

Strengthening Foc TR4 and Moko Management through Farmer Field Schools in Ecuador

Eng. Fanny Consuelo Tenorio Chicaiza

Agency for Phytoand Zoonosanitary Regulation and Control (Agrocalidad), Ecuador

Issue/challenge

The Agency for Phytoand Zoonosanitary Regulation and Control (Agrocalidad), the National Plant Protection Organization of Ecuador, is responsible for preventing the introduction, establishment and spread of pests, as well as for controlling regulated quarantine and non-quarantine pests. Capacity building of actors along the musaceae (banana and plantain) value chain is a key pillar for fulfilling this mandate.

Until 2023, training was mainly delivered through traditional classroom-based approaches, characterized by large groups, lecture-style presentations, limited practical activities and low levels of knowledge adoption. This reduced the effectiveness of phytosanitary measures at farm level and increased the risk of pest spread, particularly moko, as well as the potential introduction of *Fusarium oxysporum* f. sp. *cubense* Tropical Race 4 (Foc TR4).

Actions taken

To strengthen capacity building for musaceae producers, Agrocalidad, in coordination with Inter-american Institute for cooperation on Agriculture (IICA) and the German Agency for International Cooperation (GIZ), trained **28 technical staff nationwide** in the Farmer Field School (FFS) methodology.

The revised training approach:

- uses production sites as learning environments;
- works with small groups (25–30 participants);
- prioritizes hands-on practical activities;
- applies diagnostic and final evaluations to measure learning outcomes.

Farmer Field School (FFS) training process:

- characterization of the target group and registration of participants;
- initial knowledge assessment (box test);
- rotation through thematic learning stations and final evaluation, covering:
 - Foc TR4 symptomatology, associated pests and phytosanitary reporting;

- pest spread and delimitation;
- biosecurity and disinfection practices, including construction of footbaths.

Key results

The application of the Farmer Field School methodology significantly strengthened technical capacities among actors in the musaceae agro-productive chain.

Key outcomes include:

- a **30 percent increase** in technical knowledge, measured through pre- and post-training assessments;
- high levels of active participation by producers and other value-chain actors;
- increased adoption of recommended practices for Foc TR4 prevention and management, reflected in higher numbers of phytosanitary notifications and improved implementation of biosecurity measures.

These results demonstrate improved awareness, skills and engagement in phytosanitary risk management.

Conclusions

Traditional, lecture-based training models proved insufficient to promote sustained adoption of biosecurity measures, contributing to increased risks of moko spread and potential introduction of Foc TR4.

The Farmer Field School methodology—based on on-site training, small groups, practical learning and outcome-based evaluation—significantly improved knowledge appropriation and adoption of phytosanitary practices. This confirms that participatory and context-specific approaches generate more sustainable results.

Training is a critical component of pest management in musaceae, as it strengthens early detection, correct application of phytosanitary measures and timely response to outbreaks, thereby supporting national plant health objectives.

