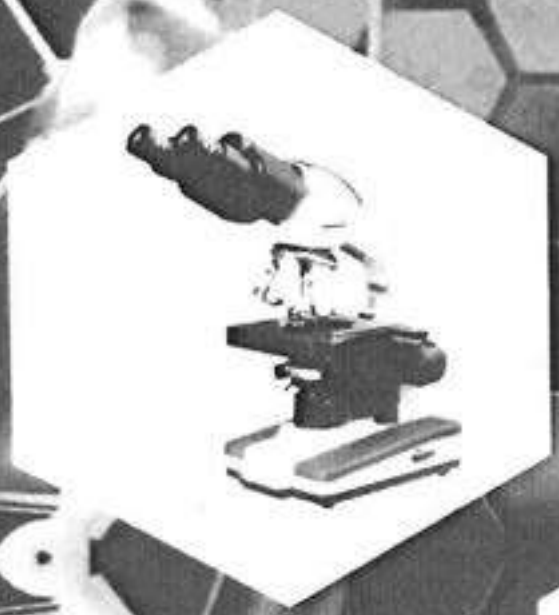
Methods and Tools in Biosciences



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Dr. Anita Gajraj
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Published by

Centre for Advanced Research and Development

Jaipur, Rajasthan, INDIA

Email: card_rajasthan@yahoo.com

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Centre for Advanced Research and Development
Jaipur, Rajasthan, INDIA
Email: card_rajasthan@yahoo.com

I.S.B.N.: 978-93-5351-601-7

Printed in India 2019

Laser typeset by : Nitin Nirwan

Printed by : Ruchika Creation, Jaipur
0141-4043430

Suggested Citation :
Gajraj, A. and Srivastava, R. (Eds.) Methods and Tools in Biosciences. Published by: Centre for Advanced Research and Development.

Price : ₹ 450/-

Contents

Spirulina Cultivation Technique

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Abstract

Spirulina is a natural "algae" (cyanobacteria) that is incredibly high in protein and a good source of antioxidants, B-vitamins and other nutrients. When harvested correctly from non-contaminated ponds and bodies of water, it is one of the most potent nutrient sources available. It is largely made up of protein and essential amino acids, and is typically recommended to vegetarians due to its high natural iron content. In the context of rising input costs and low returns in agriculture, spirulina also seems to promise farmers good income than other regular crops with very little investment. Therefore, the present article is a chapter in terms as supplementary material of Economic Botany and could be consider understanding its commercial cultivation.

Key-words: Spirulina, commercial cultivation, procedure, benefits.

1. Introduction

Spirulina (*Arthrospira platensis*) is a blue green alga. It is well known as cyanobacterium Spirulina. It is the oldest photosynthetic alga 3.5 billion old and researchers rediscover it as super food. Spirulina is a single cell protein and it is rich in vitamins, amino acids and many more nutrient. Spirulina contains all essential and non-essential amino acids which react together to form peptide bonds. The carbohydrates composition of Spirulina varies in between 11-18%, which is much higher in energy source. Lipid content of Spirulina ranges in between 9 to 15%, which is more than any other cell content.

Spirulina (*Spirulina platensis* or *Arthrospira platensis*) is a blue-green algae used in the daily diet of natives of Africa and America (Ciferri, 1983). Recent studies have documented role of Spirulina as therapeutic supplement in health management, besides being a rich protein source in diet. Owing to maximum protein content among both plant and animal kingdoms, it reduces metal toxicity when supplemented in diets (Jeyprakash and Chinnaswamy, 2005). It also has phytotherapeutic role that is assigned to its rich content of protein (60-70% by weight), vitamins, especially vitamin B_{12} and pro-vitamin-A (β-caroteins), (Careri *et al.*, 2001), minerals, especially iron and antioxidants like phycocyanin and phycobilin (Reddy *et al.*, 2000). It has been reported as an immuno-modulator (Ishii *et al.*, 1999) and antioxidant (Reddy *et al.*, 2000). It also