

Crop Residue Management In: Advanced Agriculture by S. Maitra and B. Pramanick (Editors)
© New Delhi Publishers, New Delhi: 2020, 195-210. ISBN: 978-93-88879-99-6, DOI: 10.30954/
NDP-advagr.2020.10

Crop Residue Management

Samar Pal Singh^{1*}, Biswajit Pramanick², Sagar Maitra³,
V.R. Yadav¹ and B.S. Mahapatra¹

¹Department of Agronomy, G.B. Pant University of Agriculture & Technology, Pantnagar, Uttarakhand, India.

²Department of Agronomy, Rajendra Prasad Central Agricultural University Pusa, Samastipur, Bihar, India.

³Department of Agronomy, M.S. Swaminathan School of Agriculture, Centurion University of Technology Management, Paralakhemundi, Gajapati, Odisha, India.

*Corresponding author: samarpalagro@gmail.com

Abstract: Crop residue management is an emerging challenge for sustainable crop production and environment protection in rice-wheat cropping system mainly in the Indo-Gangetic Plains (IGP). County produces about 620 MT total crop residues annually in which about 30% contribution is of rice and wheat crop residues. The sustainability of rice- wheat cropping system is at risk due to intensive tillage, continuous deterioration of soil health due, over exploitation of natural resources and burning of crop residues. Burning of rice residues is common in the north-western parts of India and according to estimates about 62% contribution is of rice and wheat residue in burning annually in rice- wheat cropping system. Burning of crop residues create severe problems as multi-nutritional deficiencies in soil, soil health problems and severe air pollution hazards that have adversely affected human health and safety. Several problems had been noticed due to burning of residues in the region having dominance of rice-wheat system for the past four decades, threatening the sustainability of the system. Effective management of crop residues by adopt agro-based technologies in productive and profitable manners is needed to improve soil health, increase crop productivity and sustainability and reduce soil and air pollution. Loose residue in combine harvested rice fields interfere with further the tillage operations and seeding machinery this problem forced to farmers to burn crop residue. This constraint can be resolved by incorporation of innovative latest version technology of the Happy Seeder for wheat crop sowing and Mulcher for residue management. Zero tillage machines is the best option in wheat sowing in the area where rice crop is harvested by manually. These techniques can serve as a boon for *in-situ* management of crop residues with conserving natural resource and safe the environment. Other possible options for crop residue management implied using a portion of surplus residues for bio-char (and