



Food and Agriculture
Organization of the
United Nations



International
Plant Protection
Convention

IPPC Webinar

How to use Systems Approach online tools

New IPPC Training Materials





Objective of the Systems Approach online tools

- Support development of integrated measures for managing pest risk in situations where single measures are insufficient.
- Assist NPPOs to build Systems Approach for pest risk management, as described in ISPM 14.
- Support new/continued market access by reducing pest risks to acceptable levels.
- **Involve** sector and build **strong phytosanitary security** in market access negotiations by providing a better **understanding** of the **cumulative effect of individual phytosanitary measures** applied at different points in the production chain.



Steps of Systems Approach online tools

- Step 1: Design Production/Pathway chain
- Step 2: Input background data to DSSA tool
- Step 3: List potential measures
- Step 4: Evaluate the measures
- Step 5: Involve interested parties into the process and develop acceptable systems approach
- Step 6: Use the result to built appropriately working Systems Approach

Sample trade case

- Exporting country: Israel
- Importing country: EU
- Commodity: Citrus L. fruits
- Quarantine pest: *Thaumatotibia leucotreta*

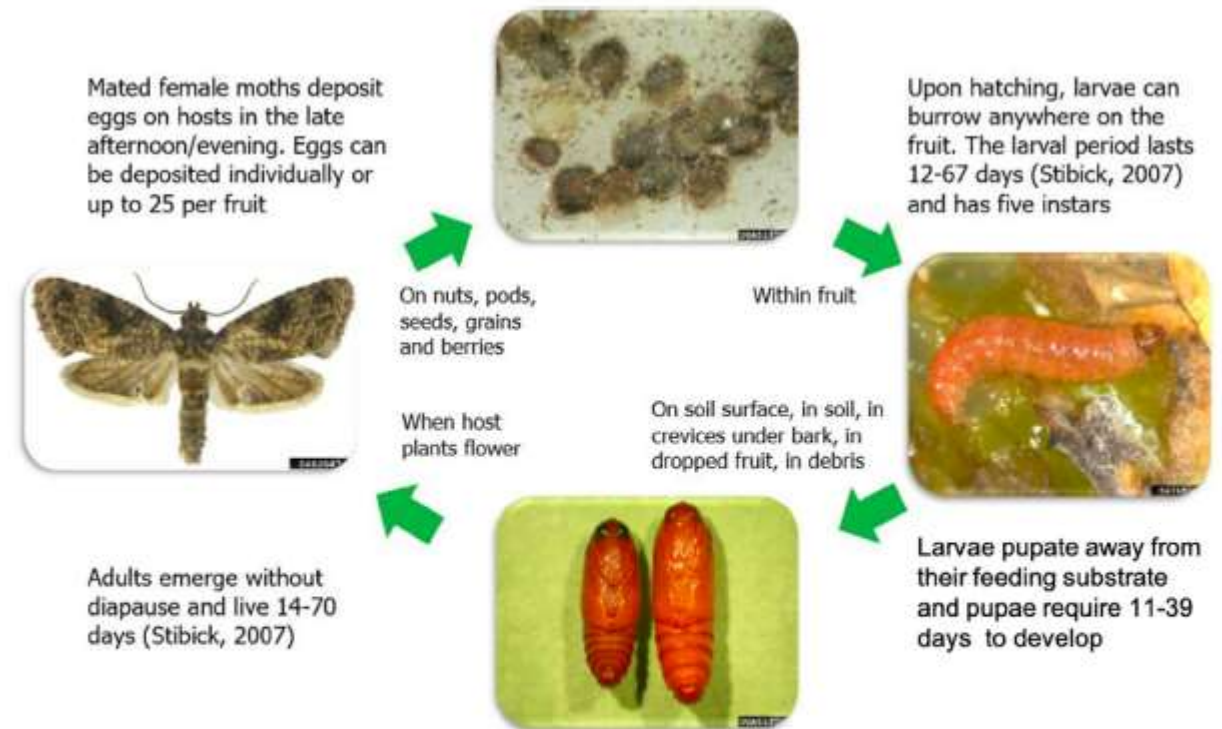
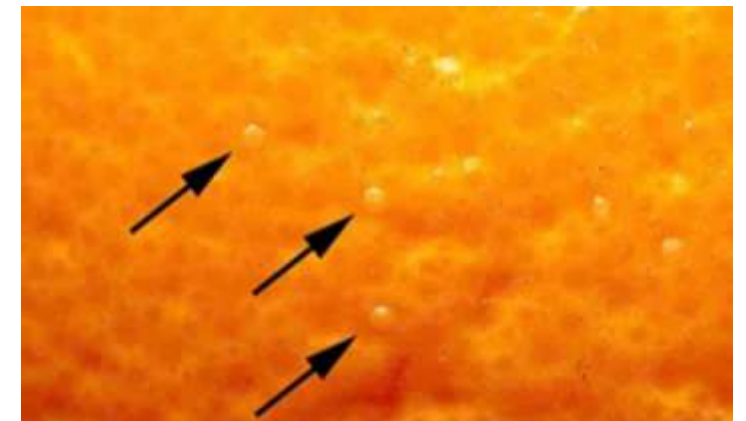
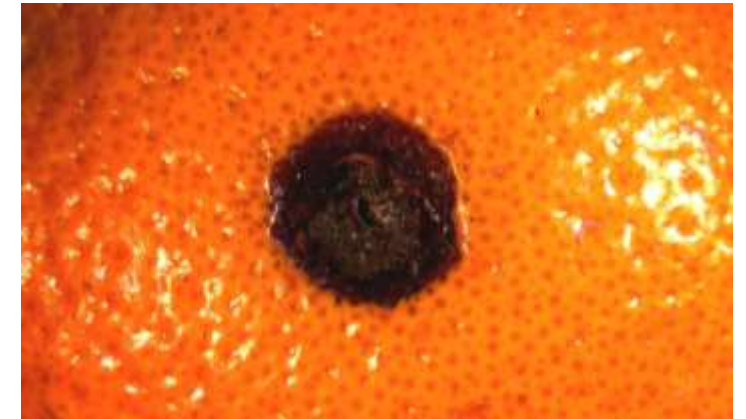


Figure 1: Life cycle of *Thaumatotibia leucotreta* (Sources: (top) JH Hofmeyr, Citrus Research International, Bugwood.org; (right) Marja van der Straten, NWA Plant Protection Service, Bugwood.org; (bottom) JH Hofmeyr, Citrus Research International, Bugwood.org; (left) Todd M Gilligan and Marc E Epstein, Tort AI: Tortricids of Agricultural Importance, USDA APHIS PPQ, Bugwood.org)

Reducing the pest risk: Israel trade case

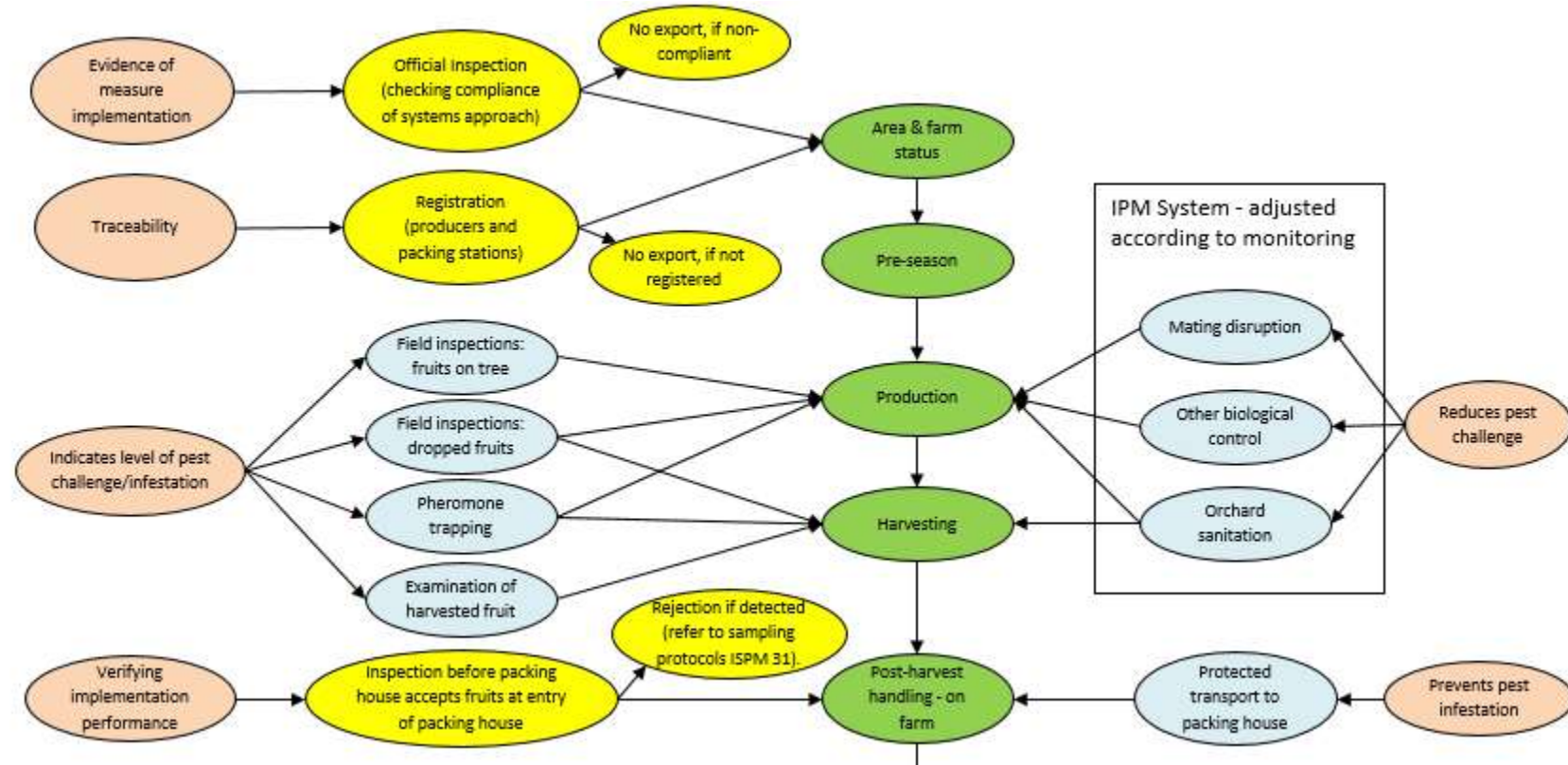
We first needed to understand the production systems and the phytosanitary measures in place and then identify where the system could be improved:

- Process Production/Pathway chain
- Evaluate the efficacy and acceptability of available measures
- Identify where additional measures could be applied to reduce the pest risk to acceptable levels



Production/Pathway Chain tool

- Excel tool to create Production Chain Diagrams
- To visualize entire production chain to show how to reduce pest risks by introducing Systems Approach as well as indicating all measures
- Current stage of production chain can be seen in relation to involved sector



SYSTEMS APPROACH ONLINE TOOLS

Decision Support for Systems Approach (DSSA) tool

- Excel-based tool that uses Visual Basic for Applications (VBA) macros
- Consists of three parts
 - Part A – Background information
 - Part B – Selection of Measures
 - Part C – Evaluation of Measures
- Choose between Export or Import versions of the tool



Part A: Background information (sample)

		Description	Comment
A2.05	How easy is it to detect the key organism(s) on the commodity / pathway? For example can you recognise the symptoms or signs on the sample?	Moderately easy	Not so easy in the beginning of development stage; easy later when symptoms - yellowish brown spots appears and on fallen ones; destructive sampling for mature larvae shall be done to find the pest, but it is possible to notice it without specific laboratory equipment although on fallen fruit or foliage difficult to detect since they are small, flat and in similar colour as the substrate.
A2.06	How easy is it to identify the key organism(s)? For example, is there an available, reliable, accurate technique that has been agreed?	Difficult	Available specific pheromone traps for specific pests; appropriate protocols explaining morphology and pest aspects and personnel experience and training (probably, if first pests confirmed by NPPO specialists as both - morphological and molecular identification are in place), knowledge by operators can be gained quickly to detect specific pest. Locations are important (where pest has been found), pest spread possibility shall be taken into account according to https://efsa.onlinelibrary.wiley.com/doi/epdf/10.2903/sp.efsa.2020.EN-1916 about identification risks. Problems with morphological identification that it can be done correctly by nonspecialist for adults, therefore it makes it more sophisticated.
A2.07	How well organised is the sector at risk in the importing country?	Very well organised	Good interception detection and notification system, quick early warning, developed outbreak system. Good laboratory system.
A2.08	Is there a way (current, feasible measures) to control or eradicate the regulated pest if it were to enter the importing country?	Yes	Appropriate legislation (under references page exact links to it) and its implementation in place for controls, interceptions and outbreaks.
A2.09	Are there mechanisms to help put in place measures across the sector?	yes	Protocols for improved monitoring, appropriate risk mitigation and suppression measures, inspections and examinations and supporting mechanisms, like registration and exclusion of it if necessary for export to EU.

A2. Conclusions on key factors relating to risk management measures:

Key factors for risk management measures are: the pest biology, specifics in its detection and how to improve it, risk mitigation and suppression measures, stakeholder appropriate involvement in the work and for system control NPPO inspector appropriate involvement, appropriate registration systems creation specifically for export to EU. EU import requirements are to implement systems approach. Specific improvements are suggested by EFSA.

Part B: Selection of Measures (sample)

TABLE B1. List of ALL POSSIBLE measures that could be used in the production chain

Area & farm status	Pre-season	Production	Harvesting	Post-harvest handling - on-farm	Post-harvest handling - consolidated	Export	Arrival at importing country
Registration (producers and packing stations)		Pheromone trapping	Pheromone trapping	Protected transport to packing house	Examination of harvested fruit during packaging	Official Inspection before export	Official Inspection at the point of entry in importing country (importing countries responsibility)
Official Inspection (checking compliance of systems approach)		Field inspections: fruits on tree	Examination of harvested fruit	Inspection before packing house accepts fruits at entry of packing house	Examination of harvested fruit after packaging		
		Field inspections: dropped fruits	Field inspections: dropped fruits				
		Orchard sanitation	Orchard sanitation				
		Mating disruption					
		Sterile insect technique					
		Attract and kill					
		Virus based products					
		Other biological control					
		Insecticide treatment					
Pest free area (stand alone measure)					Cold treatment (stand alone measure)		

Part C: Evaluation of Measures (sample)

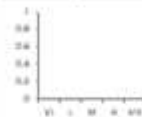
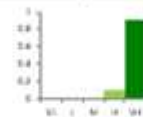
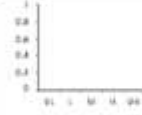
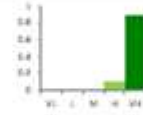
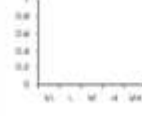

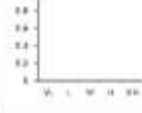
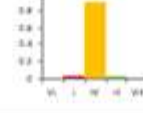
TABLE C1. Indicators of Measures (Pest risk reduction and Implementation standard)								Optional comments		
	Systems Approach measures available (from Part B)	Contribution to pest risk reduction of infestation in exported consignment			Implementation standard			Interactions with other measures	Comments	Objective of measure
		Maximum contribution to pest risk reduction achievable by the measure is:			Implementation standard of the measure in the field is:					
		Rating	Uncertainty	Graphic	Rating	Uncertainty	Graphic			
i	Registration (producers and packing stations)				Very high	Very low		Correlates well and have a great impact with implementation verification for systems approach	Crucial step for systems control	Traceability
ii	Official Inspection (checking compliance of systems approach)				Very high	Very low		All measures in Systems approach are related and gives added value.		Evidence of measure implementation
iii	Pheromone trapping				High	Low			Protocol shall be followed. Relates to spatial distribution, size, timing, etc.	Indicates level of pest challenge/infestation
iv	Field inspections: fruits on tree				Medium	Very low			Young pests may be unnoticeable and holes may be small at the beginning and without coloration. Protocol shall be followed.	Indicates level of pest challenge/infestation

TABLE C2. Indicators of Measures (Ability to verify effect of measures to that CP, Producer Acceptability, Sector acceptability, Societal acceptability)												
Systems Approach measures available (from Part B)	Ability to verify effect of measures to that CP			Producer acceptability			Sector acceptability			Societal acceptability		
	Ability to use the Control Point to adjust system is:			Acceptability of the measure to producers is:			Acceptability of the measure to the sector is:			Acceptability of the measure to society is:		
	Rating	Uncertainty	Graphic	Rating	Uncertainty	Graphic	Rating	Uncertainty	Graphic	Rating	Uncertainty	Graphic



Results: Israel case study

- Production / Pathway chain diagrams helped the exporting and importing NPPOs to visualize entire production chain
- All measures that could be applied to the production chain were identified and weakest points were improved
- The contribution of these individual measures to pest risk reduction was evaluated
- The acceptability of the measures to producers, the sector and society was considered
- Additional phytosanitary measures were integrated into the systems approach
- Trade was re-established

Conclusion

- Systems Approach online tools help to:
 - Engage NPPOs, producers, and others in the sector in the process to develop systems approach in support of market access
 - Highlight the importance of applying integrated measures in a systems approach to reduce pest risk and support market access

Coming Together Is A Beginning. Working Together Builds Success.

Contact a facilitator in your region for help using these tools:

<https://www.ippc.int/en/core-activities/capacity-development/phytosanitary-system/systems-approach/beyond-compliance-facilitators/#a>



Africa (4)	+
Asia (1)	+
Europe (1)	+
Latin America and Caribbean (4)	+
Near East (2)	+



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Thank you

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