

A SUGAR LIFE

Sugars are organic compounds necessary for the normal operation of the organisms. Sugars are produced in the plants through photosynthesis procedure. They are used as energy source and as structural components of the cells in all organisms. They are divided into mono-saccharides, oligo-saccharides and poly-saccharides.

MONO-SACCHARIDES

The degradation of mono-saccharides (e.g. glucose) supplies cells with energy for covering their energy needs. Mono-saccharides such as ribose and deoxyribose are involved in the synthesis of RNA and DNA respectively since they are components of nucleotides. In addition, mono-saccharides are structural components of cellular membranes. Plants produce sugars by their selves through the process of photosynthesis. Unlike, humans take them through food. Sugars are absorbed by the walls of the intestine and then they pass into the bloodstream in order to be used as energy source.

OLIGO-SACCHARIDES

They are energy source for the organisms. A major oligo-saccharide is Sucrose, a plant fruit component which is a glucose source for the animal organisms.

POLY-SACCHARIDES

The primary polysaccharides are starch, cellulose and glycogen.

STARCH

Starch is the main energy storage for the plants. The degradation of starch offers molecules of glucose that are oxidised (respiration) supplying the plant cells with energy. Starch is the most important polysaccharide in the human nutrition. Foods high in starch are rice, potato and cereals.

CELLULOSE

Cellulose is the main ingredient of the cell wall in plant cells.

GLYCOGEN

Is a long-term energy storage in the animal and fungal cell. In vertebrates it is formed primarily by the liver and the muscles.

THE IMPORTANCE OF SUGARS IN PLANTS

Sugars are structural components of plants cells. In plants they are produced through photosynthesis. When there is not a sufficient amount of sugars, the growth of plants, fruits and root system is negatively influenced. Sugars are essential for the bud formation. An adequate amount of sugars ensures a fruit filling resulting in bigger and more qualitative fruits. Sugars play a key role in the fruit maturing.

It is known that the final fruit size is determined in the first weeks of the plant growth. In this period plants show high photosynthetic activity. When the content of sugars is increased in plants, the nutritional value of the fruits is going up as well. The synthesis of poly-saccharides leads to the early fruit maturing.

CALCIUM

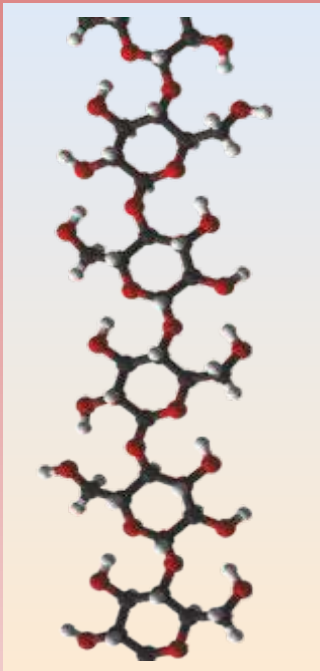
Calcium assists mainly in fruit firmness. It increases cell wall thickness and as a result plant tissues become more stable. Calcium also fortifies the fruit resistance against infections caused by insects and against cracking caused during transportation. Furthermore, it improves fruit quality.

MAGNESIUM

It is the central ion in the chlorophyll molecule and as a consequence is essential for the photosynthesis procedure. It activates many enzyme systems that participate in the fruit formation. It is involved in the production of sugars and fats.

POTASSIUM

It is necessary for the formation of sugars and the protein synthesis. It improves the coloring of the flowers. It increases shelf life of fruits and improves the quality and the size of fruits, vegetables and grains. In roses potassium increases the length of the stems while in grass it enhances the green color.



BRIX in

BRIX in is a liquid condensed biostimulant which accelerates the biological procedures that induce the maturing of fruits and vegetables. Furthermore, **BRIX in** contains substances which improve the qualitative features of the fruits and the flowers when it is applied on fruits, vegetables and ornamentals. This results in the increase of the production value which means a raise in the farmers' profit.

APPLICATION

BRIX in is applied foliarly at the final stages of the growing season after it has been dissolved in an appropriate amount of water.

TYPICAL ANALYSIS (w/w)

Mono- Oligo- Poly- saccharides	17.3%
Organic matter	21.6%
Nitrogen (N)	2.0%
Phosphorus (P ₂ O ₅)	0.3%
Potassium (K ₂ O)	4.2%
Calcium (CaO)	2.5%
Magnesium (MgO)	0.6%
Sulphur (S)	0.2%
Micronutrients	0.6%

PROPERTIES

- Accelerates the fruit maturing.
- Increases the content of sugars and micronutrients in the fruits.
- Improves the coloring and flavor of the fruits.
- Contributes to the fruit sizing, leading to more firm fruits.
- Increases shelf life of the fruits.
- Fortifies fruits tolerance during transportations.
- Induces ornamentals to produce flowers with more vivid colors and intense scent.



CROP	APPLICATIONS	APPLICATION RATE
Tomato, Pepper, Eggplant, Cucumber, Squash	7-10 days before each harvest	2.5-10 l/ha
Industrial Tomato	At fruit maturing	1.5-5 l/ha
Melon, Watermelon	Every 1 - 2 weeks starting at the fruit set until harvest	2.5-10 l/ha
Strawberry	Every 1 - 2 weeks after the fruit maturing (whitening of the fruit)	3-5 l/ha
Ornamentals	First application at the initiation of flowering. Repeat applications every 1 - 2 weeks	1-3 l/ha
Pome fruits, Stone fruits, Vineyard	First application at fruit maturing followed by a second application 10 - 20 days before harvest	8-12.5 l/ha
Citrus	First application at fruit formation, second application at full growth of the fruit and third application at the beginning of maturing	4-6 l/ha
Dilution rate: 1:200-400		

