

This issue highlights Dhaka Muslins and biochar production: unveiling the past and paving the way to a sustainable future. I am delighted to present two articles—one on the agronomy of the heritage cotton variety SR-25, which was used to produce Dhaka Muslins, and the second on a revolutionary method of producing biochar using the cone-pit open-earth kiln technology.

The first article takes us on a journey back in time to explore the rich heritage of Dhaka Muslin. While delving into its legacy, it aims to improve its agronomy to consolidate the gains for our future generations. The article traces the origins of the Phuti Karpas variety SR-25 to the cotton plants that once flourished along the banks of the Brahmaputra, Meghna, and Shitalakshya rivers. The exquisite Muslin fabric, renowned for its unparalleled quality, was crafted exclusively from the fibers of the Phuti Karpas variety. Although this variety is yet to be cultivated on a large scale in Bangladesh, the Cotton Development Board (CDB) has embarked on a mission to collect and conserve the germplasm of Phuti Karpas, aligning with the vision of Prime Minister Sheikh Hasina to revive the magnificence of Muslin in Bangladesh. This endeavor reflects the CDB's commitment to preserving the heritage of Muslin manufacturing technology and revitalizing its significance in our modern world. The study emphasizes the importance of identifying the most favorable planting period, considering factors such as crop variety, environmental conditions, and pest and disease occurrence. Through effective management strategies and proper timing, the CDB aims to maximize the productivity of Phuti Karpas and ensure the sustainable growth of a new niche market.

The second article describes a simple technology for producing biochar, which has immense potential to play a crucial role in combating climate change and improving soil health. Biochar production has been practiced for over 2500 years, particularly in the Amazon basin, where it has been widely used as a soil amendment to revive unproductive lands and foster sustainable agriculture, resulting in the creation of Terra preta (black earth). The cone-pit open-earth kiln technology builds upon this legacy, representing a monumental breakthrough in our current times. It allows organic biomass to be converted into biochar in-situ without the need for sophisticated equipment or infrastructure. Inspired by the pioneering work of Schmidt and Taylor in developing the Kon-Tiki pyrolysis method and Josiah Hunt's innovative approach described in the article "How to make biochar with a match," this simple and affordable technique opens doors to mass biochar production on small-holder farms, empowering farmers, particularly those in resource-poor Africa, to actively contribute to climate change mitigation and improve soil health.

Biochar, derived from biomass through controlled pyrolysis, not only improves soil health but also plays a crucial role in carbon sequestration, actively removing carbon dioxide from the atmosphere and reducing greenhouse gas (GHG) emissions. Furthermore, biochar enhances soil structure, microbial activity, water retention, and nutrient availability, all of which are vital for sustainable and productive agriculture. African soils, especially in cotton-growing regions, often face challenges such as acidity, low cation exchange capacity, and high bulk density. The high cation exchange capacity, low bulk density, and alkaline nature of biochar derived from cotton stalks make it an ideal solution to remedy these soil conditions, providing a pathway to sustainable farming practices and increased agricultural yields. The mass production of biochar by small-scale farmers using low-cost technologies like the cone-pit open-earth kiln and the Kon-Tiki method holds great promise for small holder farmers in Africa, Asia and beyond. These approaches not only address the pressing issue of climate change but also empower farmers to improve their soil health and overall agricultural productivity. By harnessing the potential of biochar and promoting its widespread adoption, we can make significant strides towards a more sustainable future.

In conclusion, the articles presented in this issue shed light on the remarkable legacy of Dhaka Muslins and the transformative potential of biochar production. By reviving the heritage of Muslin manufacturing and adopting sustainable biochar production techniques, we can honor our past and pave the way for a more sustainable future. These efforts not only contribute to preserving our cultural heritage but also address the pressing challenges of climate change and soil degradation. As we embark on this journey, let us embrace innovation, collaboration, and the wisdom of our ancestors to build a world that thrives on sustainable practices and values our precious natural resources.

– Keshav Kranthi