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MICROALGAE CULTURE A BOON FOR AQUACULTURE

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Introduction

Algae are a broad and diverse group of simple, typically autotrophic organisms, ranging from unicellular to multi cellular forms. These are classified as eukaryotic organisms. Based on size of the algae these are divided into Microalgae and Macroalgae / Seaweed

Microphytes or microalgae are a diverse group of microscopic algae and are ubiquitously found in the aquatic ecosystems. These are unicellular species may exist individually, or in groups. Their sizes can range from a few micrometers (μm) to a few hundreds of micrometer depending on the species. Unlike higher plants, microalgae are devoid of roots, stems, and leaves and are capable of performing photosynthesis. It is estimated that about 200,000-800,000 species of microalgae are found in the world which depicts of the fact that the biodiversity of microalgae is vast importance of Microalgae. i. Green water that consists of microalgae improves the survival and growth rate of larvae (e.g. Naas et al. 1992) ii. Antibacterial, antifungal and antiviral activity (Naoman et al.,2004) iii. A

source of PUFA (Benemann et al. 1987) iv. Commercial Products can be obtained from Microalgae such as beta-carotene and astaxanthin v. It Reduces N & P load in the aquaculture system vi. It is used for Stabilizing the water quality in static rearing systems (i.e., removal of metabolic by-products vi. Are favoured food for larvae of fishes and shellfishes vii. Polysaccharides present in the algal cell walls has the potential of stimulating the non-specific immune system in the larvae. viii. Microalgae like Spirulina is also considered as the food of future generation ix. Recently used in the synthesis of biodiesel (Gouveia and Oliveira, 2009).

Table 1. Important Microalgae Used in hatcheries and their nutritional value

Algae	Protein	Carbohydrates	Lipids
<i>Anabaena cylindrica</i>	43–56	25–30	4–7
<i>Aphanizomenon flos-aquae</i>	62	23	3
<i>Chlamydomonas reinhardtii</i>	48	17	21
<i>Chlorella pyrenoidosa</i>	57	26	2
<i>Chlorella vulgaris</i>	51–58	12–17	14–22
<i>Dunaliella salina</i>	57	32	6
<i>Euglena gracilis</i>	39–61	14–18	14–20
<i>Chaetoceros muelleri</i>	35	20	30