



# Sentinel

10% Silicon w/w + Salicylic acid

A unique new combination of Silicon and Salicylic acid, created to maximise the strength and health of crops.

NEW  
IMPROVED  
FORMULA

Sentinel is a fertiliser containing a unique form of silicon combined with the plant extract salicylic acid

It boosts the strength of cells during cellular production and increases the speed at which growth can be created increasing overall growth potential

The salicylic acid present in Sentinel is found naturally in plants and plays an active role in plant growth and development, photosynthesis, transpiration, nutrient uptake and transport.

In Sentinel its use is to aid silicon movement as it enters the plant to aid the repair and recovery of cells after periods of stress.

Together the silicon and salicylic acid in Sentinel create a negative feeding response in insect pests making plant tissues unpalatable to many species.

## Benefits of Sentinel

- > **Improved Plant Cell Development** – once a plant absorbs Silicon, it is permanently deposited into cell walls within a matter of hours. The deposits form a silica-cellulose framework that is stronger and cells are created more quickly so plants develop faster and grow more quickly when they have access to greater levels of silicon.
- > **Balancing uptake of other elements** – the presence of Silicon can positively affect the uptake and absorption of macro and micro nutrients. Silicon increases Zinc, nitrogen and phosphorus uptake and when applying silicon there is a corresponding increase of nutrient flow into crops
- > **Maintain Cell Integrity and Plant Strength** – one of the more obvious effects of adding Silicon to crops is the visible response from the applications. Plants become stronger, with thicker stems and branches. This in turn increases the yielding potential of crops as they can support more leaf, flower and fruit.

- > **Tissue recovery** – as salicylic acid is 100% absorbed it can be transported throughout the whole plant. Salicylic acid supports the plant in its efforts to form wound repair tissue, accelerating further growth in these areas. This activity in combination with silicon, aids wound repair created by pruning or de-leafing activity, which supports the plant in reducing areas of open tissue that may become infection sites for possible disease ingress.
- > **Reduced susceptibility to stress** – silicon increases the strength of cell walls during cellular production acting like cell wall cement to create stronger plants with increased stress tolerance. The form of silicon in Sentinel is important as it can all be used by the plant which allows for low levels of application (0.5L/Ha) and applied foliarly has the ability to support the formation of a thicker cuticle layer. It also significantly increases leaf hair production so when used regularly can limit abiotic and biotic stresses such as UV rays, temperature extremes and predation.

## CROPS

- Brassicas
- Leafy Salads
- Potatoes
- Carrots/ Parsnips
- Legumes
- Fruiting Vegetables
- Top Fruit
- Stone Fruit
- Vines
- Citrus Fruit
- Soft Fruit
- Ornamentals



Wound recovery from application of Sentinel



## Sentinel and Pest Predation

Sentinel creates a natural negative feeding response to predation from insect pests to repel insects such as aphids, mites, thrips, drosophila, flea beetles and weevils. It does this in three ways

- 1 Silicon toughens leaf or root cuticles creating stronger plant tissues making crop leaves much harder to eat.
- 2 The increased prominence of leaf hairs and their increased length and strength, creates a dense forest of sharp needles making it more difficult for insects to move about the plant and predate on it.
- 3 The Salicylic acid in Sentinel, creates a negative feeding response in many insect pests, especially aphids, mites, thrips, flea beetle and slugs/snails. Higher levels of salicylic acid in leaves and stems stimulates the production of the secondary metabolite, salicin, which naturally repels pests by making crops far less palatable.



In independent trials by Engage Crop Solutions and its partners across the world, applications of Sentinel, applied at just 0.25L-0.5L/Ha, have significantly reduced levels of predation and damage from feeding. Insect numbers have been significantly lower in areas where Sentinel is applied making it a commercially viable alternative to pesticide applications.

## Crop Timings and Application Rates

Crops	Number of Applications	Timings	Rate (L/ha)
<b>Cereals/OSR</b>	2-4	As part of a regular programme at 7-14 day intervals or at first signs of increased pest predation	<b>0.25-0.5</b>
<b>Vegetable crops</b>	3-6	As part of a regular programme at 7-14 day intervals or at first signs of increased pest predation	<b>0.25-1.0</b>
<b>Leafy salads</b>	2-3	As part of a regular programme at 10-14 day intervals or at first signs of increased pest predation	<b>0.25-0.5</b>
<b>Tree fruit</b>	3-6	As part of a regular programme at 10-14 day intervals or at first signs of increased pest predation	<b>0.5-1.0</b>
<b>Soft fruit</b>	3-6	As part of a regular programme at 7-14 day intervals or at first signs of increased pest predation	<b>0.5-1.0</b>
<b>Vines</b>	2-4	As part of a regular programme at 7-14 day intervals or at first signs of increased pest predation	<b>0.5-1.0</b>
<b>Ornamentals</b>	3-6	As part of a regular programme at 7-14 day intervals or at first signs of increased pest predation	<b>0.5-1.0</b>
<b>Sports &amp; Amenity Turf</b>	3-6	As part of a regular programme at 10-14 day intervals or at first signs of increased pest predation	<b>0.5-1.0</b>

## Compatibility

Sentinel is ideal for both root and foliar application and unlike other formulations of silicon, it flows readily through fertigation units and systems. Sentinel is compatible with agrochemicals and other nutritional products, however when mixing with multiple products or new products for the first time, a simple jar test is recommended.

Sentinel is not a pesticide it is a nutritional product and as such is residue free and does not require a harvest interval after application.

For more detailed application rates per crop, please visit [engagecropsolutions.com](http://engagecropsolutions.com) or speak to an Engage advisor. Always read the label before use.

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