

## SBC, Your Partner of Choice for Microalgal Biotechnology in Borneo

Sarawak, situated on the NorthWest Coast of Borneo, counts among the top biodiversity hotspots in the world. Easily accessible by air and by sea, Sarawak provides a unique gateway to explore Borneo's biodiversity.

With pristine land and waters, almost constant light cycles and temperature conditions, and mostly immune to major natural disasters, Sarawak provides an ideal setting for developing microalgae-based biotechnological applications.

SBC, offering a complete pipeline of capabilities—from strain collection, isolation and characterization to research level photobioreactors and outdoor proof-of-concept cultivation scaleup facilities—has become the research and development partner of choice in the region for potential collaborators interested in unlocking the biotechnological potential of Borneo's microalgal biodiversity.



**SBC's algae cultivation facility is** the largest outdoor microalgal cultivation facility of its kind in Southeast Asia. The facility consists of an optimized outdoor photo-bioreactor system that maximizes yield and minimizes cost by growing indigenous microalgal strains adapted to Sarawak's climate and light conditions. It is designed to yield up to 6 tonnes of dried algal biomass per year on an area of 1,000m<sup>2</sup>.

## UNLOCKING THE POWER OF MICROALGAE

### THE SARAWAK BIODIVERSITY CENTRE

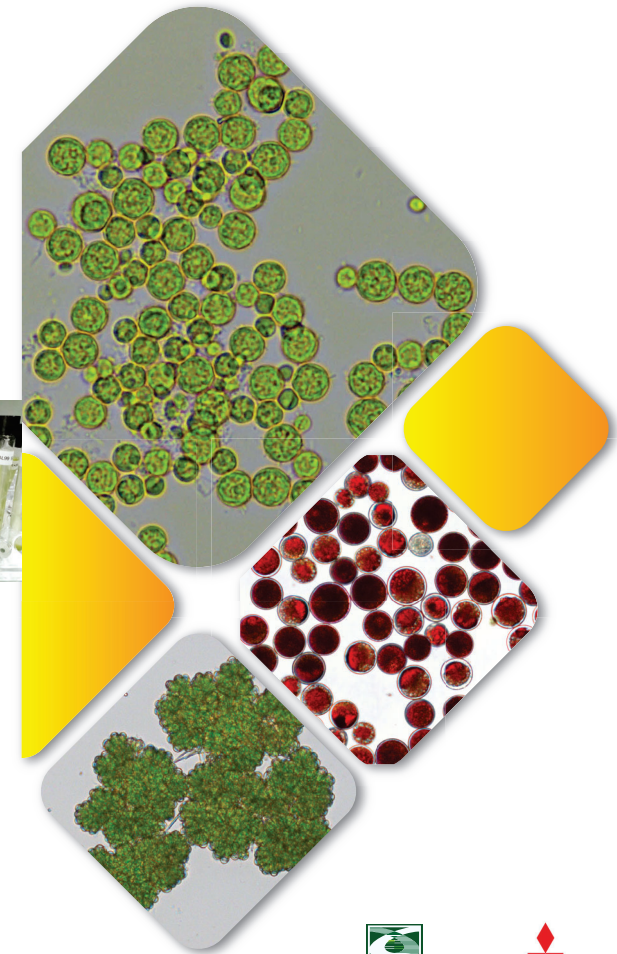


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## THE SBC MICROALGAE LIBRARY HARNESSING BORNEO'S BIODIVERSITY



Main Partners

Technical Support

The Sarawak Biodiversity Centre (SBC) Microalgae Library is a unique resource offered by SBC to the global community to help unlock the biotechnological potential of Borneo's microalgal biodiversity.

## THE SBC MICROALGAE PROJECT

### An International Collaborative Effort



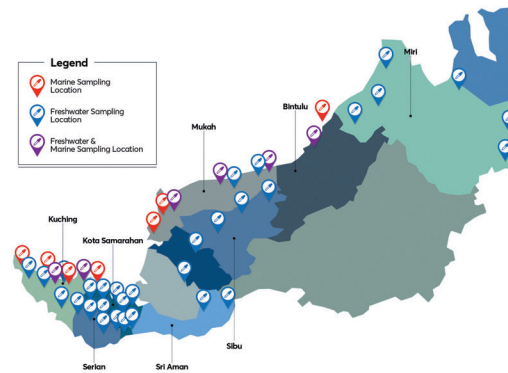
Since its establishment in 1997, SBC has spearheaded an intensive research and development program focused on documenting and sustainably utilizing Sarawak's invaluable biological resources. One key component of these efforts has been the establishment of a comprehensive microalgae library containing microalgal strains representative of the biodiversity present in different aquatic microenvironments in the state—freshwater, brackish water and saltwater.

In 2012, SBC partnered with Mitsubishi Corporation (MC) to identify microalgal strains in the SBC microalgae library with potential for commercial food, fuel and feed applications. With technical support from the Chitose Group, SBC and MC have focused (1) on substantially increasing the size of the SBC microalgae library, and (2) on developing outdoor cultivation facilities to determine the viability of maximizing biomass production when growing microalgae of interest under natural light and temperature conditions.

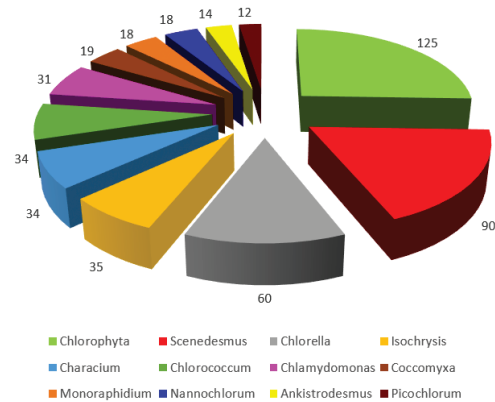
As of December 2019, the SBC microalgae library has grown to **over 650 unique and curated strains** with over half of them having confirmed biotechnological potential, and the outdoor cultivation facilities now include **a small scale photobioreactor system (81m<sup>2</sup>)** and **a medium scale, proof-of-concept algae cultivation facility (1000m<sup>2</sup>)**.

## The SBC Microalgae Library at a glance

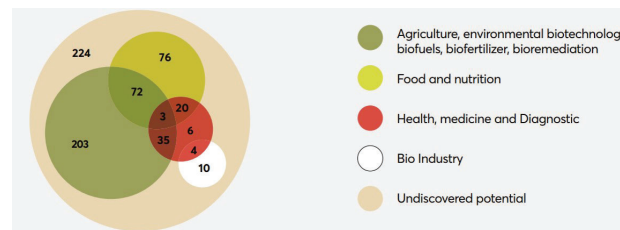
*Comprehensive sampling* of Sarawak's microalgal biodiversity



*Broad representation* of Sarawak's microalgal biodiversity



*Biotechnological potential* of Sarawak's microalgal biodiversity



## The Biotechnological Potential of representative SBC Microalgae Library isolates

