

Review Article

ROLE OF CONSERVATION AGRICULTURE IN SUSTAINABLE AGRICULTURE

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ABSTRACT

One of the long-term remedies to agriculture's depletion of natural resources and degradation of the environment has been identified as conservation agriculture systems with proper crop and soil management packages. This essay examines the significance of conservation agriculture, its connection to environmental change on a worldwide scale, and the difficulties that arise when socioeconomic, scientific, and technological issues are combined. Through intensive agricultural techniques, conventional agriculture has successfully met output targets but has also led to the depletion of natural resources. The growing interest in sustainable agriculture has been viewed as a constructive reaction to both intensive modern agriculture, which depends on large inputs for crop production, and conventional agriculture, which uses modest inputs. Sustainable farming focuses on methods that protect ecological systems. The efficient use of inputs as well as the promotion of natural regenerative processes such as nitrogen fixation, nutrient cycling, soil regeneration, and the preservation of pest and disease natural enemies. By restoring soil fertility using the three concepts of crop rotation, minimal soil disturbance, and surface crop residue retention, conservation agriculture aims to boost crop productivity and sustainability. These solutions enable agricultural systems to not only support high productivity but also biodiversity preservation and environmental protection. To fulfil the objective of sustainable agricultural output, a new paradigm known as conservation agriculture has emerged. It represents a significant advance in the direction of sustainable agriculture.

KEYWORDS: Agro-ecosystems, Conservation Agriculture, Crop rotation, Green manuring, Nutrient cycling, Sustainable Agriculture, Sustainability.