

IPM: Integrated Management of Insects, Diseases and Weeds in Wheat

Balanced Protection for Sustainable Harvests

IPM in wheat combines biological and cultural techniques, releasing beneficial organisms through gradual or immediate methods to control pests and reduce chemical reliance. Key practices like crop rotation, adjusted planting times, increased crop density, and mass trapping target aphids, weeds, whiteflies, and thrips effectively.



International Center for Agricultural Research in the Dry Areas (ICARDA)
Zewdie Bishaw

Technology from
ProPAS

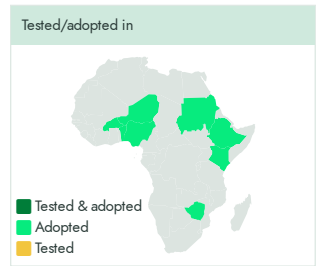
Commodities
Wheat

Sustainable Development Goals

Categories
Production, Practices,
Pest control (excluding weeds),
Weed management

Best used with

- [Yellow Rust and Stem Rust Resistant wheat >](#)
- [Hessian Fly Resistant Wheat Varieties >](#)
- [Heat and Drought Tolerant Wheat Varieties >](#)



Where it can be used

This technology can be used in the colored agro-ecological zones.

This technology is **TAAT1 validated**.
 8-9
 Scaling readiness: idea maturity: 8/9; level of use: 9/9

Cost: \$\$\$ 515 USD	ROI: \$\$\$ 30—70 %
Full IPM package	Yield increased
17—33 %	<10 %
Reduction in beetle damage	Rust infestation reduction
35 USD per hectare	IP
Profit generated by IPM	Open source / open access

Problem

- Emergence of Pesticide-Resistant Pests:** Frequent pesticide use leads to resistant pest biotypes, risking crop damage and reducing yields.
- Distorted Natural Pest Control:** Excessive pesticide application disrupts natural pest predators, leading to uncontrolled pest populations.
- Environmental Risks with Chemicals:** Overuse of pesticides can harm soil, water, and ecosystems, posing environmental risks.

Solution

- Preventing Pesticide Resistance:** IPM employs diverse biological and agronomic methods to reduce reliance on chemical agents, preventing the emergence of pesticide-resistant pests.
- Restoring Natural Pest Control:** IPM balances populations of beneficial and harmful organisms using biological, mechanical/physical, and cultural techniques, restoring natural pest control mechanisms.
- Sustainable Crop Protection:** IPM minimizes the use of chemical pesticides, promoting sustainable crop protection and safeguarding food safety and environmental health.

Key points to design your business plan

Implementing Integrated Pest Management (IPM) in wheat production promotes sustainability by reducing chemical pesticide usage and enhancing productivity. Key steps for integration include:

- Organizing detailed pest surveillance, adopting cultural measures, rearing parasitoid wasps, and using seed treatments and pre-emergence herbicides.
- The estimated costs for these practices, including training and collaboration with local agricultural services, are essential for ensuring effective implementation and assessing the economic benefits of IPM for wheat producers.

Gender assessment **5** Climate impact **6**