



LimaX is a unique blend of silicon nutrient and concentrated plant extracts, created for foliar application to support the growth and health of crops and render them less palatable to slugs and snails.

LimaX improves plant cell development by providing silicon to crops.

LimaX is 100% available to crops.

LimaX will support to crops in silicon deficient soils.

Supports the maintenance of cell integrity and supports plant growth.

Maintains strong leaf hair growth.

Provides a natural physical barrier to feeding from slugs and snails for up to 5 weeks.

CROPS



The importance of available silicon to crops

- › Silicon (Si) after oxygen is the most common element of the Earth's crust. It is present in almost every soil type, mainly as silicates, silicon dioxide, biogenic silica, and as monosilicic acid.
- › Only monosilicic acid is plant available however natural concentrations are low in soils due to its natural instability. Silicon levels in soils have been reducing over the last 30 years. This is estimated at 210–224 million tons annually (FAO estimate). The requirement for proper Si management to increase yield and sustain crop productivity is necessary and now thought to be essential.
- › Silicon availability in soils is constantly fluctuating. As it increases in concentration monosilicic acid polymerizes and is no longer bioavailable. Furthermore, the solubility of monosilicic acid is decreased by interactions with other soil heavy metals such as, iron, copper, aluminium and manganese. Due to all these factors, there is now a silicic acid deficiency in most soil types and if crops are grown in substrate the deficiency is greater with many crops relying on water available silicon only.
- › Silicon fertilisers (like silicates (calcium & potassium), diatomaceous earth and biogenic silica sources) are used as indirect sources of silicic acid for increasing growth and yield. By transformation from these silicon sources monosilicic acid is slowly formed and taken up by the roots, however this can take weeks to years.
- › Stabilised silicic acid, which is present in LimaX, is recognised as the only viable form of silicon for increasing plant growth and maintaining crop health.
- › Crops differ in their ability to accumulate Silicon. Monocotyledonous crops such as cereals are natural bioaccumulators of silicon and will store up to 20% in plant tissues. Dicotyledonous crops such as vegetables, leafy salads and fruit crops are not bioaccumulators of silicon and will generally hold only 1-4% in tissues before using it for growth or supporting other biofactors.

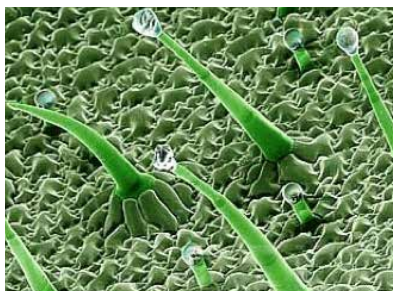
- › All crop species naturally utilise silicon in their cellular make up. It is used in the primary cell wall to create a silica cellulose framework to support cell rigidity and function. It is used in the middle lamella between cells to hold them together to support growth and it is used in proteins and pectin, which are essential for optimal cell performance. Silicon deficiency has profound effects on cellular rigidity and permeability and overall crop biological function.

The importance of silicon in snail and slug foraging

- › As soils and crops become deficient in silicon, cellular rigidity lessens, cells weaken and their biological chemistry changes. Slugs and snails use a sensory selection to feed, known as chemoreception, and are highly attuned to changes in cellular chemistry and are known to increase predation on weaker crops.
- › The stabilised silicic acid present in LimaX is ideal for redressing lower silicon levels in crops by foliar application. LimaX is well accepted by all crops and its use will quickly supply available silicon to cells to optimise cellular function both physically and biologically.
- › As crops become deficient in silicon, the production of natural leaf hairs (trichomes) diminishes due to requirement from other more essential functions within the plant. Maintaining optimal silicon levels in crop (30-50-ppm) will allow crops to maintain leaf hair growth and even increase it depending on crop type, variety and silicon accumulation potential. Slugs and snails are known to be actively dissuaded from feeding by leaf hair production and LimaX is designed to support this important process.



Feeding by slugs and snails is selective and their chemoreceptive glands are attuned to differences in the nutritional composition of plant tissues. Crops such as beetroot, celery, allium varieties, cucurbits, lambs lettuce, potatoes (variety dependent), peas, spinach, rhubarb, rocket and tomatoes are not regularly predated on, however, when



crops are young, stressed or deficient, feeding by slugs and snails will increase. Positive changes in nutritional status within crops will actively dissuade slugs and snails from feeding and the unique package of available silicon and plant extracts within LimaX does exactly that.

The unique package of plant extracts within LimaX redress many of compounds not produced under deficiency and support the important processes of photosynthesis and restorative respiration. LimaX use will support optimal nutritional levels for up to five weeks and regular applications will support healthy growth, yield and overall crop quality.

Crop Timings and Application Rates

Crop	No of applications	Timings	Rate
Cereals	2-4	Post sowing (GS9) through to leaf development (GS13-16)	0.5L/Ha
Oilseed rape	2-3	From emergence (GS7) through to 2-4 true leaf stage (GS13-15)	0.5L/Ha
Sugarbeet	2-3	From emergence through to 2-4 true leaf stage (GS9-15)	0.5L/Ha
Potatoes	1-2	From tuber formation (GS40)	0.5L/Ha
Root vegetables	2-3	During crop establishment	0.5L/Ha
Brassicas	2-3	During crop establishment	0.5L/Ha
Legumes	2-3	During early establishment and from pod development	0.5L/Ha
Leafy salads & herbs*	1-2	From planting to harvest.	0.25-0.5L/Ha
Fruiting vegetables	2-3	From planting through to early maturity	0.25-0.5L/Ha
Top fruit	2-4	From establishment of requirement or as regular annual application during early growth when conditions favour low silicon mobility	0.5L/Ha
Stone fruit	3-4	From establishment of requirement or as regular annual application during early growth when conditions favour low silicon mobility	0.5L/Ha
Berry fruit*	2-3	From planting in substrate, establishment of requirement or as regular application during early growth when conditions favour low silicon mobility	0.25-0.5L/Ha
Vine crops	2-3	From establishment of requirement or as regular annual application during early growth when conditions favour low silicon mobility	0.25-0.5L/Ha
Hardy nursery stock*	4-5	Throughout establishment and high periods of predation	0.5L/Ha
Ornamentals*	2-3	Throughout cropping phase, particularly on susceptible plant species	0.25-0.5L/Ha

*Crops regularly grown in substrate where silicon requirement is from planting to harvest.

Compatibility

LimaX is designed for foliar application however its application to younger crops will allow some silicon to be applied to open soils which is acceptable and unlike other formulations of silicon, will be available for crop use.

LimaX is compatible within tanks mixes with other nutritional products and agrochemical compounds, however it is advised when mixing with multiple products or new products for the first time, a simple jar test is recommended.

For more detailed application rates per crop, please visit engagecropsolutions.com or speak to an Engage advisor.

Always read the label before use.

Unit 5 | Town Lane Industrial Estate | Town Lane
Charnock Richard | Chorley | PR7 5XG

t: + 44 (0) 1257 226590 e: info@engagecropsolutions.com
engagecropsolutions.com