

# Effect of Crop Residues Burning on Chemical and Biological Properties of Soil

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**Abstract**—The utilization of crop residues varies across different states of the country. Traditionally crop residues can be used as animal feed, fodder, fuel, roof thatching, packaging and composting, among them cereal crop residues are mainly used as cattle feed. Rice straw and husk are used as domestic fuel or in boilers for parboiling rice and remaining (surplus residues) are left unused or burnt on-farm. But nowadays the major difficulties come to farmers in dispose and removal of the crop residue from existing field because of discontinue of its traditional uses. That's why burning of crop residues increases day by day and affects soils physical, chemical and biological properties. Soil samples of rice fields were collected from three different depths of soil (0-5cm, 5-15cm and 15-30cm) before burning at the harvesting time and after burning of residues from three different sites of Haryana, to study the impacts of crop residues burning on physico-chemical and biological properties of soil. It has been found that the soil pH and Electrical conductivity (EC) increases after burning it may be due to the higher temperature and fire. Organic carbon increases after burning and available nitrogen, phosphorus and potassium slightly increases after burning. Microbial population (Bacteria and Fungi) and MBC(microbial biomass carbon) decreases after burning as compare to before burning as well as enzymatic activities such as Dehydrogenases and Ureases also decreases after burning and it may be due to the decreasing microbial population.

**Keywords:** residue burning, microbial biomass carbon, dehydrogenases and ureases.