

# ALTERNATIVE APPROACHES IN AGRICULTURE

Proceedings of the  
UGC Sponsored National Seminar on  
Alternative Approaches in Agriculture  
for Sustainable Environment and  
Human Health



Department of Botany  
SBMS College  
Sualkuchi, Assam

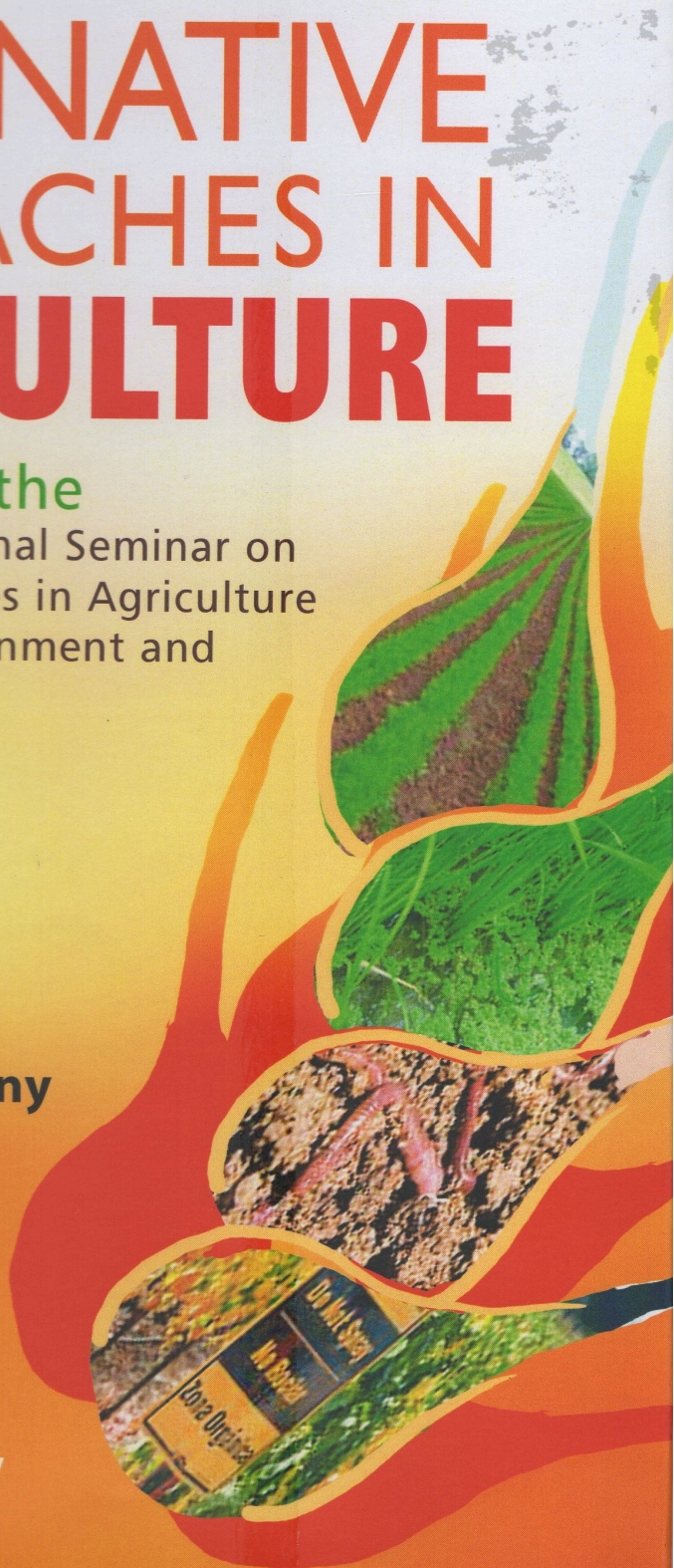
Edited by  
Dr. Kamal Choudhury

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### COLLEGE AT A GLANCE:

Sualkuchi Budram Madhab Satradhikar (SBMS) College is a premier institution of higher education for both boys and girls with Arts, Science and Vocational (B.Voc.) streams along with Community college programme under UGC. The College was established on the 1st August, 1963. The name of the college bears the haloed memory of two spiritual icons of this part of the state Late Budram Mahanta and Late Madhab Mahanta who donated 42 bighas of land for the cause of higher education in Sualkuchi. The college is situated in the heart of Sualkuchi, the land of golden thread that stands on the north bank of the mighty river Brahmaputra.



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## **Few words from Principal**

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Amongst the thousands of villages in Assam, the unique identity of Sualkuchi for its production of silk and *muga* costumes is not only better known to the people of the north-east, but also the other states in India. Sualkuchi Budram Madhab Satradhikar College (S.B.M.S. College), which was established long back to 1963, is one of the oldest colleges of post-independence era to be located in an exclusively rural area. As such, it is playing a pioneering role to disseminate higher education to the door-steps of the rural folk through its history of last five decades.

As an institution of higher education surrounded by exclusively rural area, we are obviously concerned with the issues that matter to the rural folk. Our concern is reflected in our activities that we have taken up in the bygone days to share with the people concerned at national platforms so as to contribute somehow towards resolution of the issues concerned. Our exercises on the issues like witch hunting, problems of silk industry etc. may be referred here.

As Sualkuchi occupies prominence for its silk products, so is the case with neighbouring villages for their entrepreneurship in agro-cum-horticultural products. The villagers, who are hard-working by nature, are inspired by market forces as the area is very much close to the city of Guwahati, which is known as the gate-way to the north-east. Being inspired by the high demand of their green vegetables in the market, the likeliness of indiscriminate use of fertilisers and pesticides in order to multiply their products in the farms cannot be ruled out. The entailing effects of such indiscriminate application of fertilisers and chemical pesticides may come out with severe health hazards for both the consumers and the users as well. Keeping the hazards in view, the Botany Dept. of this college with the sponsorship from the UGC, organised a seminar with a view to promoting a motivation towards production, application of organic manures and harm less pesticides among the farmers around us. With a view to enlightenment of the farmers, a full-length session during the event was devoted for their interaction with experts.

This volume is an outcome of the endeavour made by the Dept. of Botany of this college. I hope, it will not merely remain as a souvenir of the event, but will definitely be able to serve some gap of literature in the field concerned.

21.01.2017

D. Ch. Bhagabati

## **Preface**

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After the Green Revolution the use of chemical pesticides and fertilizers in agricultural field has become a common practice for increasing soil fertility and controlling insects and pests considerably. However, the consequences of extensive and often indiscriminate use of synthetic chemicals have been quite deleterious. Their adverse effects on human health, contribution to environmental degradation and negative impact in the extermination of friendly insects (pollinators, predators, parasitoids), beneficial microorganisms and worms from soil have been recognised by one and all. It is needless to say that indiscriminate use of chemical fertilizers and pesticides could cause adverse changes in biological balance as well as lead to an increase in the incidence of cancer and other diseases through the toxic residues present in the grains or other edible parts.

In this connection we may say that synthetic chemical products are not only increasing the burden on agriculture but also on the planet's ecology in the long term. So for the sustainable environment and human health an alternative approach in agriculture is urgently needed. On the basis of these circumstances renowned agricultural scientist M S Swaminathan coined the term "evergreen revolution" to describe the enhancement of productivity without associated ecological harm. Looking in to these aspects SBMS College, Sualkuchi, organised this seminar on Alternative Approaches in Agriculture for Sustainable Environment and Human Health to provide a common platform to the scientists, researchers, academicians, NGO's and policy makers to discuss various aspects related to this topic.

This seminar is intended to focus and discuss about the various researches done on sustainable environment friendly agricultural system. The core issue is the sustainable development on the present agricultural system relating to human interest. Therefore the present seminar has been formulated with the following aims and objectives to gather knowledge on various disciplines of agriculture such as (i) to highlight of researches on various dimensions for sustainable and environment friendly agricultural system in India, (ii) to generate low-cost and eco-friendly bio-technology for insect and pest control, (iii) to find out the easily available plant and animal species with pesticidal properties, (iv) to create awareness among teachers, students, and general public about the threat of hazardous effects of pesticides and to inspire on sustainable use of agricultural lands to create a healthy and eco-friendly environment.

In this proceeding volume 24 numbers of research papers contributed by different scientists, academicians and researchers related to the different sub-themes of the seminar have been included so that this database as outcome of the seminar can be used for the formulation of appropriate action plan for the sustainable development in agricultural system for healthy environment and human health.

This entire process of preparing this proceeding has been done in a hurry and some errors might have crept in. We beg apology for any such unintentional fault.

January, 2017

**Kamal Choudhury**  
Editor

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