Block 2 Poster 3

Hand-Held Decision Support System for Potato Late Blight Management (HH-DSS)

RESEARCH PROGRAM ON Roots, Tubers and Bananas

TECHNOLOGY DESCRIPTION

The hand-held decision support system (HH-DSS) (Fig. 1) is an affordable and practical tool to improve management of potato late blight disease (LB). HH-DSS helps farmers make better decisions about timing of fungicide sprays and selection of fungicides. Using the tool farmers can reduce fungicide costs and environmental impact (Fig. 2) without risking disease outbreak and crop loss.

A participative process identified one key concern that all farmers confront in LB management: deciding when to spray and what fungicide to apply. Three critical factors were identified that can affect the need to apply fungicide, and which are simple enough for a farmer to evaluate without sophisticated equipment: (1) susceptibility of the potato cultivar / host resistance; (2) a rough estimate of rainfall; and (3) time since the last fungicide spray.

The decision rules (what to apply and when to apply) were derived through a process of expert consultation and field experimentation, and based on a series of publications on farmer capacity building and LB management in the highland tropics.[1,2,3,4,5,6]

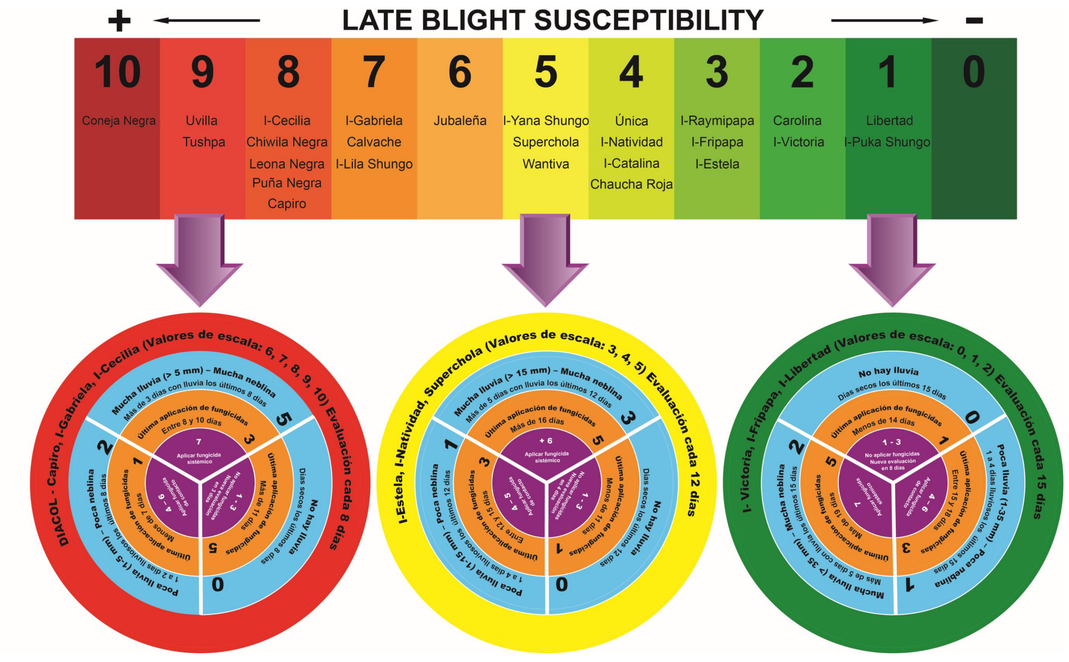

FIG. 1. Hand-held decision support tool for late blight management and farmer capacity building; RED for use in susceptible cultivars, YELLOW for use in moderately resistant cultivars and GREEN for use in resistant cultivars.

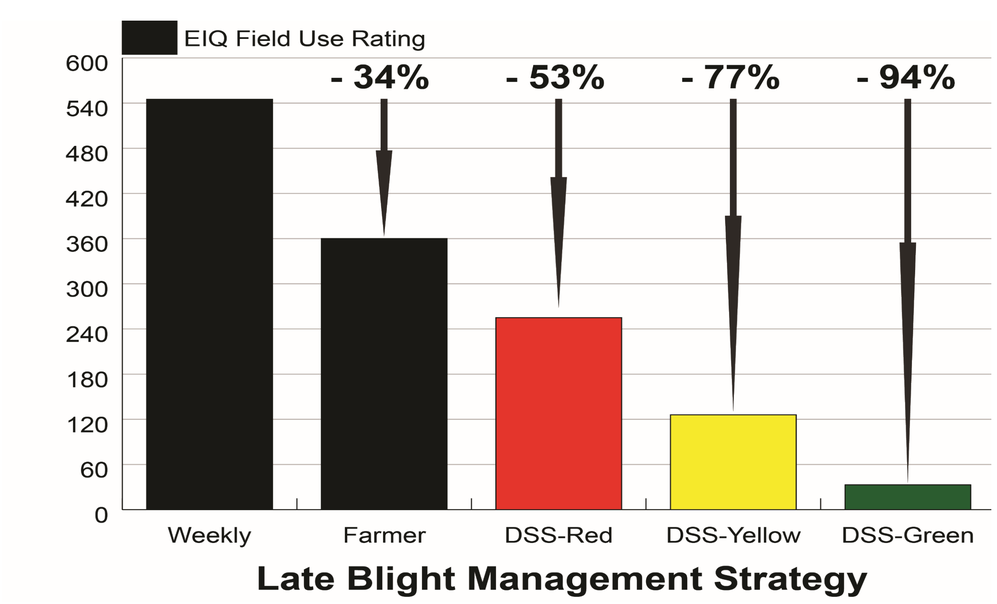

FIG. 2. Environmental impact reduction (Data from Ecuador)

LEVEL OF ADOPTION OR USE

At present, validation is taking place in Colombia, Ecuador, Peru and Ethiopia. In 2016, HH-DSS technology was ready for initial scaling with partners as an advanced prototype in Ecuador and Peru. The technology has potential to be adopted by thousands of farmers in the Andean countries and eventually reach several hundreds of thousands in Asia and Africa over the coming years.

CRITICAL GAPS AND NEXT STEPS

The private sector could play a key role in validating and disseminating HH-DSS. There is a need to bring more actors from the private sector to join the HH-DSS message: Use capacity building and efficient communication for responsible use of fungicides in LB management!

SCALING STRATEGY

The approach is based on the assumption that a hand-held, tangible product, condensed and designed for easy dissemination has potential to be driven by public and private extension services to reach a high number of farmers.

MODEL FOR DISSEMINATION

1. Link technology to the institutional objectives of partners
2. Evaluate institutional readiness for adoption
3. Adaptation to local context in collaboration with partners
4. Disseminate results and raise awareness with partners
5. Invite public and private extension services to take joined ownership, and conduct validation with farmers
6. Seek private sector investment in commercial development under a license agreement with CIP

KEY PARTNERS FOR SCALING

Actors from the public and private sectors; NARI, agricultural extension service programs of the Ministries of Agriculture, NGOs, farmer associations, universities and agrochemical distributors and fabricators.

References

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