

Better Training for Safer Food *Initiative*

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Effective containment



From ISPM 05 (Glossary of phytosanitary terms)



containment*

Application of phytosanitary measures in and around an infested area **to prevent spread of a pest**

[FAO, 1995]

eradication*

Application of phytosanitary measures **to eliminate** a pest from an area

[FAO, 1990; revised FAO, 1995; formerly eradicate]



Exotic harmful organisms

- Invasive species, alien species, exotic pests, non-native species, are the common names that describes animals, microbes, plant pathogens (not plant pathology!), or harmful plants there are not native in a territory.
- These living species, considered non native and **invasive**, cause problems because they invade and **develop uncontrolled growth and spread (Outbreaks)** with economic and environmental damages.

A world on the move....exchanging “gifts”





European
Commission

Difficulties in controlling a ...

BT



Biological factors out of our control

- Favorable environmental conditions
- Rapid adaptation to the environment
- Availability of host plants
- Low natural and biological control



Factors we can control

- Lack of knowledge of the biological cycle and the behaviour
- Identification mistakes
- Wrong approach to control
- Lack of approved active ingredients
- Problems of introduction for exotic organism for biological control
- Movement of plants and produce

Control of a plant disease or a phytophagous attack (infestation).....

**Perfect control is rare, but profitable
control (by different methods) is quite
possible.**

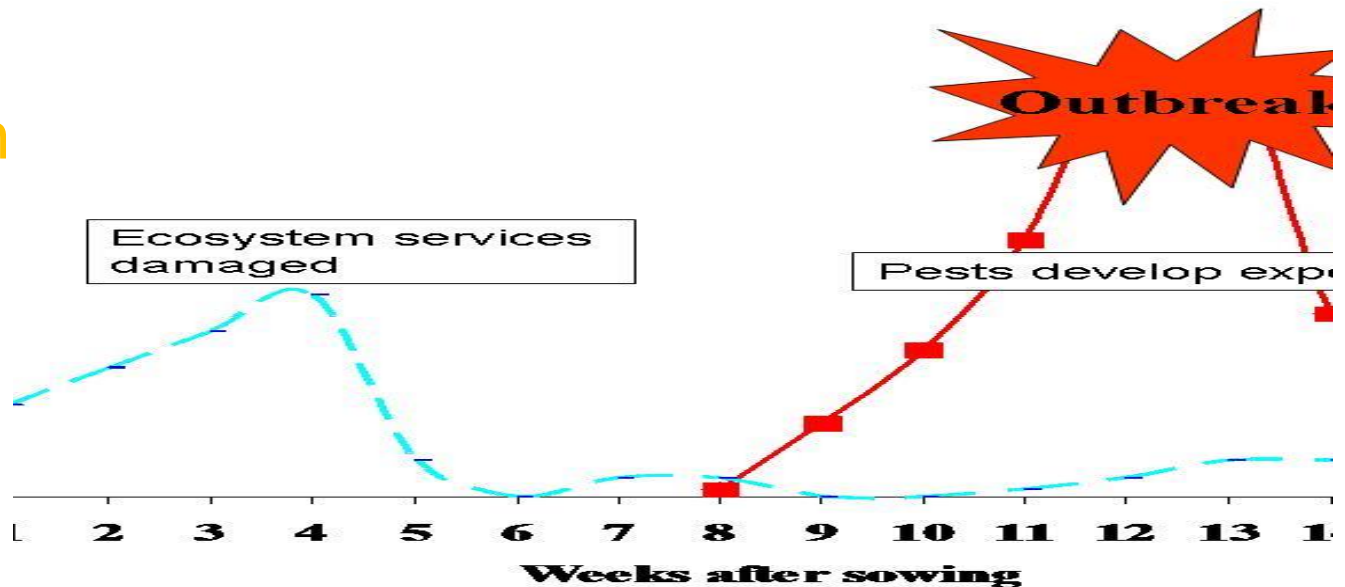
Principles of control

- Harmful organism's control means reduction of damage.
- Perfect and absolute control is rare
- Profitable control, when the increased yield more than covers the cost of chemicals and labour, is quite possible
- Environmental sustainability: a significant factor.
- Different point of view about: **DAMAGE**



The 5 fundamental principles of control

- Exclusion
- Eradication
- Protection
- Resistance
- Therapy



Exclusion

- Preventing the entrance and establishment of pathogens in uninfested nurseries, states, or countries.
- For states and countries, exclusion means quarantine controls, prohibition by law.
- Sometimes restricted entry of nursery stock is allowed, the plants to be grown in isolation and inspected for 1 or 2 years before distribution is permitted.

Eradication

- **Elimination** of a pest or pathogen once it has become established on a plant or in a garden.

It can be accomplished by

- Removal of diseased specimens, or parts
- Treatment to kill the pest or pathogen



Protection

- Interposition of some **protective barrier** between the susceptible host and the pest or pathogen, e.g. erection of a windbreak or other mechanical barrier.



Therapy

- Control by inoculating or treating the plant with something that will inactivate the pathogen.
- Chemotherapy.

Resistance

- Control by the development of resistant varieties.
- Resistant varieties are as old as time.

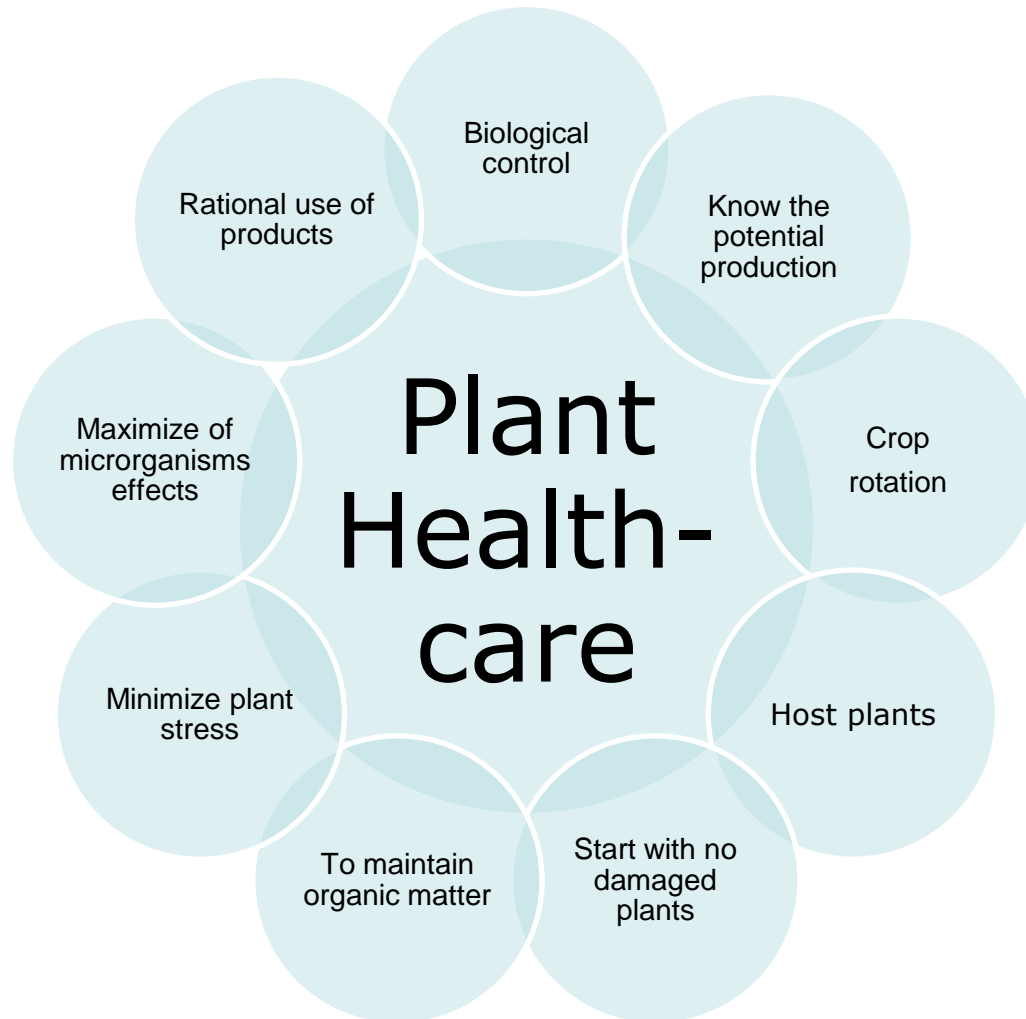
Is not often the only solution!

**Plant
Health**

Use of
plant
protection
products

But...

The goal of Integrated Pest Management: Plant Healthcare



Some Italian experiences of outbreak management (Case studies)

- The history of introduction, spread and management of *Tuta absoluta*, Red palm weevil, Chesnut gall wasp, and (the latest) *Aromia bungii*.
- Analysis and comments



The Italian experiences of outbreaks management: Tuta absoluta (2010)



- ✓ No good use of pesticide: timing and “place”
- ✓ High number of treatments without good results
- ✓ High environment impact: fruits and ecosystem
- ✓ Poor knowledge about the evolution of infestation
- ✓ Resistance!





The Red Palm Weevil (*Rhynchophorus ferrugineus*) history

- Introduction by infested palms from Egypt.
- Outbreaks and first finding in 2005 – 2006.
- Eradication efforts during 2005 – 2009.
- First attempts to fight the pest.
 - Some successful intervention with chemicals
 - Study on behaviour and biology in our areas.
 - Considering more factors and application of different active ingredients: nematodes, microwaves, fungus,
- Endo-therapy and tree surgery.
- An IPM approach!



EU legislation: is on Time?

- Evolution and some critical points.
- In the past the Commission has been slow to introduce emergency measures for pests – pests well established before measures arrive
- There is also now an understanding that in some cases eradication is simply not possible and a containment policy should be adopted immediately
- See the **RPW case** or, actually, the approach against *Xylella fastidiosa*, where we just speak of containment and no more only eradication.

When and under which circumstances, is containment the only option?



How to change the approach from eradication to containment - and why?

Level of spreading of harmful organism and hosts

Possibility to control with some measures: i.e. treatments

Equipment (Measures), people and money.



Change and revision of EU phytosanitary legislation and measures

Change and revision of EU phytosanitary legislation and measures

**COMMISSION DECISION
of 25 May 2007 COMMISSION DECISION
of 25 May 2007 on emergency measures to prevent the introduction into and the spread within the
Community of
Rhynchophorus ferrugineus (Olivier) on emergency measures to prevent the introduction into and the spread
within the Community of
Rhynchophorus ferrugineus (Olivier)**

**Annex II:
measures in demarcated areas**

**The official measures referred to in Article 6 to be taken in the demarcated areas,
shall include at least the following:**

- (a) appropriate measures aiming at eradicating the specified organism;**
- (b) intensive monitoring for the presence of the specified organism by appropriate inspections.**

Change and revision of EU phytosanitary legislation and measures

**COMMISSION DECISION of 17 August 2010
amending Decision 2007/365/EC as regards the susceptible plants and the measures to be taken in cases
where *Rhynchophorus ferrugineus* (Olivier)
is detected**

Annex:

3. Establishment and implementation of action plans In the demarcated areas referred to in Article 6(1)(a) for which the results of the annual surveys over at least 3 years show that the eradication of the specified organism within one additional year is not possible, the action plan and the implementation thereof shall first focus on containing and suppressing the specified organism in the infested zone, while keeping eradication as the longer-term objective.

The Oriental Chestnut Gall Wasp (*Dryocosmus kuriphilus*) history

- Introduction by infested plants of chestnut from China in 2002
- Outbreaks and first finding in 2005-2008
- Eradication attempts during these years
- First attempts to fight the pest.
- Study on behaviour and biology in our areas.
- Considering more factors and application of different active ingredients
- Biological control: introduction of *Torymus sinensis*
- With a good success!
- An IPM approach!





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Who is a plant inspector?

Where and when we study for it.

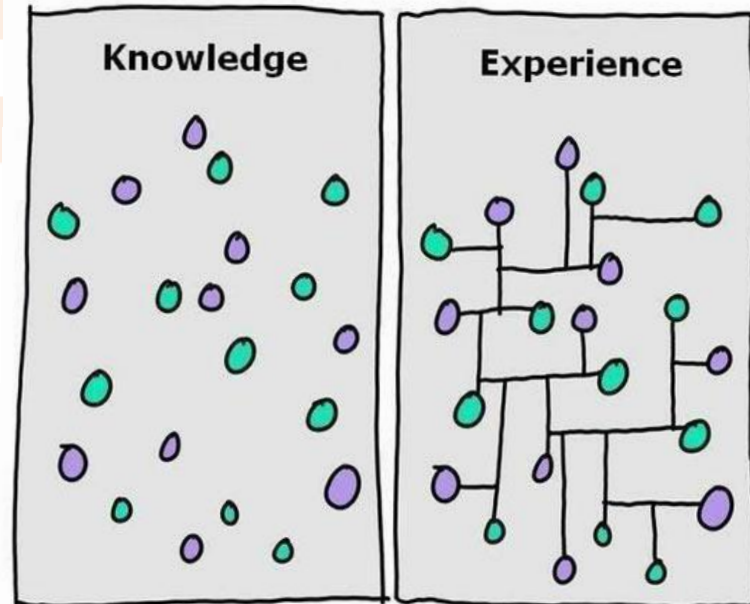
A person graduate in Agricultural science.

Possibly specializing in plant pathology

With Knowledge and experience in field

Education and training are fundamental

An Italian Ministerial WG for decision to recruit new human resources as plant inspectors





Thanks for your kind attention

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Better Training for Safer Food
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The Journey to Truth is an Experience!