National Research Development Corporation

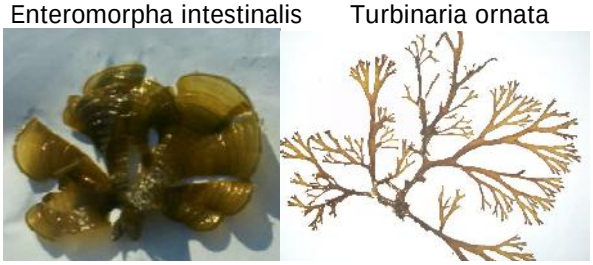
Technology offer

Seaweed Extract Fertilizer

The Know how offers a simple and novel process of production of Seaweed extract Fertilizer in liquid and powder form useful as an organic nutrition source for almost all type of plants.

Plants need sunlight, water and nutrients for their growth, development and survival. Sixteen nutrients are essential for the growth of almost all the plants. These nutrients can be taken from air, water or soil. Plants obtain Carbon from carbon dioxide of the air, Oxygen and Hydrogen from water, whereas the remaining elements are taken from the soil. The soil in which they are planted usually does not provide all the nutrients essentially required for their growth. If there is an ample supply of nutrients in the soil, crops are more likely to grow well and produce high yields. If any of the nutrients is unavailable from the soil, plant growth is limited and crop yields are reduced.

Enteromorpha intestinalis Turbinaria ornata



Padina gymnospora Dictyota dichotoma

Some Common Seaweeds of India

Fertilizers supply the mineral nutrients to the crops in readily available forms that the soil lacks and plants need to grow. Fertilizer is an organic or inorganic material of natural or synthetic origin that is added to the soil to supply one or more plant nutrients essential for the growth of plants. A recent assessment found that about 40 to 60% of crop yields are attributable to fertilizer use. Therefore, for healthy growth of plants fertilizers are required.

Application of synthetic and chemical fertilizers adversely affects the health of humans, livestock and environment. Recent researches proved that extract of seaweeds not only enhance plant growth and yield but also improves soil condition. Seaweed fertilizer represents an alternative to synthetic and chemical fertilizers. Seaweed extract fertilizer is obtained from Seaweeds which are aquatic plants and available in abundance near seashore and contain mineral-rich nutrients.

Natural Habitat of Seaweeds

Salient Features

Fertilizers derived from seaweeds are found to be superior to chemical fertilizers due to high level of organic matter, micro and macro elements, vitamins and fatty acids. They can be used with or without chemical fertilizers.

Seaweed extracts are allowed as fertilizer for organic farming production practices whereas synthetic chemical fertilizers are prohibited for Organic Food Production. Now-a-days seaweed fertilizers are gaining popularity for achieving higher crop production and soil quality improvement. Seaweed extracts can be manufactured in liquid and powder form and used as fertilizers for all type of crops, grasses and trees.

They contain many growth-promoting chemicals obtained from natural source, minerals, trace elements, vitamins, and micronutrients.

Application

The fertilizer contains mineral nutrients and trace elements, which enhance the plant growth. It can be applied as foliar spray or directly applied to the soil as an organic nutrition source.

Application of Seaweed Extract Fertilizer Through Spray

Crop Response

The experiments carried out on various plants using seaweed extract as fertilizer showed higher rate of growth and higher yield in cereal crops, vegetables, fruits, orchards and horticultural plants. The results showed increase in seed germination, shoot length, root length, number of lateral roots, number of leaves, number of vegetables, length of vegetables, weight of vegetables and photosynthetic pigment concentration.

The application of seaweed fertilizer in different crops reduces the cost of production. It has been observed that the carbohydrates and other organic matter present in seaweed extracts alter the nature of soil and improve its moisture holding capacity.

Advantages

- Seaweed Extract Fertilizer is a natural bioproduct
- Farmers can use SEF for organic food production and soil amendment
- Provides better plant nutritional quality
- Provides better agricultural products and faster growth of plants
- Non-toxic and completely biodegradable
- Can be used for all crops at any stage of growth
- Increases plant productivity
- Increases uptake of soil nutrients
- Increases resistance in plants against pests, drought and stress
- Improves seed germination
- Stimulates beneficial microorganisms of the root systems and plant growth
- Improves soil fertility, texture, organic matter content
- Improves crumb structure and moisture retaining capacity of soil
- Easy to produce and apply

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