IPM: Integrated Management of Insects, Diseases and Weeds in common bean

Smart Solutions for Safer Farming

IPM is a holistic approach to managing pests, diseases, and weeds in common bean cultivation, emphasizing environmental sustainability and food safety. It reduces reliance on chemical pesticides and promotes natural control mechanisms for crop productivity and food security.

Alliance

The Alliance of Bioversity International and the International Center for Tropical Agriculture (CIAT)

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This technology is TAAT1 validated.

7·7 Scaling readiness: idea maturity 7/9; level of use7/9

6,000 USD	0.5 - 1 USD	25 - 35 USD/Ha	IP
Operation cost per year	Coating 1kg of seed	Pre-emergence herbicides	Open source / open access

Problem

- Common beans face threats from pests and diseases, affecting productivity.
- Chemical pesticides, though effective, pose health and environmental risks and can lead to pest resistance.
- Poor pest management can result in food insecurity and income loss for bean growers.
- Overreliance on pesticides disrupts natural ecological balance and control mechanisms.

Solution

- Holistic approach to crop protection
- Minimization of chemical pesticide usage
- Balanced ecosystems maintenance
- Understanding beneficial organisms' life cycles and interactions
- Utilization of strategies like natural predator release and cultural practices
- Effective against common bean pests, diseases, and weeds
- Adaptability to diverse soil and climate conditions

Key points to design your business plan

IPM reduces chemical pesticide usage, promoting biodiversity conservation and enhancing ecosystem resilience while improving crop productivity, ensuring food security, and minimizing pesticide-related health risks.

Cost considerations include:

- Rearing parasitoid wasps costs around US $5,000 for installation and US $6,000 annually for operation.
- Seed coating with insecticide and fungicide ranges from US $0.50 to $1 per kilogram.
- Pre-emergence herbicides cost about US $25 to $35 per hectare.

Training is crucial, as is obtaining permits from national plant health agencies for biocontrol technology. Collaboration with development institutions, agro-input suppliers, and agricultural extension services is key. Profitability estimation is essential for assessing IPM's economic benefits.

Inclusion assessment 4

Climate impact 6

Technology from

ProPAS

Commodities

Common bean

Sustainable Development Goals

Categories

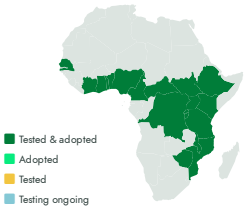
Production, Practices,
Pest control (excluding weeds),
Weed management

Best used with

Mechanical and Chemical Weed Management, Seed dressing of Seed with Fungicide and Insecticide

See all 2 technologies online

Tested/adopted in



Where it can be used

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