

Conservation Agriculture

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What is Conservation Agriculture(CA)?

Conservation Agriculture is a farming system that promotes maintenance of a permanent soil cover, minimum soil disturbance (i.e. no tillage), and diversification of plant species. It enhances biodiversity and natural biological processes above and below the ground surface, which contributes to increased water and nutrient use efficiency and to improved and sustained crop production.

Three principles of CA

- **Minimum mechanical soil disturbance (i.e. no tillage) through direct seed and/or fertilizer placement:** Direct seeding involves growing crops without mechanical seedbed preparation and with minimal soil disturbance since the harvest of the previous crop
- **Permanent soil organic cover(at least 30 percent) with crop residues and/or cover crops: Keeping the soil covered is a fundamental principle of CA. Crop residues are left on the soil surface, but cover crops may be needed if the gap is too long between harvesting one crop and establishing the next**
- Species diversification through varied crop sequences and associations involving at least three different crops: The rotation of crops is not only necessary to offer a diverse “diet” to the soil micro organisms, but as they root at different soil depths, they are capable of exploring different soil layers for nutrients. Nutrients that have been leached to deeper layers and that are no longer available for the commercial crop can

be “recycled” by the crops in rotation. This way the rotation crops function as biological pumps

Significance and benefits of CA

- CA facilitates good agronomy, such as timely operations, and improves overall land husbandry for rainfed and irrigated production.
- Complemented by other known good practices, including the use of quality seeds, and integrated pest, nutrient, weed and water management, etc., CA is a base for sustainable agricultural production intensification.
- It opens increased options for integration of production sectors, such as crop-livestock integration and the integration of trees and pastures into agricultural landscapes.