

FULLY MECHANIZED RICE AND WHEAT PRODUCTION WITH A FOCUS ON LOSS REDUCTION



PART.07



High-Yield and Loss- Reduction Technologies for Premium Rice Production



Key Approaches

■ High-Yield and Loss-Reduction Technologies

- Scientific variety selection.
- Precision fertilization.
- Optimal planting density.
- Effective pest & disease control.
- Reduces losses during harvesting, transportation and processing.

■ Positive Outcomes

- High grain quality.
- Full harvest retention.
- Improved farmer incomes.
- Enhanced food security.



1. Mulch Film Transplanting Technology for Rice

Four Benefits

■ Weed Suppression

- Physically blocks weed growth by pressing them beneath the film.

■ Temperature Regulation

- Absorbs solar energy, warming the soil during the day.
- Retains heat at night.

■ Moisture Retention

- Reduces water evaporation.
- Conserving soil moisture and saves irrigation resources.

■ Soil Improvement

- **Loosens soil → enhances aeration → supports healthier root development.**
- **Increases seedling survival → boosts yield.**



2. Physical and Chemical Pest Control (The Attract-and-Kill Strategy)

■ Technical Principle

Uses **light waves**, **color sticky boards**, and **pheromone-based attractants** for precision pest management.

■ Core Advantages

Eco-friendly and efficient.

Targeted integrated pest management (IPM) system.

■ Main Components

Light Traps: Attract light-loving pests using **specific wavelengths**.

Color Boards: Use **visual attraction** (e.g., yellow, blue) to lure and capture pests.

Sex Pheromone Lures: Disrupt pest mating by releasing **synthetic pheromones**, reducing population growth.



3. Inter-tillage and Ditching Technology in Paddy Fields

■ Soil Loosening

- Improves soil aeration.
- Promotes stronger root development.



■ Ditching

- Creates small channels for drainage and irrigation.
- Reduces field humidity and inhibits the growth of weeds and pathogens.

■ Water and Disease Control

- Regulates ditch water levels to control field humidity.
- Suppresses pest and disease outbreaks.



4. Intelligent Weeding Machines

■ Accurate Weed Removal

Precisely detect and eliminate weeds between and within rice rows.

■ High - Speed Operation

Operate at high speed and efficiency.

■ Herbicide Reduction

Reduce dependence on chemical herbicides.

■ Sustainable Agri - Development

Improve field management, environmental sustainability, and intelligent green agriculture.

