

The central graphic features the word 'Silicon' in a large, bold, dark green font. The letters 'ON' are placed inside a dark green circle to the right of the word. Below this, the words 'Silicon Fertilizers' are written in a smaller, bold, dark green font. The text is set against a white background that is partially framed by a large, curved green arrow pointing upwards and to the right. The background of the entire image is a blurred green field of crops.

IMPORTED  
FROM EU



# 6 Keys to achieve growth and yield

Silic<sup>on</sup> increases



- 1 Resistance to disease and pest.
- 2 Cell structure.
- 3 Photosynthetic Activity.
- 4 Uptake of Nutrients
- 5 Resistance to Environmental Stresses.
- 6 Post Harvest Life.

# 6 Keys to achieve growth and yield

## Silic<sup>on</sup> increases

### 1 Resistance to disease and pest:

Si deposition in the epidermis tissues provides a physical barrier to pathogens and insects, allowing for a reduction in the frequency of chemical applications.

### 2 Cell structure:

Si accumulated on the epidermal tissues increases the mechanical stability of the plant. Reduces the incident of lodging.

### 3 Photosynthetic Activity:

The improved structure produces stronger stems with more erect leaves, increasing its ability to capture light.



### 4 Uptake of Nutrients

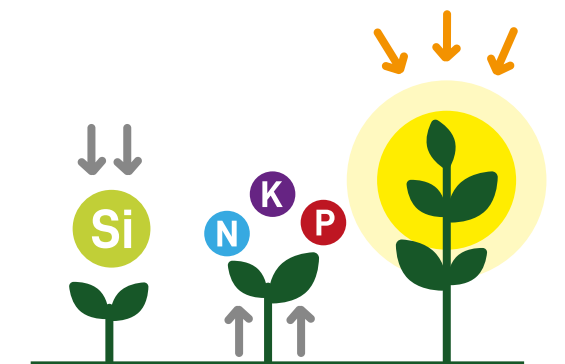
Particularly Nitrogen, Phosphorous, Potassium and Micronutrients.

### 5 Resistance to Environmental Stresses.

- **Reduced drought and heat stress.** The deposition of Si in the plant tissues reduces transpiration rates.
- **Reduce salt stress** by inhibiting Sodium uptake.
- **Alleviate toxicity of heavy metals:** Iron, Manganese, Cadmiun, Aluminium, and Zinc by regulating plant uptake

### 6 Post Harvest Life.

Si can associate with cell wall proteins where it might exert an active production of defence compounds.



# Product range

## Silic<sup>ON</sup> Ca Flow



COMPOSITION	%w/v
Silicon (SiO <sub>2</sub> )	24,0
Calcium (Ca)	15,0
Density 1,40	
pH 7-8	

## Silic<sup>ON</sup> Ca Mg Flow



COMPOSITION	%w/v
Silicon (SiO <sub>2</sub> )	27,00
Calcium (CaO)	23,50
Magnesium (MgO)	8,25
Density 1,50	
pH 5-6	

## Silic<sup>ON</sup> Fe











COMPOSITION	%w/v
Silicon (SiO <sub>2</sub> )	17,5
Iron (Fe)	3,0

# 8

## Group of crops in which Silic<sup>ON</sup> works

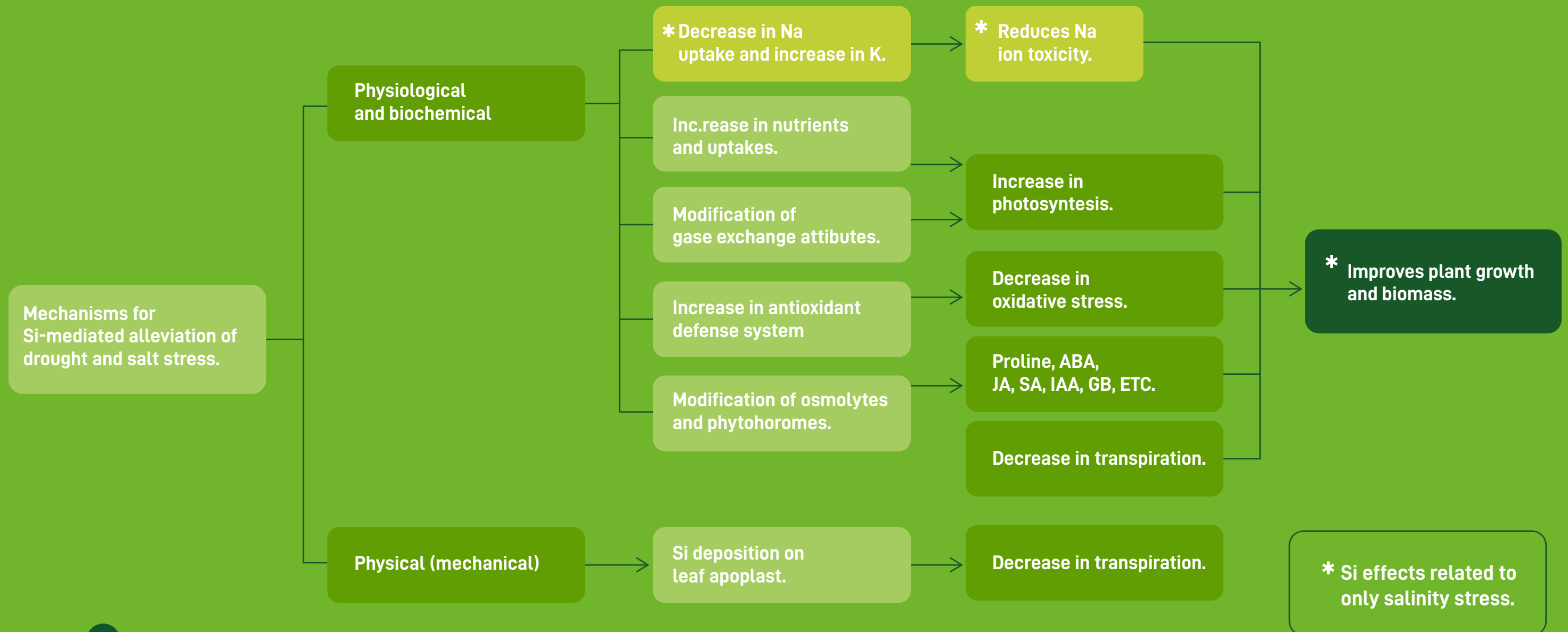


# Silic<sup>on</sup> increases the resistance of the plants against diseases

Crop	Disease	Reference	Crop	Disease	Reference
 <b>Rice</b>	Sheath Blight Neck blast Leaf blast Brown spot Leaf scald Stem rot	Rodrigues et al (2001) Datnoff et al (1991) Seebold et al (2001) Datnoff et al (1991) Seebold et al (2000) Seebold et al (2000)	 <b>Barley</b>	Powdery mildew	Jiang et al (1989)
 <b>Wheat</b>	Powdery mildew	Menzies et al (2002)	 <b>Cowpea</b>	Rust	Heath & Stumpf (1986)
 <b>Cucumber</b>	Powdery mildew	Menzies et al (1991)	 <b>Grass</b>	Leaf spot	Brecht et la (2004)
 <b>Sugarcane</b>	Sugarcane ring spot	Matichenchov & Calvert (2002)	 <b>Rose</b>	Podosphaera pannosa	Shetty et la (2004)

# Mechanisms for Si-mediated alleviation of drought and salt stress in plants

Rizwan M. et al (2015)



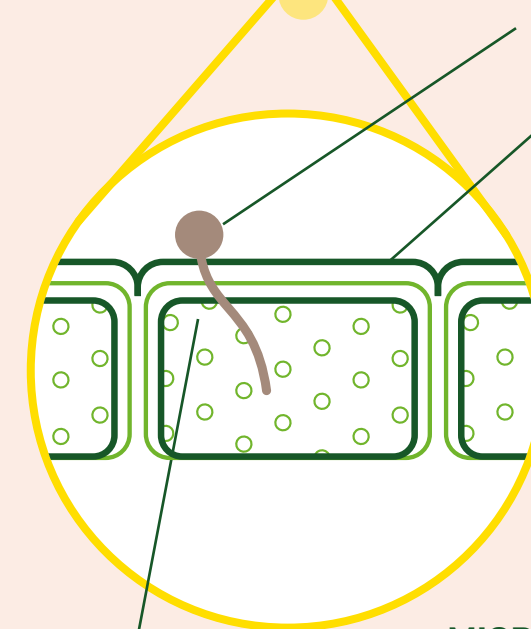
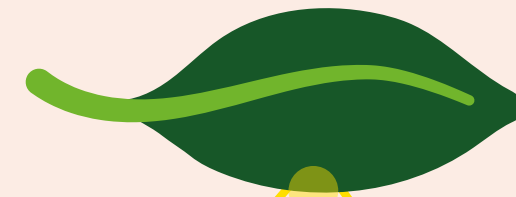


# Mode of action

## Typical action of a Silicon treatment

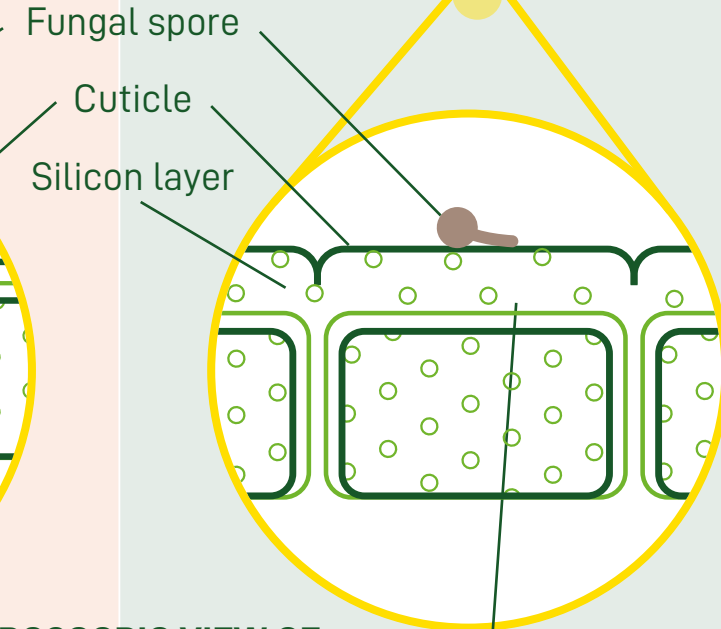
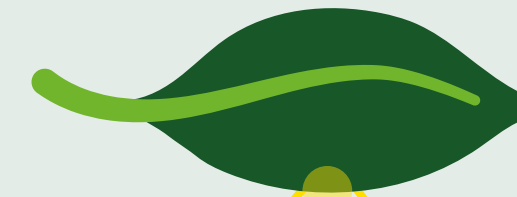


No  
Si  
Treatment



During infection, fungal hyphae penetrate leaf cuticle into the epidermal cell.

With  
Si  
Treatment



Silicon reinforced leaf cuticle increases puncture resistance decreasing pathogen entry into the cell.

**MICROSCOPIC VIEW OF PLANT EPIDERMICAL CELLS**





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**Silic** **ON**