**Session Proposal**

# Session Title

# The synergistic effects of lime, NPK, and manure application on rice productivity in the soils of the Old Himalayan Piedmont Plain

# Session Organizers

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1. **Session Description**

Soil degradation due to excessive chemical fertilizer use poses a significant threat to sustainable agriculture and environmental health. This study evaluates the synergistic effects of lime, NPK fertilizers, and organic amendments on soil properties and rice productivity in the Old Himalayan Piedmont Plain. A field experiment was conducted at Hajee Mohammad Danesh Science and Technology University, Dinajpur, from January to May 2024, using a randomized complete block design (RCBD) with ten treatments and three replications. The treatments included combinations of lime, inorganic fertilizers, and organic amendments (farmyard manure and poultry manure). Results showed that Treatment T6 (Lime + 50% RDF + poultry manure @ 3 t ha⁻¹ + FYM @ 6 t ha⁻¹) significantly improved soil physico-chemical properties, including pH balance, organic matter content, and nutrient availability, while maintaining rice yield at par with full recommended fertilizer doses. Additionally, this treatment reduced inorganic fertilizer dependency by 50%, enhancing agronomic efficiency and minimizing environmental risks such as soil acidification and nutrient leaching. The study highlights the potential of integrating lime and organic amendments to enhance soil resilience, improve nutrient use efficiency, and promote sustainable rice farming. By reducing reliance on synthetic fertilizers, this approach contributes to long-term soil fertility, mitigates environmental pollution, and supports climate-smart agriculture. These findings align with global efforts to develop sustainable soil management practices, making them highly relevant to discussions on soil health at the 23rd World Congress of Soil Science.

# Format:

# Oral presentations and Poster presentation

# Proposed Speakers

Based on the relevance of your study to soil health, sustainable agriculture, and nutrient management, **Professor Dr. Shah Moinur Rahman** would be the most suitable speaker.

**Selected Speaker:**

**Professor Dr. Shah Moinur Rahman**
**Affiliation:** Chairman, Department of Soil Science, Hajee Mohammad Danesh Science and Technology University (HSTU), Dinajpur, Bangladesh.

**Potential Contribution to the Session:**
Dr. Rahman has extensive expertise in soil fertility, nutrient management, and sustainable agricultural practices. His knowledge in soil amendments, liming, and organic-inorganic fertilizer integration aligns well with the study’s findings. As a leading soil scientist, he can provide critical insights into improving soil health, mitigating environmental degradation, and enhancing agronomic efficiency through integrated soil management strategies.