

ICAR and FCI signs MoU for Safe and Sustainable Foodgrain Storage

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The Indian Council of Agricultural Research (ICAR) and the Food Corporation of India (FCI) signed a Memorandum of Understanding (MoU) on 30 September 2026 to undertake research on alternative fumigation technologies for safe and sustainable management of storage pests in wheat and rice. The research study is supported by the Department of Food & Public Distribution (DFPD), Ministry of Consumer Affairs, Food & Public Distribution.

The two-year Phase-I project will be implemented by ICAR–Central Institute of Post-Harvest Engineering and Technology (CIPHET), Ludhiana.



For decades, India's critical grain reserves have relied heavily on aluminium phosphide (ALP) and malathion for post-harvest pest control. However, widespread and repeated use has led to severe consequences, including **pest resistance** frequencies reaching 72-100% in key Indian states and escalating fumigation cycles that drive up operational costs. Furthermore, current chemical methods pose significant respiratory threats to workers and long-term ecological risks. This initiative seeks to directly address these challenges by standardizing the commercial use of nitrogen gas, carbon dioxide (CO₂ ) , and a synergistic combination of CO₂  and phosphine. The following three major trials will be conducted in Phase-I:

- Nitrogen gas (>99%) fumigation for effective management of storage pests in wheat stored in metal silos.
- Combined carbon dioxide and phosphine gas fumigation for managing/controlling storage pests in wheat and rice stored in bags at FCI/CWC warehouses.
- Carbon dioxide fumigation for managing/controlling storage pests in wheat and rice in bags enclosed in hermetic covers.

Following the two-year Phase-I pilot, Phase-II will expand into a one-year multi-location trial across varied agro-climatic zones to establish region-specific Standard Operating Procedures (SOPs).

The initiative aims to develop scientifically validated, scalable and sustainable alternatives to conventional chemical fumigation, addressing concerns related to increasing pest resistance, occupational exposure, environmental impacts and fumigant residues.



The MoU was signed in the presence of the Dr. M. L Jat, Secretary, DARE & Director General, ICAR; Dr. Rajbir Singh, Deputy Director General (Agricultural Engineering), Dr. D.K. Yadav Deputy Director General (Crop Science), Dr. K. Narsaiah, Assistant Director General (Processing Engineering); ICAR. The MoU was signed by Dr. Nachiket Kotwaliwale, Director, ICAR-CIPHET and Dr. A.K. Sinha, Executive Director (Quality Control), FCI. The event was also attended by Ms. Priya Jacob, Director, DFPD, Sh. Rajagopal General Manager QC-FCI, Dr. Devinder Dhingra, Pr. Scientist, ICAR; Dr. Sandeep Mann Pr. Scientist and Lead Investigator of project, ICAR-CIPHET; Shri Gautam Kumar, Deputy General Manager (Quality Control), FCI; Sh CP Saharan and Ms. Sarika Pritam, Assistant General Manager (Quality Control), FCI.

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