

# 100% Organic Cell Strengthenener

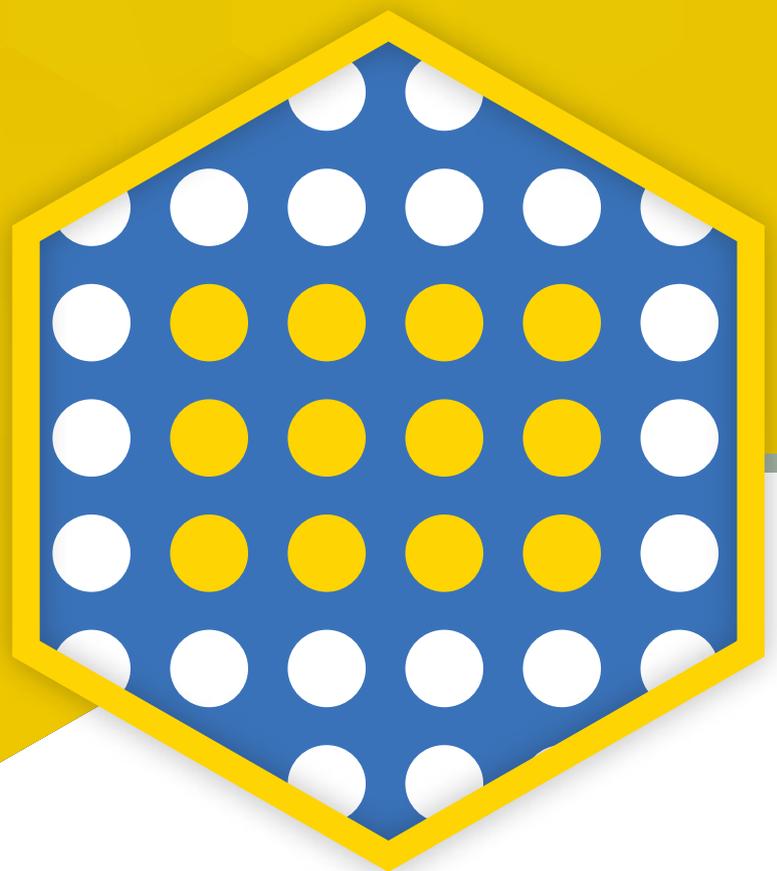
A finely powdered diatomite used for insect pest control and registered for use in grain storage



Exclusive Distribution Partner  
for Queensland

## DiaSil™

Micronized Diatomaceous Earth



**Ds** DiaSil™



- ✓ Stronger cell walls resulting from silica use creates thicker stems & increases growth
- ✓ Increased resistance to environmental stress, pathogens and pests.
- ✓ Enhanced metabolic functions



## What is DiaSil?

An organic, Biological Farmers Association (BFA) certified, finely ground, 10 micron, dust of diatomaceous earth. The active constituent consists of 900g/kg Amorphous Silica.

## Mode of Action

Diatomaceous earth is composed of the fossilised remain of tiny organisms known as diatoms. The edges of these fossilised diatoms are extremely sharp and will lacerate the exoskeleton of nearly any crawling insect that comes in contact with them. Once their outer shell has been lacerated, the powdery DE dehydrates the insect, killing it, although not instantaneously.

Resistance is not likely since it is the physical and not chemical properties of DiaSil that make it an effective insecticide.

- Will kill most small crawling insects. Those that fly will likely be less effected.
- Bees have a layer of fine hairs that prevent them from being affected by the diatomaceous earth. DiaSil has been trialled and found effective at controlling the small hive beetle, without affecting the honey bee.
- Time to control will depend on the insect you are targeting and how quickly they move. If the DE is applied directly to the insect, effects will be notice within 24 hours. If DE is applied, and insects must move through it, effects are seen within 7-21 days.
- Can be applied as a dry dust powder or wetted down (in combination with a surfactant) and applied as a foliar spray.
- Completely safe to cattle and humans. If ingested by cattle, DE will help to control internal parasites (roundworm, flukes, tapeworm)

## Benefits

### Stronger cell walls

Silica fortifies cells from the inside out. Cells are the building blocks of the plant's framework.

### Stronger cells mean bigger stems

Thicker cell walls resulting from silica use create bigger stalks and stems that can uptake and transport more water, nutrients, and plant secretions throughout the plant body, facilitating faster growth rates and bigger plants.

### Increased resistance to environmental stress

In plants silica helps perform many of the same key functions as the immune support system in animals.

Silicon has been shown to alleviate drought, salt stress and improve wind, rain and heat tolerance. The presence of silicon aids crop plants by strengthening cell walls. This in turn slows transpiration, alleviating salt and water stress.

### Increased resistance to pathogens

The plant accumulates silica around the infected site forming selectively fortified areas that can fend off fungal infections. Plants use silica to build up an additional mineral barrier, essentially lining the cells, making it more difficult for diseases and plant pathogens to make their way inside the plant.

### Increased resistance to pests

Silica accumulates in the epidermal cell walls of leaves, making it harder for biting and sucking bugs to damage the plant. Deposits of silicic acid within the cells act as an additional barrier to sap sucking insects. Foliar feeding is the most efficient way to ensure the silica gets directly absorbed into the leaves where it can be immediately used.

## Enhanced metabolic functions

Plants grown with the use of a Plant Available Silica are shown to have higher concentrations of chlorophyll in their leaf tissue compared to plants grown without.

- High grade, finely ground freshwater diatomaceous earth (<10µm)
- APVMA registered
- Registered as an allowable input for organic farmers by BFA
- DiaSil has an indefinite shelf life
- Remains effective for as long as it is present
- Used for the control of cockroaches, silverfish, ants, fleas, flies, ticks, lice, earwigs, aphids, white fly, beetles, loopers, mites, snails, slugs, leaf hoppers, head lice and mealybug.
- Can also be used for the control of internal parasites of stock.
- Non-toxic for humans as well as livestock and poultry
- Non-toxic to soil microbe populations
- Contact insecticide is most effective against crawling insects. Flying insects are less likely to be affected by the presence of DiaSil in the environment

## When Should Silica be used?

Research shows that silica should be used throughout the entire life cycle of the plant, from the seed and seedling stages up until harvest. In order to produce optimal results, silica needs to be continually made available to the plant. Once a plant has absorbed the available silica into its cellular structure, it can no longer be redistributed to other parts of the plant.

Plants grown hydroponically in a soilless medium therefore have no direct source of silica unless it is added as a supplement to the nutrient regimen. As a seedling drench or foliar applications

## How Should Silica be Applied to Plants?

Plants can absorb much more through foliar feeding than just absorption through the root zone. If using silica as both a foliar and a root feed, be careful not to overdose the plants. Use frequent leaf and soil or nutrient analysis with a Calcium chloride test to ascertain plant requirements.

Silica is alkaline by nature and therefore will naturally raise the pH level of your nutrient solution.

**It should be added after the other nutrients have been thoroughly mixed into the water** to avoid nutrient lockout that may occur when it comes into direct contact with other elements in the solution.

**DiaSil** powder needs to have constant agitation during tank mixing and foliar applications.

For maximum crop performance and impressively healthy harvests, try **DiaSil** as an elemental addition of **Plant Available Silica** to your usual cropping program.

# Application Guides

## Seed Applications

2-5 kg per 100 kg of seed

## Seedling Applications

5g per meter square of seedling tray as a drench in nursery applications. Every 3-4 weeks

## Soil Application

2-5g/m<sup>3</sup> – Distribute DiaSil to give an even coating over entire field

Fertigation - 10 kg per ha 2 to 3 applications or as required through season (refer to Si soil analysis Calcium chloride test)

## Foliar application

15 – 50g/L full cover drench low volume sprays

1 - 2kg per 100 litres up to 1000 litres per Ha. Greater volumes use at 1 kg per 100 litres as a full cover spray. Product will dry on leaf surfaces and may leave a white residue that can be washed off during post-harvest