Introduction
1. INTRODUCTION

Seaweeds are macroscopic algae, which form an important component of the marine living resource. They are available largely in shallow coastal waters wherever there is a substratum on which they can grow and flourish. In India, all the four categories of seaweeds viz, green (Chlorophyceae), brown (Phyaeophyceae), red (Rhodophyceae) and blue green algae (Cyanophyceae) are common all along the south-eastern and north-western parts of the coast. There are more than 800 different species of seaweeds growing on the Indian coast. Seaweeds are harvested by man for centuries, particularly in Japan and China, where they form a part of the staple diet. The uses of seaweeds as food, fodder and manure are well known in many countries.

Seaweeds are an important source of industrially important thickening agents and gels such as, agar, carrageenan and alginates and there has been rapid growth of these products in recent years. They are also a source of fine chemicals such as natural pigments, mannitol, iodine and cosmetic and therapeutically active products.

Fresh, dried and processed seaweeds are utilized as human food and the food value depends upon the minerals, trace elements, proteins and vitamins present in them. They are eaten as salads, curries, soup or vegetable. Species of Ulva, Caulerpa, Codium, Hydroclathrus, Sargassum, Porphyra, Gracilaria, Euchema, Halymenia, Acanthophora and Laurencia are used as food in Japan, Indonesia, China, Philippines and other countries of Indo-Pacific region (Subba Rao, 1965; Levring et al., 1969; Michanek, 1975; Chapman and Chapman, 1980).
Seaweeds are cheap sources of minerals and trace elements. Hence meals prepared from seaweeds can be given as supplementary to the daily rations of cattle, poultry and other farm animals. Seaweed meals can be obtained by grinding the cleaned and washed seaweeds of Ulva, Enteromorpha, Sargassum, Padina, Dictyota, Gracilaria and Hypnea (Thivy, 1960; Dave et al., 1979).

Use of seaweeds as manure is a common practice in coastal areas throughout the world. In India, it is used for coconut plantations especially in coastal Tamilnadu and Kerala. Sreenivasa Rao et al. (1979) reported on the use of brown seaweed Sargassum in the production of fuel gas for domestic use.

Seaweeds were considered to be of medicinal value in the oriental countries as early as 3000 BC. The Chinese and the Japanese used them in the treatment of goiter and other glandular diseases. The Romans used seaweeds to heal wounds, burns, scurvy and rashes and the British used Porphyra to prevent scurvy during long voyages.

In marine environment, decomposition of macroalgal litter continuously replenishes the nutrients and organic detritus and forms a base for food-webs culminating in important food fish and invertebrates. Seaweed detritus which is low in fibre content and high in nitrogen content (due to microbial decomposition) could be a good nutrient rich food (Mann, 1988).

In India, several works have already been carried out on the chemical and biochemical constituents of seaweeds. However the information on the nutritive value of decomposed seaweeds is scanty. The present study was therefore undertaken to assess the nutritive value of decomposed seaweeds of Tuticorin coast, Gulf of Mannar.
region. These studies will have much scientific value and will provide valuable information on the utilization of decomposed seaweeds in the preparation of fish feeds. The main objectives of the present study are:

1. To assess the nutritive value in terms of protein, amino acid, carbohydrate, lipid, crude fibre, nitrogen, organic carbon, minerals, ash content, dry weight and calorific value of selected species of seaweeds.

2. To decompose the selected species of seaweeds in field (Coastal water) and in laboratory (fresh water) aerobically.

3. To assess the aforesaid nutritive parameters, calorific value, dry matter and C/N ratio of the selected species of seaweeds during the different degrees of decomposition under aerobic conditions.

4. To assess the quality of the decomposed seaweed biomass in terms of fatty acid profile.

5. Bacteriological analysis of one of the selected decomposed seaweed.

6. To utilize the decomposed seaweeds as a component of fish feed and conduct feed trials with cultivable common carp *Cyprinus carpio* and *Catla catla* fishes.