



China



SOFT GUARD

Organic Chitin (chitosan)

Natural antibiotic liquid chitin

To increase plant immunity and resistance to stress, fungal and viral infections, and nematodes



Introduction :-

Soft Guard works as a nutrient and as an antibiotic for plants at the same time, as it consists of a group of chitin that provides nutrients to the plant and at the same time can be easily absorbed by the plant to increase growth, increase the degree of coloration of the fruit, its brightness, its storage period, strengthen the root system and increase productivity. It also has a distinctive effect in raising the immunity and resistance of plants to various infections and nematode infections.

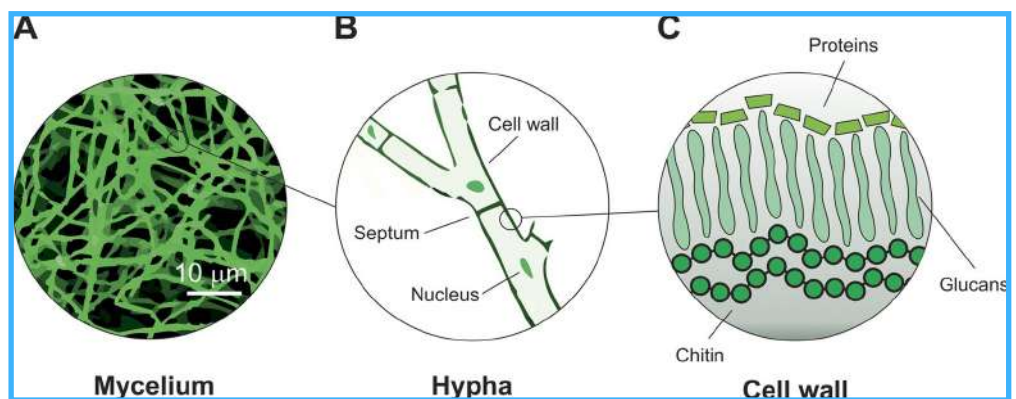


Composition :-

PH	Chitin
PH	g / l
5 - 4	19

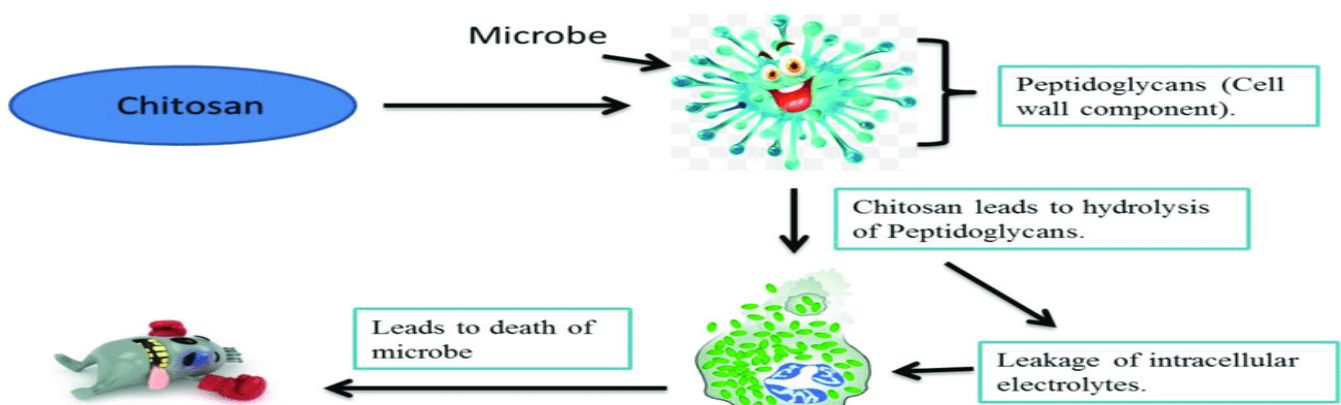
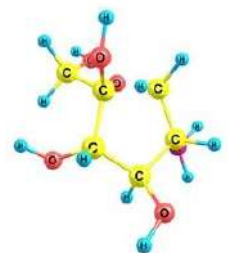
Chitosan as an antimicrobial agent

- Chitosan is a polysaccharide polymer extracted from chitin, which is found in the outer shells of some aquatic organisms such as shrimp. It results from the complete removal of acetyl groups, which converts it into a substance soluble in water.
- It is used to combat infection with fungi, viruses and nematodes.
- The chitosan polymer is characterized by its general ability to dissolve the cell walls of microbes, disrupt the cohesion and integrity of the microbial cell, and tear the walls and membranes of its cells.



- Chitosan also stimulates one or more resistance mechanisms in plants, such as increasing the metabolism of phenolic compounds and building lignin to harden cell walls, reduce infection, and increase the activity of anti-fungal enzymes such as chitinase, chitosanase, and glucanase, in addition to stimulating plants treated with chitosan to produce phytoalexins, which the plant creates after any It was subjected to microbial stress or injury, as it acts as direct antibiotics and a barrier against any external stress

Chitosan





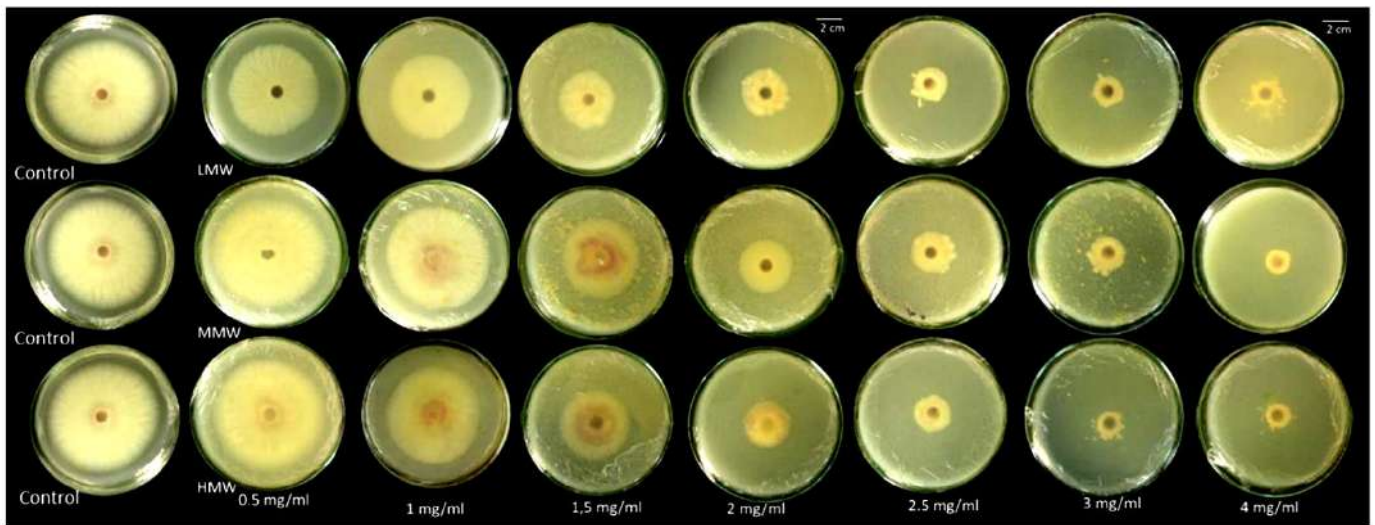
Soft Guard features:

- 1) **Certified organic compound, consisting of the wonderful chitosan compound in the form of polysaccharides, which is extracted from powdered shrimp and crab shells.**
- 2) **The plant protects against diseases because of its antibacterial, antifungal and antiviral properties.**
- 3) **Works to enhance the natural immune system of plants to resist diseases such as antibiotics.**
- 4) **It protects plants from soil-borne diseases and reduces the damage caused by nematodes.**
- 5) **It improves and increases plant growth rate and resistance to salinity thanks to its stimulation of proline production within the plant.**
- 6) **It increases the process of photosynthesis, which leads to stronger growth and higher productivity.**
- 7) **Protects the plant from drought conditions and helps it overcome heat stress.**
- 8) **Chitosan polysaccharide is a natural organic material that feeds beneficial soil microbes.**
- 9) **It increases the growth and multiplication of beneficial microbes in the soil, which helps protect plants from diseases through their competition with disease-causing microbes.**
- 10) **It can prevent nematode damage by creating unsuitable conditions for their feeding and reproduction. It also increases the percentage of fungi that parasitize on nematode eggs, which significantly reduces their reproduction and damage.**
- 11) **It is used to accelerate the healing of plant wounds.**
- 12) **Chitosan helps to hold water in soil, especially sandy soil.**
- 13) **Chitosan acts as a vital fertilizer for poor soils, as it has a chelating ability for nutrients thanks to the side amino groups included in its structural composition.**
- 14) **It is a permanent source of nitrogen feeding the soil by consuming chitosan in the soil and breaking it down by beneficial microbes.**
- 15) **It increases soil retention of nutrients, reduces their loss, and increases their absorption rate.**
- 16) **It helps to increase the percentage of seed germination when it is used by soaking in it.**
- 17) **Increasing the dry matter of the plant and thus increasing the weight and quality of the fruits.**
- 18) **Promote early coloration of fruits under low winter temperatures.**
- 19) **Chitosan works as a waxing and preserving material for fruits during storage periods and periods of high temperature and strong winds, especially those loaded with dust, as it preserves the moisture, degree of color and luster of the fruits.**



Results of chitosan experiments on plants infected with Fusarium:

In the first experiment, petri dishes appear in which the *Fusarium* fungus grows, which infects plants with the disease of seedling death. Where the first column was not treated, but the rest of the columns were treated with different concentrations of chitosan, starting from 0.5 to 4 mg / ml. It is noted the effective effect of chitosan on dishes treated with high concentrations of it.



In this experiment, tomato plant pots uninfected with *Fusarium* (1) appear, followed by tomato pots infected with *Fusarium* (2) (and the effect of the deadly *Fusarium* fungus on seedlings appears), then followed by tomato pots infected with *Fusarium*, but treated with chitosan (3) (and the good and distinctive therapeutic effect of chitosan appears against fungus).





SoftGuard on cucumber in Shangdong, China (Anti-TYLCV)



Improving resistance to late spring coldness



Relieves phytotoxicity caused by herbicide



The contribution of Soft Guard in raising cucumber resistance to infection with the virus and the harmful effects of cold and frost

The contribution of Soft Guard in avoiding the harmful effects of spraying herbicides on potato plants and resuming production normally

Soft Guard's contribution to raising lettuce's resistance to the harmful effects of



Raising the immunity of the okra plant to resist spider infestation and continue production





How to use and doses:

Treatment	Dose	Application	Notes
Soak the seeds	125 - 150 ml/100 L	2 - 3 time every 10 - 15 day	During the seedling period and the period of growth and fruit development
Foliar Spray	125 - 160 ml/100 L		
Drench	125 - 160 ml/100 L		

Usage recommendations:

- Store in a dry place and away from direct sunlight.
- It is safe for health and the environment and is non-flammable, as it is an organic substance.
- It does not accept mixing with alkaline pesticides, but it can be mixed with other agricultural materials and fertilizers, provided that a mini experiment is conducted before use and generalization.

Packings :-

Soft Guard is available in 1 liter .

Chitin Liquid Fertilizer