

# Information

## Chase SM6 Seaweed Extract

### **Active Ingredients in Seaweed Extracts**

Our understanding of seaweed extracts and how they work continue to evolve. One of their main properties is a range of substances which not only stimulate plant growth but also elicit the production of compounds within the treated plants enabling them to withstand attacks from various pests and diseases. Some of these compounds may also protect the plant against salt stress, dry conditions and marginal frost.

1. **Plant Growth Hormones.** Compounds such as cytokinins, auxins and gibberellins can be found in seaweeds and it was initially thought they were responsible for the beneficial responses in plants treated with seaweed extracts. It is now seriously questioned whether these compounds are present in sufficient quantity to produce such effects. Many years ago extracts were found to have high levels of "cytokinin like" activity but subsequent research has shown this was mainly due to betaines which trigger the activity within treated plants.

2. **Betaines.** These modified amino acids are found in all extracts produced from the brown seaweeds, Ascophyllum, Fucus and Laminaria. They may also be present in other seaweed species used for extraction. Research has shown that betaines present in the extracts can stimulate the plant's resistance to attacks by nematodes and fungi. There is also evidence that plants treated with betaines are more resistant to marginal frost damage.

3. **Polysaccharides and Oligosaccharides.** Seaweed extracts contain a wide range of carbohydrates and sugars which can stimulate the defence mechanisms in treated plants. A number of these have been isolated within an Ascophyllum extract and were found to be capable of eliciting D-glycanase and  $\alpha$ -amylase (enzyme) activity. Since then research with another Ascophyllum extract induced Gibberellic Acid amylase activity in seeds even though analysis failed to detect any Gibberellic Acid in the extract.

4. **Lipophilic Substances.** Recent research has shown that application of the Lipophilic fraction of Ascophyllum, mainly fatty acids and sterols, induced significant cold resistance in treated plants.

In conclusion, although there is more to be learnt, research has shown that the most effective compounds in seaweed extracts and therefore the most active within the plant are likely to come from 2, 3 and 4 above rather than plant growth hormones.

**Chase SM6, an aqueous seaweed Extract, manufactured from Ascophyllum, Fucus and Laminaria.**

For more information about **SM6**, see our web site [www.ChaseOrganics.co.uk](http://www.ChaseOrganics.co.uk)

