

Early warning system for sustainable preventive management of potato late blight (*Phytophthora infestans*) in Latin America

The use of early warnings as a decision support tool in an integrated program helps farmers perform chemical control in a timely and efficient manner, reducing environmental impact and people's risk.

Chile / Argentina / Ecuador / Panama / Panamá



63 %
Number of women in the technical team



542
Total beneficiaries



2761
Trained people



42 %
Women



63
Number of workshops, seminars and field days



29
Number of validation units



528
Monitoring and characterization of the causal agent



2
Organized international symposiums



Implementation of the early warning system in participating countries

Initiative

This project proposes the formation of a platform of specialists in potato late blight to develop and implement an early warning system and a seasonal alert system, as tools to support productive systems of family farming in participating countries, according to available technology, enabling reductions in losses caused by this disease. This information, together with the characterization of the

pathogen-host relationship and training of users in integrated management and good agricultural practices according to productive objectives promotes the sustainable intensification of potato production. In this FONTAGRO-funded initiative, INIA Chile participated as executor with INTA Argentina, INIAP Ecuador and IDIAP Panama as co-executors.

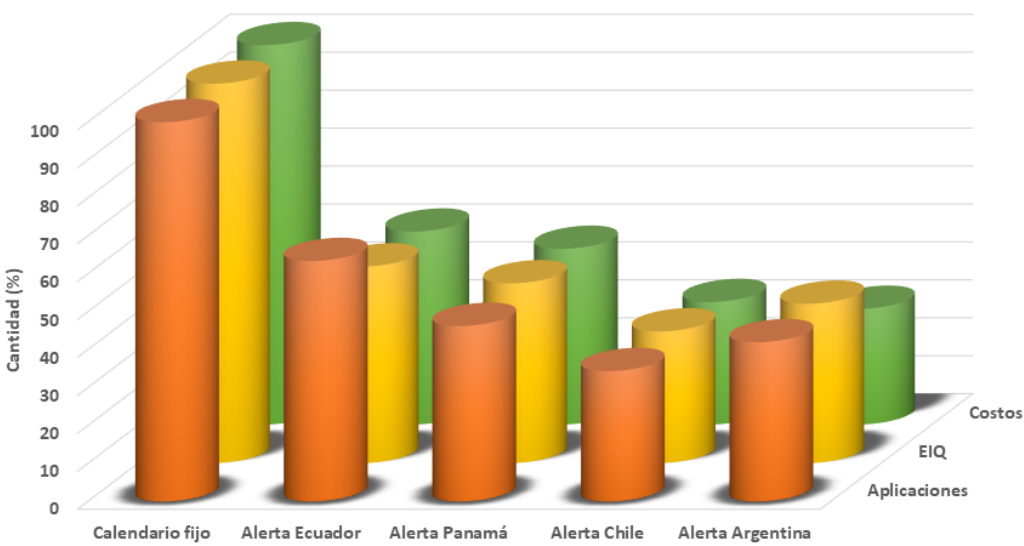
Early warning systems, integrated management and good agricultural practice, improve the efficiency of agrochemical use and increase potato crop productivity and profitability in small farming

Tech solution

The Early Warning System uses weather data alongside epidemiological information of the disease to estimate optimal control times. Two systems were implemented, one based on real-time connected weather station network information (tizon.inia.cl, Phytoalert) and a manual system that uses local environmental condition observation (DSS-HH). Both systems enable farmers to make management decisions based on the information delivered, improving the efficiency of agrochemical use, increasing crop

productivity and profitability. The beneficiaries were small farmers in the platform member countries. In Chile, work was carried out with 35 women farmers producing native potatoes on Chiloé Island; in Argentina, work was carried out with 6 farming families in Belgrano, Northern Argentina; in Ecuador, the direct beneficiaries were 120 farmers in the provinces of Cotopaxi, Pichincha and Chimborazo; while in Panama, work was carried out with 20 producers in the Cerro Punta sector, Chiriquí.

Number of applications, environmental impact quotient (EIQ) and cost in productive systems managed with early warning strategies



MORE INFO



Impacts and Results

It was possible to validate the early warning systems for late blight in 4 countries: Chile, Argentina, Ecuador and Panama, where more than 29 demonstration units were established, obtaining an efficiency of more than 50% in the reduction of agrochemical applications, environmental and economic impact, relative to a schedule calendar of applications. 528 isolates of *P. infestans* were collected using FTA cards from Chile, Argentina, Panama, Ecuador, Brasil, Uruguay, Peru and Costa

Rica, with a wide range of monitoring for a Latin American genotypic map. Potato chain actors were trained in 55 workshops on best agricultural practices, integrated management and use of early warnings, emphasizing the correct use of agrochemicals and timely applications. In addition, 8 field days and seminars, two international symposia and 2 workshops for co-executors and partners were carried out, with the participation of 2761 people (42% women).

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