
**A REVIEW CROP RESIDUES MANAGEMENT OPTION FOR
SUSTAINABLE SOIL HEALTH IN RICE-WHEAT SYSTEM**

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DOI: **10.5958/2249-7307.2021.00089.X**

ABSTRACT

The rice-wheat system is India's most dominant agricultural system, but its long-term viability is in jeopardy owing to deteriorating soil health and climate change concerns. The irrigated Rice-wheat system's high yields have resulted in massive amounts of agricultural leftovers. Rice straw burning is widespread in north-west India, resulting in nutrient losses and severe air pollution, both of which are harmful to human health. To prevent straw burning, agricultural residue management technologies could help farmers achieve sustainable productivity, decrease fertilizer and water inputs, and mitigate climate change risk. Crop leftovers contain large amounts of plant nutrients, and their proper use will improve nutrient management in the rice wheat system. Long-term residue recycling studies have shown increases in soil's physical, chemical, and biological health. Another viable crop residue management option is to use a portion of the surplus residue to produce biochar as a soil amendment to improve soil health, increase nutrient use efficiency, and reduce air pollution, as well as other options such as mushroom cultivation to convert inedible crop residues into valuable food, surface mulch to conserve soil moisture and prevent weeds, biofuel and composting. Soil organic carbon and other nutrients are significantly increased as a result of residue decomposition. The authors of this paper examined residue potential and alternatives for effective crop residue management in the rice wheat cropping system.

KEYWORDS: *Crop Residues, Human Health, Plant Nutrients, Rice-Wheat, Sustainable Soil Health.*

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