Special Issue

Cultivation Strategies for Sustainable Bioenergy Crop Production

Message from the Guest Editors

Bioenergy crops are key to reducing greenhouse gas emissions, enhancing energy security, and supporting rural economies. Additional benefits include carbon sequestration, soil health improvement, and energy source diversification. A major challenge is the sustainable integration of dedicated bioenergy crops that yield high-quality biomass with minimal input. Understanding the genetic and environmental factors influencing biomass production is essential, especially under changing climate conditions. Optimizing locally adapted crop selection and cultivation practices remains a critical but underexplored area. To address these issues, we would like to introduce this Special Issue, which focuses on the following areas:

- Management and breeding for crop yield and quality optimization;
- Practices for soil health and resource efficiency;
- Water management and drought resilience;
- Cultivation in marginal or degraded lands;
- Crop diversification, intercropping, and circular bioeconomy approaches.

The overarching goal of this Special Issue is to gain insight into different strategies that can boost bioenergy crop production while contributing to a bio-based sustainable economy.

Guest Editors

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