tip development. By doing so, it will trigger the production of cytokinins. Cytokinins will result in improved cell division for plant recovery. Furthermore, if the plant is not producing cytokinins, the production of ethylene commences, resulting in fruit and leaf abscission.

Mega-Kel-P offers the benefits of kelp along with the necessary nutrition for energy and recovery. It also provides the nutrients required as co factors and catalysts to ensure super oxides are not produced causing damage to the plant. It will help with calcium uptake and assist in reducing fruit drop (your crops will hold on longer). It is kelp but just better with nutrition and other organic acids and biostimulants.

"Mega-Kel-P will help plants compromised by water logging stress condition"

Dr Teferi Belayneh - Plant Physiologist specialising in plant energy.

Another helpful hint

K-humate will also assist in recovery by stimulating beneficial fungi essential for improved nutrient uptake

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