

Phytosanitary treatments for *Ceratitis capitata* (Wiedemann) (Diptera: Tephritidae) and other fruit flies important to Near East Region.

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OUTLINE

- SOME PHYTOSANITARY ISSUES
- PHYTOSANITARY TREATMENTS

Economic impact

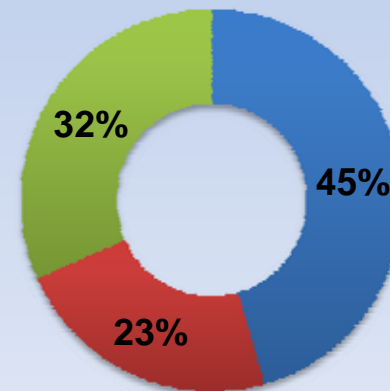
- Fruit flies are important pests for the Near East Region because they cause damage and **restrict market access** for fruits and vegetables
- The Mediterranean fruit fly (medfly), *Ceratitis capitata* is one **of the most important** insect pests of fruit commodities world wide
- The effect on export was not only International but also inter-regional. **Sudan mango exports were banned by Jordan Syria and Lebanon after the detection of *C. cosyra* and *B. invadens***
- Lately the quantity of exported Sudanese mango crop dropped dramatically from 10,000 tons in the year 2000 to less than 500 tons in 2010

Obligations of countries under the IPPC

- **no comprehensive list of the fruit flies for Near East Region**
- **Not complying with the most important and key obligation is surveillance (ISPM6)**
- **Implementation Review and Support System (IRSS) Baseline review of the Implementation of ISPM6**

What is the total annual investment currently being made by the NPPO to conduct Pest Surveillance (USD)?

- Under 499,000USD
- Over 500,000USD
- No response



DOMINO EFFECT

surveillance



pest listing



pest categorisation



pest risk analysis



scientific justification for
phytosanitary measures

PEST RISK MANAGEMENT OPTIONS

- Pre-harvest (mass trapping, SIT etc)
- Most of the pre-harvest phytosanitary measures except the ones resulting in pest free areas do not guarantee pest freedom of consignments
- Post-harvest
- System approach of post harvest (ISPM For the development of a systems approach for fruit flies the relationship between host, target fruit fly species and the area of production of the host fruits and vegetables should be considered. The options for pest risk management measures should be determined by means of pest risk analysis (PRA).
- (phytosanitary treatment)

phytosanitary treatments were developed by countries mostly against the med fly (Ceratitis capitata).

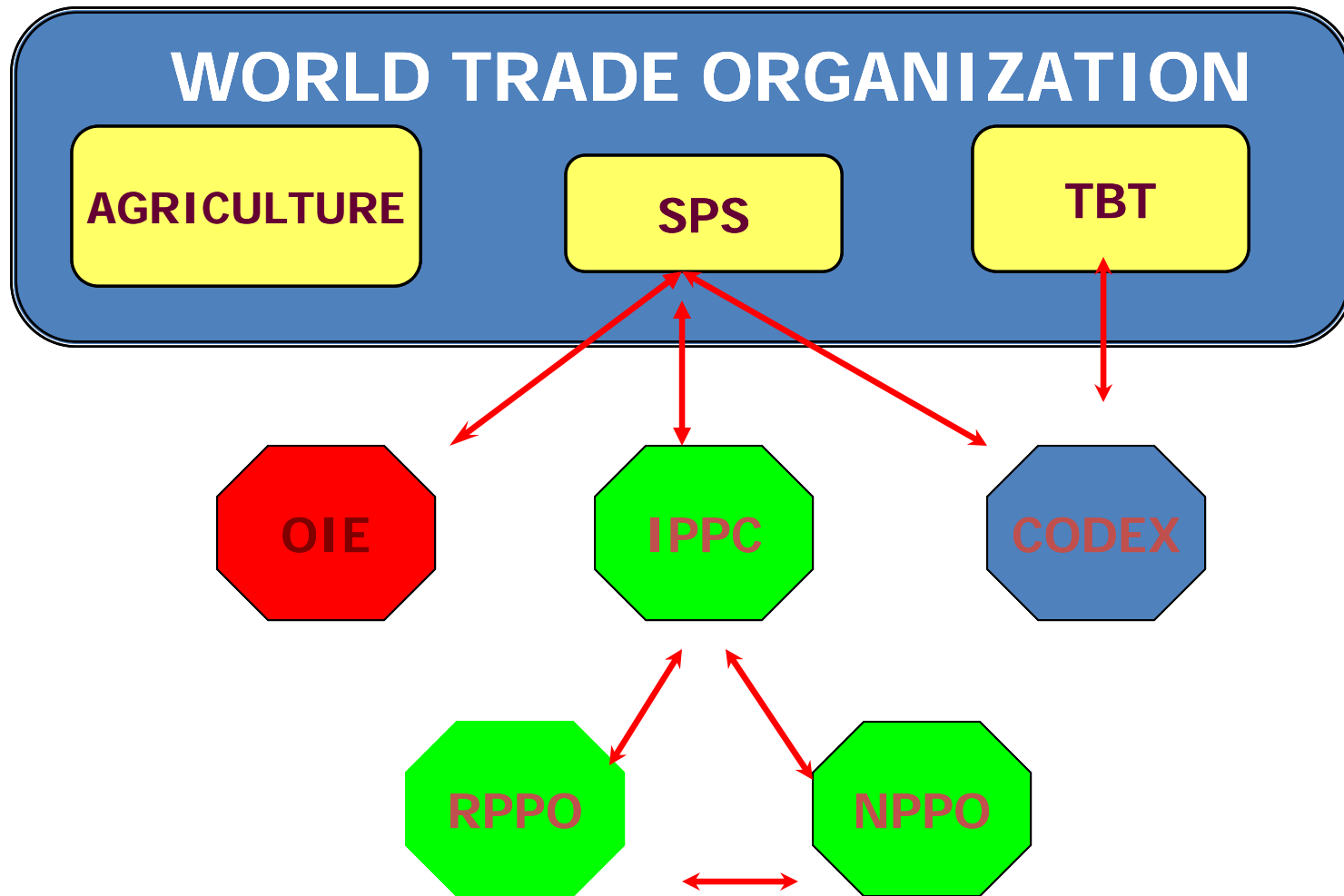
Market	<i>Ceratitis capitata</i>	<i>Bactrocera zonata</i>	<i>Bactrocera cucurbitae</i>	<i>Bactrocera Invadens</i> <i>Ceratitis cosyra</i>
United states	in USA (California and Florida) regulated	absent	established in Hawaii, periodic interceptions in other states	APHIS (2009) imposed new import requirements on certain fruits and vegetables
Japan	Not established	absent	Established and eradicated	Absent
European union	recommended for regulation by EPPO	absent	Absent	Absent
Australia and New Zealand	species had been established but eradicated	absent	Mistaken records	Absent

- *Many phytosanitary treatments were developed by countries mostly against the med fly (Ceratitis capitata)*
- (USDA)'s Animal and Plant Health Inspection Service (APHIS) has standardized cold for various fruit fly species, regardless of the fruit type and cultivar.
- Generic Cold treatments established by APHIS (2006) include T107-a for *C. capitata* at 1.11 °C, 1.67°C and 2.22°C for the period of 14, 16 and 18 days respectively and T107-a-1 for *C. capitata* and *Anastrepha spp.* other than *A. ludens*, which is one day longer than the T107-a.
- Japan requires each country to develop its own treatments for all the varieties proposed for export. oranges from Spain at 2oC for 17 days, from Israel at 0.5oC for 14 days and at 1.5oC for 16 days, from Australia at 1oC for 16 days, from South Africa at –0.6oC for 12 days and for lemons from Spain at 2oC for 16 days, from Australia at 1oC for 14 days and from South Africa the same schedule as for oranges.
- *EPPO Citrus or Prunus* should be treated by an appropriate method, e.g. in transit by cold treatment (e.g. 10, 11, 12, 14, 15 days at 0.0, 0.6, 1.1, 1.7 or 2.2°C, respectively,)

HARMONIZATION OF PHYTOSANITARY TREATMENTS

- The purpose of harmonizing phytosanitary treatments is to support efficient phytosanitary measures in a wide range of circumstances and to enhance the mutual recognition of treatment efficacy by NPPOs, which may also facilitate trade.
- Furthermore, these treatment schedules should aid the development of expertise and technical cooperation. NPPOs are not obliged to use these treatments and may use other phytosanitary treatments for treating the same regulated pests or regulated articles.

GLOBAL SYSTEM FOR AGRI-FOOD TRADE



Standard setting process

Standards Committee , Commission on phytosanitary Measures (CPM), NPPOs and **Technical Panels**

- Technical panel on forest quarantine (TPFQ)
 - Technical panel on diagnostic protocols (TPDP)
 - **Technical panel on phytosanitary treatments (TPPT)**
 - **Technical panel on fruit flies (TPFF)**
 - Technical panel on glossary (TPG)
- Most of 36 adopted standards and 14 treatments are related to fruit fly management (4 specific)(ippc.int adopted standards)
 - Nine IRRADIATION TREATMENTS for different fruit flies
 - (ISPM 28 Phytosanitary Treatments No. 7: Irradiation treatment for fruit flies of the family Tephritidae). This treatment applies to the irradiation of fruits and vegetables at 150 Gy minimum absorbed dose to prevent the emergence of adults of fruit flies at the stated efficacy.
 - An irradiation treatment for *Ceratitis capitata* was also developed and approved as the phytosanitary treatment No. 14 (ISPM 28: Phytosanitary Treatments: Irradiation treatment for *C. capitata*).

Choice of phytosanitary treatments

- TYPE OF FRUIT, FEASIBILITY OF TREATMENT and COST
- Australian company costs of some phytosanitary treatments are:
- hot water: \$250/ton;
- **vapor heat** treatment \$200-250/ton;
- **cold treatment**: \$46-600/ton;
- controlled atmospheres: \$50-600/ton;
- irradiation: \$25-50/ton
- an additional US \$0.40 per kilo when Philippines changed from vapour heat treatment to a modified EHWT to comply with Japan phytosanitary requirements



General Requirements for Phytosanitary Treatments

The NPPO or RPPO should ensure that phytosanitary treatments are:

- effective in **killing**, **inactivating**, **removing** target pests, rendering pests **infertile**/incapable of further **development** or devitalizing pests associated with the target commodity(ies) or regulated article(s).
- The level of efficacy of the treatment should be stated (**quantified or expressed statistically**).
- Where statistical data is unavailable, other evidence that supports the efficacy (i.e. historical and/or practical information/experience) should be provided.

Phytosanitary treatments

- well documented and show that the efficacy data has been generated using appropriate experimentation procedures, including an appropriate experimental design.
- The data supporting the treatment should be **verifiable, reproducible and based on statistically sound methods or on established and accepted international practice and, where possible, it should have been published in a peer-reviewed journal.**
- feasible and applicable for use in international trade

Confidence level of treatment

- **Schedule 1: 2 °C for 18 days** , efficacy and confidence level (De Lima *et al.*, 2007) for or cultivar 'Navel' the efficacy is ED99.9982 at the 95% confidence level and for cultivar 'Valencia' the efficacy is ED99.9979 at the 95% confidence level.
- **Schedule 2: 3 °C for 20 days** Efficacy and confidence level (De Lima *et al.*, 2007): For cultivar 'Navel' the efficacy is ED99.9980 at the 95% confidence level. For cultivar 'Valencia' the efficacy is ED99.9979 at the 95% confidence level.
- **Schedule 3: 2 °C for 21 days** For cultivars 'Washington Navel', 'Salustiana', 'Valencia' and 'Lue Gim Gong' the efficacy is ED99.9917 at the 95% confidence level (Anon., 2007).
- The commodity must reach the treatment temperature before treatment commences. The commodity temperature should be monitored and should not exceed the stated level.

NPPO Obligations

- Do basic research Research
- Phytosanitary treatments has to performed in close collaboration with the phytosaitary services or NPPO'S.
- The treatment facilities should be accredited by the NPPO of the exporting country and frequently audited as the responsibility of compliance with the phytosanitary import requirements of other countries and issue phytosanitary certificates NPPO.
- In case of non-compliance notification will be sent to the NPPO
- tractability of consignments
- TransparencyEmerergency measures until risk analysis
- Information exchange



More obligations of NPPO

- Prevention of introduction and spread of new fruit flies through a proper import regulatory system
- Establishment of a Certification system for:
 1. Establishment, maintenance and documentation and FFPFA and FFALPP
 2. Accreditation and auditing of phytosanitary treatments facilities.
 3. Certification of products

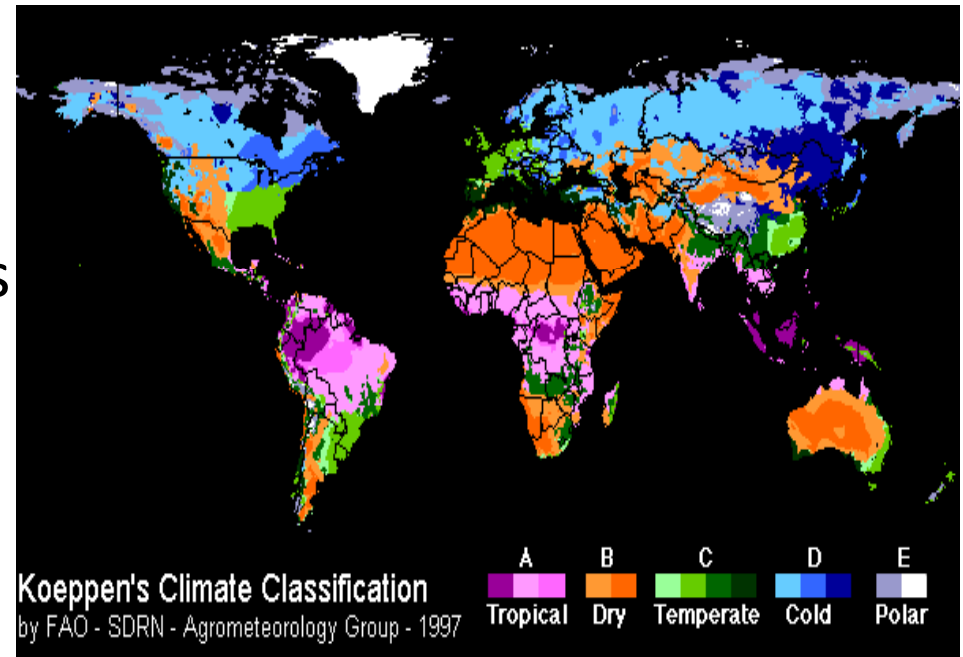
recommendations



- Strengthening of phytosanitary services of the region
- Regional Cooperation in control of fruit flies the example of *B. invadens*
- Raise policy makers awareness

recommendations

- Threats from re-exported fruits from Saudi Arabia and Dubai
- Phytosanitary risk analysis
- Greece findings
- Other issues
- NEPPO
- Online PRA training
- STDF FUNDING



 **International Plant Protection Convention**
Protecting the world's plant resources from pests

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Protecting the world's plant resources from pests



IPPC - the International Plant Protection Convention - is an international agreement on plant health with **173 current signatories**. It aims to protect cultivated and wild plants by preventing the introduction and spread of pests. The Secretariat of the IPPC is provided by the **Food and Agriculture Organization of the United Nations**. [MORE](#)



Emerald ash borer - *Agrilus planipennis*
- Judy King, MSU, Michigan.

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