

Title: Adoption of green chemical policies to save soil health: A case study

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Bangladesh is one of the most densely populated countries in the world with more than 160 million people with a very small territory of 147,570 square kilometers (BBS, 2017). To ensure food production for the huge population, the term 'green revolution' was appeared in 1960s with the concept of 'grow more food'. Thus, the use of chemical fertilizers mounted tremendously in the agricultural soils Bangladesh for the last few decades. In 1960, it was found that the use of nitrogen was 8.6 Kg per hectare; in 2006, it increased to 62.5 Kg per hectare and in 2016, it increased to 149 Kg per hectare. The above statement indicates that the use of chemical fertilizers like nitrogenous urea increased about 18 times as that was in 1960. Considering the above issues 190 soil samples were collected from the Brahmaputra and the Ganges alluviums by revisiting the sites sampled previously 1990s to quantify the status of soil pH and soil organic carbon (SOC). The most important agricultural lands exist on the above two alluviums formed by the deposition of alluviums from the two mighty Rivers - the Ganges and the Brahmaputra where their cropping intensity is more than 200 per cent. Sampled soils were analysed in the chemical laboratory to measure their soil pH by making soil-water suspension (ratio: 1: 2.5) and soil organic carbon by wet oxidation method. SOC datasets of current soil samples and the historic data sets revealed that SOC declined across the study sites. At the same

time, soil pH is becoming low and decreasing tremendously indicating soil acidity. The reason of losses of SOC and low pH may be intensive cropping with overuse of nitrogenous fertilizers across the decades. So, green chemical policies should be adopted based on site specific fertilizer requirement for SOC sink and to reduce soil acidity in the alluvial soils of Bangladesh.

Biography

Dr. Md. Jashim Uddin is a Professor of Department of Soil, Water and Environment at University of Dhaka, Bangladesh. He did his PhD from Kingston University London, United Kingdom. He served as 'Scientific officer' at Soil Resource Development Institute (SRDI), Ministry of Agriculture, Bangladesh from May 25 1994 to 30 June 2001. He also served as 'Senior Scientific Officer' at Bangladesh Rice Research Institute (BRRI) from 01 July 2001 to May 04 2005. He is experienced in teaching and research more than 25 years. He published more than 40 research papers in national and international journals.

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