



# Cypher

## 100% Organic Acids

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 a patented product designed to condition soils and substrates which have lost momentum, become compacted or overloaded in bonded salts.

Cypher can be applied alone or can be formulated with basic and acidic fertilisers.

Cypher can be irrigated or sprayed over any growing substrate to aid nutrient availability and stimulate increased rootzone activity.

Cypher meets all the requirements of sustainable agriculture and offers farmers and growers a natural way to improve rootzone health and productivity.

### CROPS

- Brassicas
- Potatoes
- Legumes
- Fruit
- Vines
- Soft Fruit
- Leafy Salads
- Root Crops
- Fruiting Vegetables
- Stone Fruit
- Citrus Fruit
- Ornamentals

## The Importance of Rootzone Structure

Good soil and substrate structure is critical to healthy plant growth, and is created when primary soil/substrate particles are held together by various soil-stabilising agents to form larger aggregates.

These aggregates define the small and large pore spaces that are essential for good infiltration and drainage, as well as the proper balance of water and air. Over time, heavy rain or continual irrigation water, traffic, cultivation and long term inorganic mulches can all weaken or destroy aggregation.

This results in reduced infiltration and aeration and increased salt accumulation that can negatively impact crop growth and health.

The key to maintaining good structure is to maintain good aggregate stability, strong biomass and active soil microflora.

Cypher used in a regular program will help achieve all these soil factors. Greater soil aggregation will increase pore spaces for enhanced water infiltration and gas exchange. By improving salt and nutrient movement through the soil, you can improve nutrient efficiency and overall crop productivity.

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## An Effective Soil Conditioner for Improved Crop Growth

Calcium is a basic building block of soil structure. If rootzones lack the proper calcium content, or have excess levels of sodium, particle aggregation can weaken. Soil/substrate particles become dispersed and porosity is reduced.

Cypher increases the solubility of calcium and its bonded anions so that it becomes incorporated into the soil or substrate more easily, increasing aggregate size and improving overall rootzone structure. Increases in rootzone porosity leads to improved water infiltration rates for a healthier, more functional rootzone profile. By enhancing solubility, more calcium is active in the rootzone solution to bind small particles together and re-aggregate the soil.

Furthermore Cypher functions as a complexing agent for other soil nutrients and maintains them in forms that are more readily available to the plant.

Cypher is also a source of metabolisable energy for the soil microbes present in the root zone. Cypher will provide a source of added organic carbon, sulphur and potassium, necessary requirements for healthy crops.

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## Low solution viscosity

Cypher is produced using a proprietary extraction and modification process. This process yields a high humic and organic acid content product with a low solution viscosity.

Cypher can be blended and pumped easily, and it will not gel on storage like conventional humate products.

Crop	No of Apps	Application & Timing
<b>Fruiting vegetables</b>	0.5 – 1.0L per/ha for regular application. 2.0 – 3.0L per/ha for a single application.	Apply by drip method, the first application after 3/5 leaves. Follow with weekly applications of the same rate until the completion of harvest. Alternatively use a single application when analysis results show bonded salts are climbing in the rootzone to bring them in line with set points.
<b>Berry fruits</b>	0.5 – 1.0L per/ha for regular application. 2.0 – 3.0L per/ha for a single application.	Apply by drip method, the first application after 3/5 leaves. Follow with weekly applications of the same rate until the completion of harvest. Alternatively use a single application when conductivity analysis results show bonded salts are climbing in the rootzone to bring them in line with set points.
<b>Leafy salad &amp; Herb crops</b>	1.0 – 2.0L per/ha	Apply, dividing the dose into 2-3 applications during the crop cycle by means of irrigation.
<b>Cereals</b>	0.5 – 1.0L per/ha	Apply 2 treatments through ground spray or irrigation (possibly combined with herbicides). <ul style="list-style-type: none"> <li>At 3-5 leaf stage.</li> <li>4-6 weeks later.</li> </ul>
<b>Vine crops</b>	0.5L per/ha	Apply 3 treatments, in 400 litres water per ha. <ul style="list-style-type: none"> <li>pre-flowering</li> <li>post flowering</li> <li>ripening.</li> </ul>
<b>Top fruit &amp; Stone fruit</b>	0.75 – 1.5L per/ha	Apply at least 3 times depending on early or late varieties in 1000 litres water per hectare. <ul style="list-style-type: none"> <li>January to late February. Can be used with fertilisers during irrigation soil spray.</li> <li>May to June.</li> <li>October to November.</li> </ul>
<b>Ornamentals</b>	0.75 – 1.5L per/ha	Apply by drip method, the 1st application after 3-5 true leaves. Follow with weekly applications of the same rate until the finish of the vegetative stage. Use normal spray volumes.
<b>Sportsturf</b>	75ml per 500 m <sup>2</sup>	Apply every 4 weeks with normal fertility programme.

## Single Applications

<b>Soil applied:</b>	5.0–10.0 litres per hectare of Cypher per application based upon soil analysis requirements. Pre-mix in 10-20 litres water before adding to spray tank. For best results contact your Engage advisor.
<b>Seed and Potato seed-piece:</b>	Apply 1.25 to 2.5 litres per 400 litres as a seed treatment spray or dip.
<b>Transplant water applications:</b>	Apply 500 ml per 200 litres of transplant solution.
<b>Container drench:</b>	Apply 0.2ml per litre of drench to stimulate substrates which have lost momentum, become compacted or overloaded in bonded salts.

Cypher is a rootzone ameliorating agent and best results will be achieved by regular application.

Always read the label and follow instructions when mixing Cypher with other fertilisers, herbicides or pesticides.

Cypher is compatible with most products, however 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](https://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](mailto:info@engagecropsolutions.com)

[engagecropsolutions.com](https://engagecropsolutions.com)