



Studies on the use of locally available (Coxs Bazar and Saint Martin) alternative renewable seaweeds wastes as compost organic fertilizer resources.

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ABSTRACT

Marine red algae from the Bangladesh Bay of Bengal *Hypnea Sp* are often regarded as an underutilized bio-resource seaweed have been used as organic materials due to the presence of a number of plant growth stimulating compounds. The effect of various seaweed species on plant growth and development with an emphasis on the use of this renewable bio-resource in sustainable agricultural northern fertilizers raw materials system. A plant needs organic fertilizer for it to grow in a balanced way. The combined use of organic and inorganic fertilizers can improve crop production and maintain soil health. Many important soil properties depend on to some degree on the quality of organic matter. Organically made fertilizers play an important role in increasing the crop yield and the quality of crops promises improvements considering climate adaptation. Research on marine products has enormous unexploited potential and significant advantages. Although Bangladesh possesses a part of the Bay of Bengal, the vast ground of our marine resources is yet to be explored and the application of biotechnology to marine biodiversity remains poorly developed. This part of the study is directed towards the analysis of the future trend and performances of Composting Seaweeds wastes. Demo plot- one Zoom production betel-leaf 2880 per day, Control plot-one zoom production betel-leaf 2780 per day. Difference 100 leaf meaning increased plucking 100 leaf production per day used by seaweeds wastes mixed compost organic fertilizer.

Keywords: Seaweed, Plant Growth, Organic Material, northern fertilizer, Sustainable.

INTRODUCTION

Providing a safe alternative to chemical fertilizers. Although chemical crop fertilizers boost crop yield, they are also responsible for environmental pollution all around the world. Northern Organic and Balanced fertilizers provides a safe alternative to chemical fertilizers while having more agricultural output and reducing chemical fertilizer usage. Technology based Circular Economy Model Supplies plant food to both crop and soil in an integrated way. Increase production and reduced cost. Fertilizer can use easily and directly by the farmers, no hassle of calculating, mixing and handling. Fertilizer also contains essential micro nutrients. Enhance crop quality and storage capacity. Safe guard the environment.

Seaweeds or marine macroalgae are rich in diverse compounds like lipids, proteins, carbohydrates, phytohormones, amino acids, osmoprotectants, antimicrobial compounds and minerals. Their potential for agricultural applications is used since antiquity, but recent demands of organic farming and organic food stimulated much the application of organic treatments like seaweed extracts in agriculture. The benefits of seaweeds application in agricultural field are numerous and diverse such as stimulation of seed germination, enhancement of health and growth of plants namely shoot and root elongation, improved water and nutrient uptake, frost and saline resistance, biocontrol and resistance toward phytopathogenic organisms, remediation of pollutants of contaminated soil and fertilization. In this review, scientific progress in this field was collected and critically assessed to lay grounds for further investigations and applications.

Materials and Methods

A field study was conducted at two sites at Khasia farmers of Sreemangal khasia betel leaf cultivation community area Bangladesh. Seaweeds wastes mixed compost organic fertilizer dose 50g per support tree only. The treatments included different rates of organically made fertilizers at two sites. Soil pH, organic carbon, total N, available P, K and S were measured just before the start of the experiment

Results and Conclusion

Demo plot- one Zoom production betel-leaf 2880 per day, Control plot-one zoom production betel-leaf 2780 per day. Difference 100 leaf meaning increased plucking 100 leaf production per day used by seaweeds wastes mixed compost organic fertilizer. Farm activity and harvesting of betel-leaf is the task of male, on the other hand female members operate processing and marketing of betel-leaf is also the indication of their own traditional management practices. Such management practices are directly related to the livelihood of the Khasia ethnic community. This type of forest farming differs from slash and burn system of hill cultivation and the Khasia betel-leaf cultivation is one of the methods of tree diversity conservation. Khasia betel-leaf cultivation is an income generating, land based, long term agroforestry farming system. This production system had developed a traditional management system of its own.

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Increase the knowledge about the field by listening to other presenters

SEAWEED: AN UNTAPPED GEM

Global seaweed industry valued at **\$13.33bn** in 2019. Expected to become **\$85bn** by 2026

- Seaweed is being cultivated in 10-hectare area in Bangladesh. Approximately **500-600 tonnes** grown per year.
- Seaweeds are sold around **Tk50** raw and **Tk300** per kilogram dried
- Seaweed has vast use in pharmaceuticals, cosmetics, chemical and anti-bacterial products industries.

The annual seaweed utilisation in our food, feed and manure, cosmetics and pharmaceuticals industry are 47,775kg, 11,700kg, 13,650kg and 24,375 kg respectively.



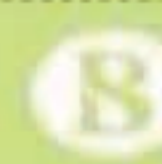
Seaweed cultivation needs no insecticides, fertiliser or irrigation



Continuous collection can damage the seaweed seed bed in the ocean.



Cultivation window is between October/November to March/April.



Seaweeds Composition

Organic Matter-->40%

Moisture--<=1.5%

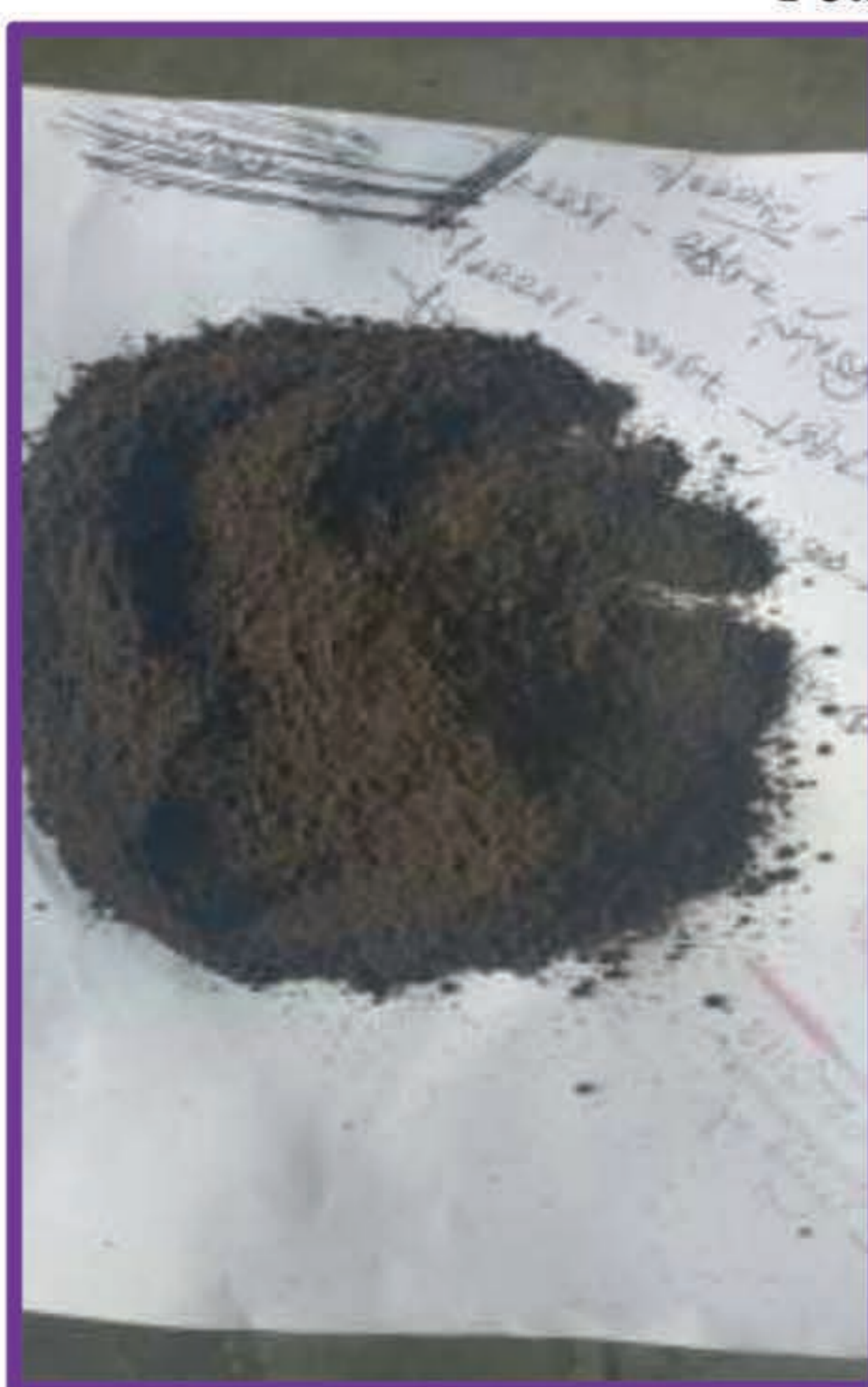
Total Nitrogen(N)1.0-3.0%

Phosphorus (P₂O₅)1.0-5.0%

Potassium (K₂O) -->16.0

Hypnea Sp

Organic Fertilizer



Hypnea Sp



Hypnea Sp

