Economic Analysis for IPM Programs[1]

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Integrating an economic component into a National Strategic Plan for Integrated Pest Management (IPM) is essential for demonstrating cost-effectiveness, encouraging adoption, and guiding policy decisions. IPM reduces pesticide reliance while maintaining productivity, lowering costs, and minimizing environmental and health risks. However, knowledge gaps, initial investment costs, and uncertainty about economic returns often hinder adoption.

1. Cost-Benefit Analysis of IPM

- Reducing pesticide costs through monitoring-based applications rather than calendar-based spraying.
- Improving yield and quality, potentially securing price premiums.
- Enhancing return on investment (ROI) by cutting input costs and improving pest control efficiency.
- Preventing pesticide resistance, ensuring long-term effectiveness of pest management strategies.
- Reducing human and environmental risks, lowering toxicity exposure and water contamination.

2. Regional and Policy Incentives for IPM Adoption

- Regional case studies to showcase economic benefits.
- Subsidies and cost-sharing for scouting, biological controls, and precision technologies.
- Insurance incentives and tax credits for farms using IPM.
- Market-based incentives, such as eco-labels for IPM-grown products.

3. Decision-Support Tools and Broader Economic Impact

- IPM cost calculators tailored to farm conditions.
- NEWA-style digital tools integrating pest forecasts with cost-benefit analysis.
- Extension training on economic and risk-reduction benefits.

Beyond individual farms, IPM enhances market stability, supply chain efficiency, and rural economic development, while mitigating economic losses from pest outbreaks. Integrating economic analysis into IPM policy ensures long-term sustainability, financial viability, and environmental benefits. A strategic focus on cost savings, ROI, and risk

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mitigation will drive widespread adoption and a more resilient agricultural system (Pinto, 2025).