

ENGAGE
The Power of Nutrition

**Soil and Substrate
Conditioning** for
optimal growth and
quality of Fruit



Cypher

Initiate

Sion

Aqualatus



JF MCKENNA
Grow Smarter

For many years Engage Crop Solutions has been at the forefront of soil and substrate management as across the world and we have seen that over time, biodiversity in soils is steadily dropping at an alarming rate. Reduced biodiversity drop, we know, is due to lower levels of organic matter, humates and organic acids. This leads to lower available silicates and organic compounds for crops and soil microflora/fauna to interact with, to create a dynamic soil ecosystem.

- ✓ Reduced soil biodiversity is resulting in less productive soils and substrates which yield lower crop potential, poorer quality and less nutritious produce which in turn can result in health consequences for humans and animals. Add to this increased input costs from required supplementary nutrition and higher pesticide requirement for stressed crops and we see a system in need of help.
- ✓ With a steadily increasing world population and greater demand for cereals, vegetable and fruits as diets change across the world, Engage Crop Solutions are focused on a soil and substrate development programme designed to replenish soils by redressing what has been lost over time to support increase crop strength, quality, yielding more nutritious produce.

This brochure highlights the products within the programme for fruit and their benefits within the system along with an application guide for best practice.



UNLOCK NUTRIENT POTENTIAL FOR INCREASED CROP GROWTH AND YIELD

Cypher is a modified organic acid blend derived from plant active portions of lignin and leonardite ore. It is designed to condition soils and substrates which have lost momentum become compacted or overloaded in bonded salts.

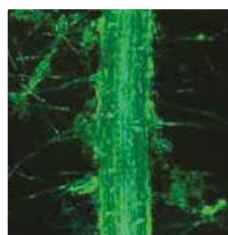
Cypher enhances nutrient uptake by combining nutrients with humic substances to aid well-balanced nutrition. Cypher improves the structure of soil by promoting fungi to create a crumb structure for better water and oxygen intake and improved root penetration. This increases the buffering power of the soil, and optimises N. P. K absorption by plants.

Cypher can neutralise both acid and alkaline soils and substrates by regulating the PH value and will reduce nitrate leaching into groundwater. This effect dramatically extends the performance of urea in the soil by up to 60-80 days. The buffering effects of Cypher help to reduce the build-up of excessive elements (particularly sodium), toxic chemicals and heavy metals. All, these effects will long term enhance the resilience of crops, to stress factors such as cold, drought, pest, disease and toppling promoting healthier, stronger plants.

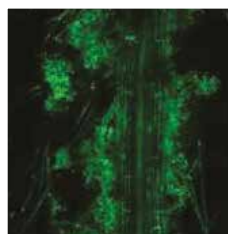
THE NATURAL CHOICE FOR IMPROVING GROWTH AND QUALITY

Initiate is a multi-function liquid lignin complex, providing a new source of organic biostimulant to aid the establishment of plants and crops in both soils and substrate by generating a healthy and energetic rootzone.

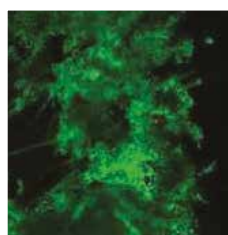
In the rhizosphere, or root zone of a plant, complex interactions are constantly occurring between plant roots and soil microbes. The microbes live in the soil and gain needed energy sources from plants while aiding in nutrient transfer to plants and creating an environment more conducive to good root growth. The addition of Initiate as part of a soil conditioning programme increases micro-organism population of six different functional groups which aid root uptake and soil substrate biodiversity. These groups include the beneficial bacteria (*Bacillus Subtilis*). The picture (left) illustrates the level of bacteria on roots under the support of Initiate.



CONTROL



100 UG ML-1 INITIATE



200 UG ML-1 INITIATE

Initiate is a blend of modified lignin which binds plant growth promoting rhizobacteria to roots. This binding promotes the auxin response for enhanced root growth and activity. Initiate works as a complexing agent for root applied nutrients and maintains them in forms that are available to the plant. Initiate is also a source of metabolisable energy for the soil microbes present in the rhizosphere and provides a natural organic source of available calcium, a necessary requirement for healthy crops growth. Regular use of Initiate improves fertiliser efficiency and decreases rootzone salinity.



CONDITIONING APPLICATION

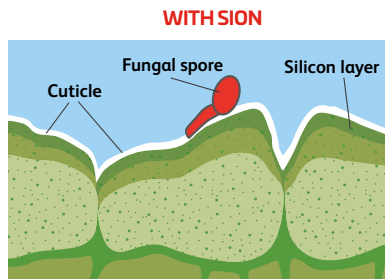
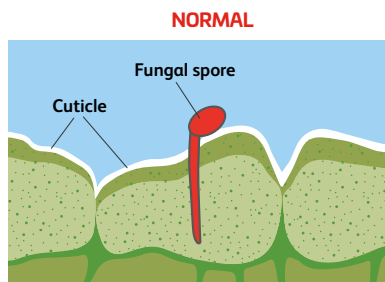
	Cypher	Initate	Sion	Aqualatus
Tree fruits	3-8 L x 3 applications across the season depending upon requirements of soil	Use 5-10 L/Ha per month from early season until harvest	Apply 1.0 L/Ha every month from commencement of irrigation until end of season	Apply 1.2 L/Ha every month from commencement of irrigation until end of season
Berry Fruits (Soil)	3-8 L x 3 applications across the season depending upon requirements of soil irrigated	Apply 10L/Ha per week from planting for the first 4 weeks of production and then repeat every 4 weeks through to end of harvest.	Apply 1.0 L/Ha every month from commencement of irrigation until end of harvest	Apply 1.2 L/Ha every month from commencement of irrigation until end of season
Berry Fruits (Substrate)	0.5 – 1.0 L/Ha via irrigations every 2-3 weeks depending upon salt level	Apply 5-10 L per week for the first 4 weeks and then 5 L every month to harvest.	Apply 0.5-1.0 L/Ha every month from commencement of irrigation until end of harvest	Apply 1.2 L/Ha of irrigation across L/Ha every month from commencement of irrigation until end of season
Vine Crops	0.5 L/ha Apply 3 treatments, in 400 L water per Ha, pre-flowering - post flowering - ripening	Use 5-10 L/Ha per month from early season until harvest	Apply 1.0 L/Ha every month from commencement of irrigation until end of harvest	Apply 1.5 L/Ha from start of irrigation via injection into irrigation and repeat on a 4 weekly basis until end of harvest



FIGHTING BIOTIC STRESSES TO PROTECT AND STRENGTHEN YOUR CROPS

Sion is a unique silicon nutrient for foliar and irrigated application to increase the strength, growth and health of crops. This fertiliser contains a 100% available form of silicon which provides a proven and balanced source of silicon for use in all fruit crops.

Sion boosts the strength of cells and increases the speed at which growth can be created thereby increasing overall growth potential of the plant. Sion offers improved plant cell development as well as maintaining cell integrity and plant strength. It can also increase nutrient activity, alleviate abiotic and biotic stresses, and increase the resistance of plants to pathogenic pressure.

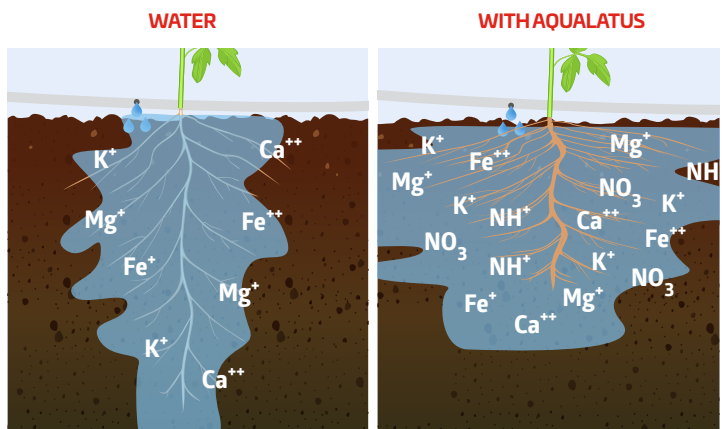


Silicon, in leaves, acts as armour for the plant. To enter into a plant, fungal spores or insects have to puncture and penetrate the plant surface or cuticle first. When the leaf cuticle is silicon-reinforced, the physical tissue resistance to the puncture dramatically increases and the progress of pest or disease entry drops. The stronger cells wear off the mandibles of insect larva when they chew plant tissue, thereby limiting susceptibility to damage by insects.

A REVOLUTION IN WATER AND NUTRIENT MANAGEMENT

Aqualatus is a unique rootzone surfactant with outstanding qualities to benefit crop nutrition. Its formula, unique to Engage Crop Solutions, makes it essential for the maximum distribution of root applied nutrients to aid root functions and nutrient uptake.

Most importantly, regular use of Aqualatus will slow the natural gravitational movement of water and so will reduce the overall water requirement for soil or container grown crops; this has been proven to be 30-40% without any loss of crop development, and quality. Treating crops with Aqualatus will improve water and nutrient distribution and utilisation by expanding the root zone wetted area where larger and healthier root systems can develop.



Aqualatus optimises uniformity of moisture across the rootzone which is vitally important for optimising water to air ratio. This aids aggregation of soil and substrate particles and reduces the possibility of water logging and anerobic conditions.

Contact us and see why we are
leading the way in future crop
nutrition and enhancement.



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