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SUMMARIZING 30 YEARS OF IMPLEMENTING REGIONAL IPM IN DECIDUOUS ORCHARDS IN ISRAEL

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Background: For more than three decades, efforts have been made in Israel to change the conventional pest control management in deciduous fruit trees to integrated pest management (IPM). It was based on promoting environmentally friendly crop protection activities in cultivated areas without increasing damages, while facing increasing frequency of extreme climatic events and conditions that encourage pests' population development. In parallel, the transition required developing of a strategy for effective area wide integrated pest management (AW-IPM interface), considering also the human factor (growers), that adds a complexity to the implementation process.

Keywords: *IPM, AWM, Mass trapping, attract and kill, precision pest control, action program, and monitoring, automatic monitoring traps, fruit flies, moths*

This presentation describes an Israeli regional project of deciduous fruit trees in Northern Israel, covering 8,500 Hectares and including more than 1,200 growers.

The goal: Engaging farmers in an AW-IPM project, based on reducing the use of environmentally and health toxic pesticides while preventing pest damages.

Methods: The AW-IPM strategy developed in Israel was formulated into an applied protocol, including the following elements:

Community based AW-IPM, combining a top-down regional administration, while pest management activities being carried out by the farmers themselves (bottom-up).

Regional cooperation between over 1,200 growers, managed by a professional team in order to provide continuous advice and build trust among farmers, and cooperation between all farmers-relevant organizations (XBC-Cross boundaries Collaborations).

Area wide promotion of agro technological control methods, such as mass trapping and mating disruption, ongoing regional monitoring and spraying with friendly materials only by actual necessity.

Precise pest control in sub-plots hot spots, including the use of drones.

Improving fruit flies and moths' adult population monitoring by using automatic monitoring tra

Use of field data management software and app, collecting continuously human (scouts) and sensor (automatic traps) data from various sources, analyzing and presenting it as a DSS tool for professional staff and growers

In addition, the protocol was supported by a study of common horticultural treatments (for fruit quality improving) effect on attraction and rejection of pests.

Following years long positive results in the regional management, it was decided to expand the AW-IPM interface (AW-IPM) also to management of other environmentally friendly agricultural practices on a regional basis, including prevention of soil erosion with the help of cover plants, and disposal of pruning remains and pesticides' plastic waste.

Conclusions and Insights: An analysis of the impact of the regional AW-IPM initiative, including an examination according to the SWOT model showed that the protocol described above led to a significant reduction in the use of toxic pesticides (also in the EIQ index), while no additional fruit damage was observed. The regional management team provides a comprehensive professional support framework of plant protection to growers, guiding them in the transition to a comprehensive culture of sustainable and environmentally friendly agriculture.