

Application Rates

Horticulture

As a general recommendation Eco-Seaweed extract should be applied at the rate of 10 litres per hectare on a monthly basis.

A rate of 20:1 is recommended for application by knapsack for nurseries, glass houses and home gardeners.

NB: For more specific application programs for all crops please do not hesitate to contact us for program details.

Agriculture

Eco-Seaweed extract should be applied at the rate of 10 litres per hectare every 3 to 4 months (optimum application - a minimum of twice yearly).

Price List

Eco-Seaweed extract is available in 1000 litre pods, 200 drums and 20 litre containers.

1,000 litre pod	\$4.50/litre
500 litre drums	\$4.75/litre
200 litre drums	\$5.00/litre
20 litre containers	\$6.00/litre

NB: These prices are GST exclusive and do not include freight.

Benefits of using Eco-Humic/Fulvic Acid and our Biological Inoculant

(These products are manufactured using Eco-Logic Vermicast.)

Eco-Humic/Fulvic Acid and our biological inoculant is incorporated into the seaweed brew to inoculate the seaweed with beneficial biology which in turn breaks down the kelp and releases plant growth hormones and trace elements.

The benefits of Vermicast are as follows; Analysis of earthworm castings has revealed that they are richer in plant nutrients than the soil, approximately three times more calcium and several times more nitrogen, phosphorus and potassium.

Worm castings contain a high percentage of humus. Humic acid which is present in humus, not only provides a binding medium for plant nutrients but also releases them to plants upon demand. Humus is believed to aid in the prevention of harmful plant pathogens, fungi, nematodes and bacteria.

The key factor is the microbial activity. Generally this is ten to twenty times higher in Vermicast than top soil.

Worm castings (Vermicast) contains thousands of bacteria, enzymes and remnants of plant materials and animal manures which have been digested by worms. Humus, which is in Vermicast in large amounts is a complicated material formed during the breakdown of organic matter. One of its components, humic acid, provides many plant nutrients such as calcium, iron, potassium, sulphur and phosphorus. These nutrients are stored in the humic acid molecule and are readily available to the plants when required.

Vermicast also contains slow release nutrients which are immediately available for plants to utilize. They dissolve slowly which helps in the prevention of nutrient leaching. The product can also help insulate plant roots from extreme temperatures, reduce erosion and is odourless.

Eco-Seaweed Extract



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Introduction

Eco-Seaweed extract is made utilizing *Ascophyllum nodosum* kelp, pure rainwater, Bio-Dynamic compost preparations, "Garudas" Etherics 1000, Eco-Humic/fulvic acid and Eco-Logic Biological inoculant.

The Process

The process involves brewing in a stainless vat using a vortex system which stirs, agitates, adds oxygen and draws in atmospheric nitrogen. This is a biodynamic principle used for energizing biological products.

Benefits of Kelp

Research has shown that the best species of kelp for agricultural and horticultural use is *Ascophyllum nodosum* which grows in the cold nutrient rich waters off the Atlantic coast of Canada.

Kelp is a rich non-polluting source of organic minerals. It contains over **60 minerals and elements, 21 amino acids, simple and complex carbohydrates and essential plant growth hormones.**

Under certain conditions it enhances the germination of seeds, increases the uptake of nutrients, imparts a degree of frost resistance and inhibits the attach by pathogenic fungi, predatory insects and soil nematodes. It also improves soil structure and increases soil water holding capacity.

Benefits of the Bio-Dynamic Compost Preparations and Etherics 1000

These preparations stimulate and feed soil micro-organisms and beneficial bacteria. This leads to increase plant and soil health and an increased resistant to pest and fungal attack.

Plant Growth Hormones

The immediate benefit obtained from kelp can be attributed to the release of auxins, cytokinins and gibberellins. These plant growth hormones required in small quantities are essential for cell division and cell elongation, basic functions of plant growth.

Enhanced seed germination, early emergence, stimulated root and shoot growth, increased fruit set and decreased fruit drop are some of the benefits derived from increased levels of plant hormones.

Fertiliser supplement

When used as a fertiliser supplement kelp is an excellent source of **chelated minerals** necessary for proper plant growth. Kelp acts as a slow release fertiliser, slowly breaking down and releasing its nutrients. Mannitol and alginic acid, major components of kelp act as chelating agents helping in the formation of humus.

The potential benefit of kelp fertiliser supplement increases each year as it contributes to the soil organic matter.

Soil Conditioner

As seaweed does not require the rigid plant structure characteristics of land plants, their organic composition is quite different. Instead of cellulose as the main organic constituent, seaweeds are mainly composed of alginic acid and simple sugars such as mannitol. These compounds break down much more readily than cellulose. **Kelp is an excellent source of organic matter due to its rapid rate of decomposition.**

Soil organic matter and associated soil algae, bacteria and fungi play an important role in the soil fertility and plant nutrient uptake.

The application of kelp acts as a soil conditioner by stimulating **microbial activity**. The carbohydrates and acids released during decomposition of the kelp results in the aggregation of soil particles and the chelating of nutrients which might otherwise be leached from the soil. This **increased soil fertility** benefits soil organisms which in turn act as soil conditioners and a renewable source of nitrogen.

Current Analysis

Analysed by Living Systems Laboratories Ltd, Te Puke.

Element	PPM	%
Carbon/Nitrogen		
pH	5.4	5.4
Calcium	149019	14.9
Magnesium	8797	0.9
Sodium	4707	0.47
Potassium	65246	6.52
Sulphur	668	0.07
Phosphorus	161	0.02
Boron	10.1	0.001
Iron	2407	0.24
Manganese	132.2	0.013
Copper	21.5	0.002
Zinc	278.9	0.027
Cobalt	36.8	0.003
Nitrates	39200	3.92