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“Bridging the gap between increasing knowledge and decreasing resources”

## Technology Transfer and Scaling up with Partners: The Plastic Barrier Technology for Pest Control in Community-Based Organic Potato Production in the Peruvian Andes

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### Abstract

In the Andes, potato (*Solanum tuberosum* L.; *Solanum* spp.) is cultivated on about 640,000 ha and the larger share of this takes place at altitudes between 3000 and 4200 m, where potato constitutes the main food and cash crop of small-scale farmers and their families. The Andean potato weevil (*Premnotrypes* spp.) is the major pest to potato production and food security since almost all that production area, especially at altitudes above 3800 m, is heavily affected. Physical barriers made from plastic material and wooden sticks - a technology investigated and developed by the International Potato Center (CIP) - can effectively control the pest thereby reducing damage levels, improving the quality of the produce and reducing the use of hazardous insecticides. Guided by training from CIP, NGOs have opted for that technology in their promotion of certified organic production of native potato varieties by farmers organised at the community and above community level (secondary-level association); thus, the NGO intervention serving as the entry point for scientific knowledge. Simulation-analysis based on empirical evidence (6 communities, 240 households) from monitoring the dissemination and adoption of the plastic barrier technology showed that net economic benefits in terms of damage abatement and cost effects depend significantly on market conditions and collective action has an important role to play. In an “optimistic” scenario benefits of more than US\$ 8000/ha can be obtained through the substitution of plastic barriers for the use of insecticides in Andean potato weevil control. From a strategic perspective of research and development in the area of Integrated Pest Management the present study supports the vision to conceptualise strategy design and implementation in the wider context of social capital creation, market incentives and partnerships between agents seeking development outcomes in the rural area.

**Keywords:** Collective action, integrated pest management (IPM), market conditions, net benefit, potato