



# Opportunities for Biocontrol-based IPM

**Karel J.F. Bolckmans**

Director Global R&D and Production



ABIM

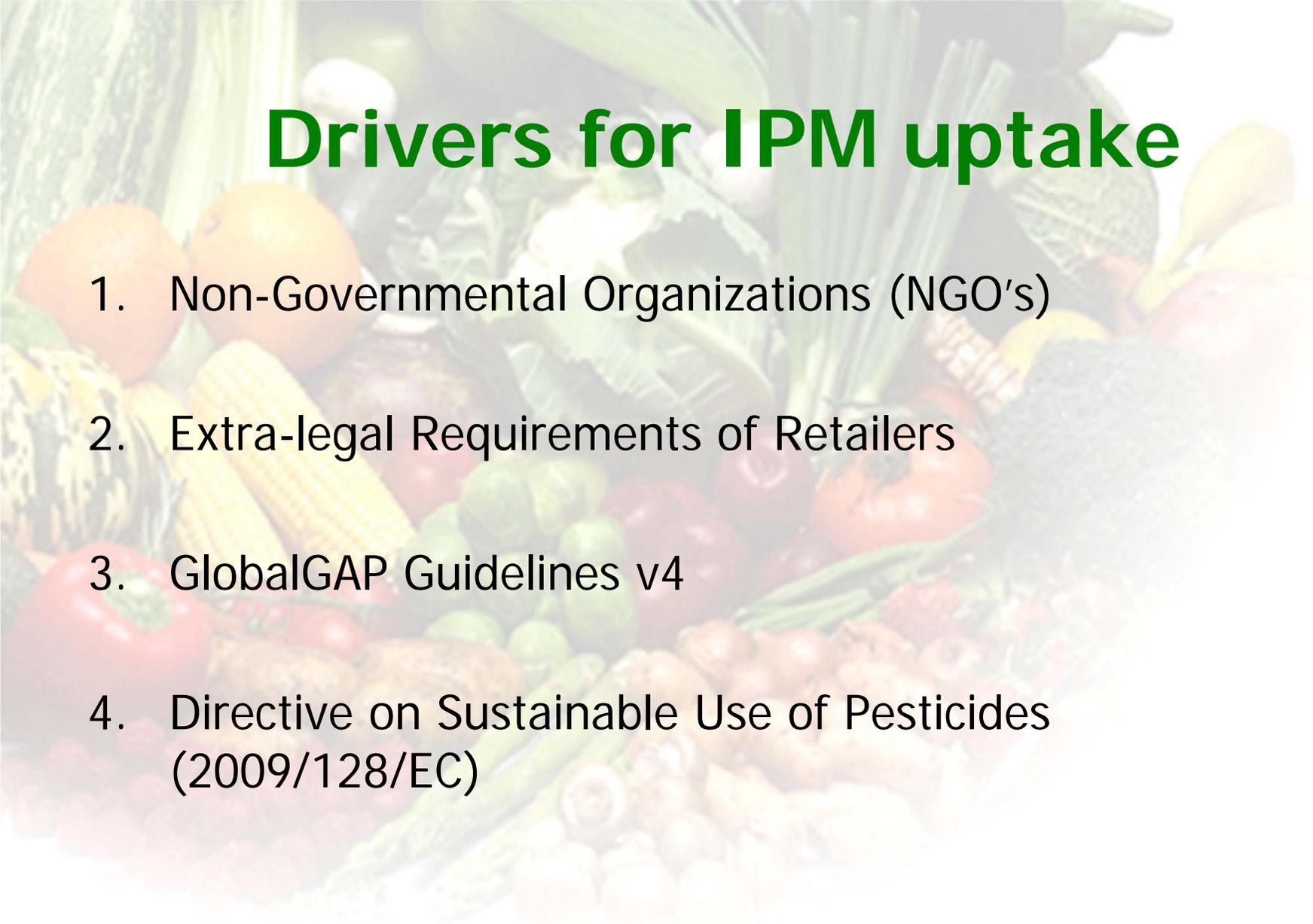
Luzern, October 25<sup>th</sup>, 2010



# IBMA's Objectives

Statutes, Article 6. The objectives of IBMA are:

- To **exchange information** amongst members
- To **represent** members in talks with officials and international organizations
- To **promote** safety, standards and quality control
- To **promote** biological and integrated plant protection, animal health and public hygiene methods
- To use the **expertise** of its members and set up expert groups concerned with sustainable plant protection and public health
- To **cooperate** with other organizations promoting quality food production, environmental and public health
- To raise and provide **funds** for the commercial implementation of biocontrol and sustainable methods of pest control
- Any other objective decided in the interest of the members as decided by the General Assembly



# Drivers for IPM uptake

1. Non-Governmental Organizations (NGO's)
2. Extra-legal Requirements of Retailers
3. GlobalGAP Guidelines v4
4. Directive on Sustainable Use of Pesticides (2009/128/EC)

# NGO's : Wake-up call

- Greenpeace Germany Report
  1. MRL exceedances
  2. Illegal pesticides
- Integrity and Reliability of (GlobalGAP) certificate : *retailers without a real QC/QA Department discovered that they could not blindly rely on the GlobalGAP certificate.*
- *"Weet wat je eet"*
- Pesticide Action Network (PAN)
- ...





# Challenging dogma's

*"If the only tool you have (know) is a hammer, every problem looks like a nail"*



# Restoring Integrity

- GlobalGAP SC Fruit & Vegetables created the **IPM Working Group** : IPM to help to reduce pesticide usage in order to assure Food Safety.
- **Retailers didn't wait for GlobalGAP**
  - Extra-legal requirements to stay out of the danger zone.
  - Reinforcing QC/QA departments. More residu testing.
  - Closer collaboration with producers.
  - Stimulate R&D.



# Retailers taking the lead with extra-legal requirements

## Management by Objectives

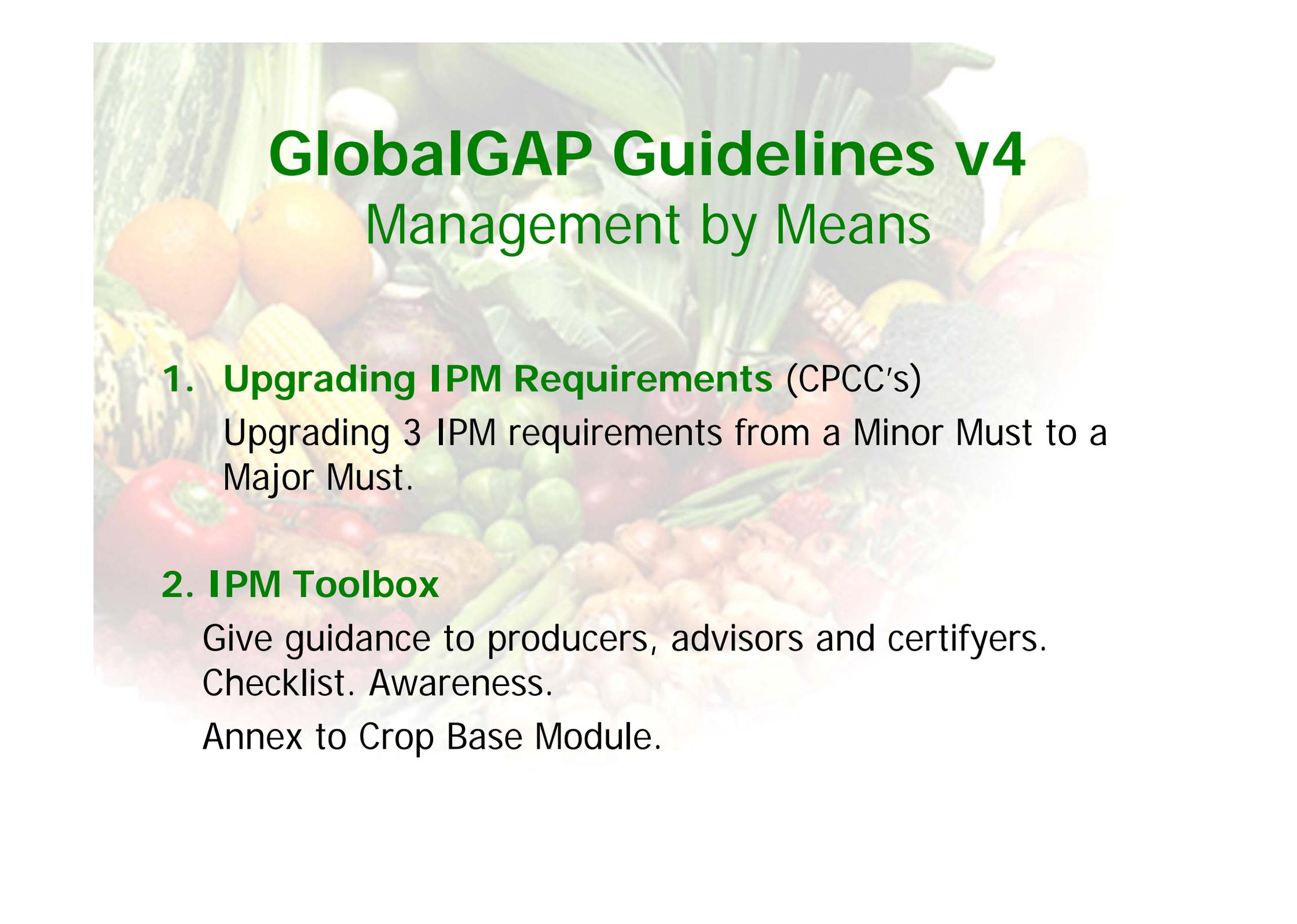
1. Safety margin : x% below MRL
2. Adding up residu's from the same group
3. Black listed pesticides
4. Maximum number of active ingredients

⇒ IPM has become the only way out !

# Integrated Pest Management

“A **system** that keeps harmful organisms below the economic damage level based on **ecologically, economically and toxicologically acceptable methods**, taking into account the specific ecology of crops as well as harmful organisms.” (IOBC, 1973)

- *strategy, systems approach*
- uses integrated combination of different *tactics* to :
  - **prevent** (hygiene, exclusion, ...) and
  - **manage** (mechanical, biological, chemical, cultural, ...) populations of harmful organisms.
- chemical control = **last** resort
- biocontrol is part of IPM, alongside other non-chemical methods (IPM is more than only “products” !)



# **GlobalGAP Guidelines v4**

## **Management by Means**

### **1. Upgrading IPM Requirements (CPC's)**

Upgrading 3 IPM requirements from a Minor Must to a Major Must.

### **2. IPM Toolbox**

Give guidance to producers, advisors and certifiers.  
Checklist. Awareness.

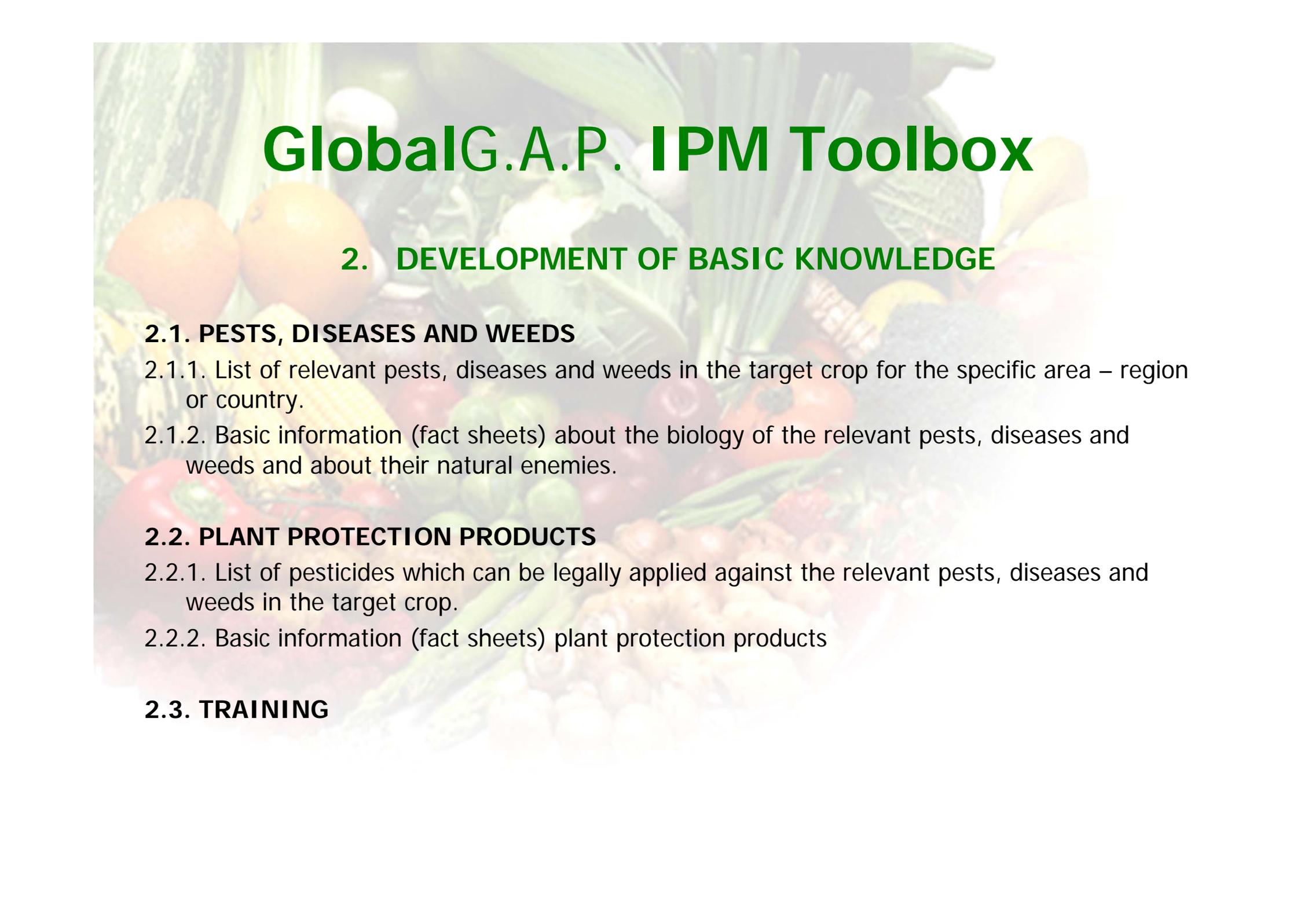
Annex to Crop Base Module.

CB . 7 . 1	Has assistance with implementation of IPM systems been obtained through <b>training or advice</b> ?	The technically responsible person on the farm has received formal documented training and / or the external technical IPM consultant can demonstrate their technical qualifications.	<b>Minor Must</b>
CB . 7 . 2	Can the producer show evidence of implementation of at least one activity that falls in the category of " <b>Prevention</b> "?	The producer can show evidence of implementing <b>at least one activity</b> that includes the adoption of cultivation methods that could reduce the incidence and intensity of pest attacks, thereby reducing the need for intervention.	<b>Major Must</b>
CB . 7 . 3	Can the producer show evidence of implementation of at least one activity that falls in the category of " <b>Observation and Monitoring</b> "?	The producer can show evidence of implementing <b>at least one activity</b> that will determine when, and to what extent, pests and their natural enemies are present, and using this information to plan what pest management techniques are required.	<b>Major Must</b>
CB . 7 . 4	Can the producer show evidence of implementation of at least one activity that falls in the category of " <b>Intervention</b> "?	The producer show evidence that in situations where pest attack adversely affects the economic value of a crop, intervention with specific pest control methods will take place. <b>Where possible, non-chemical approaches must be considered.</b>	<b>Major Must</b>
<del>CB . 7 . 5</del>	<del>Where plant protection products have been used, has protection been achieved with the appropriate <b>minimum input</b>?</del>	<del>All plant protection product inputs are documented and include written justifications. No N/A. =&gt; covered in the PPP use section</del>	<del>Minor Must</del>
CB . 7 . 6	Have <b>anti-resistance</b> , label <b>and/or other</b> recommendations been followed to maintain the effectiveness of available plant protection products?	When the level of a pest, disease or weed requires repeated controls in the crops, there is evidence that anti-resistance recommendations (where legal and effective alternatives are available) are followed <b>if specified by the product label.</b>	<b>Minor Must</b>

# GlobalG.A.P. IPM Toolbox

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# GlobalG.A.P. IPM Toolbox

## 2. DEVELOPMENT OF BASIC KNOWLEDGE

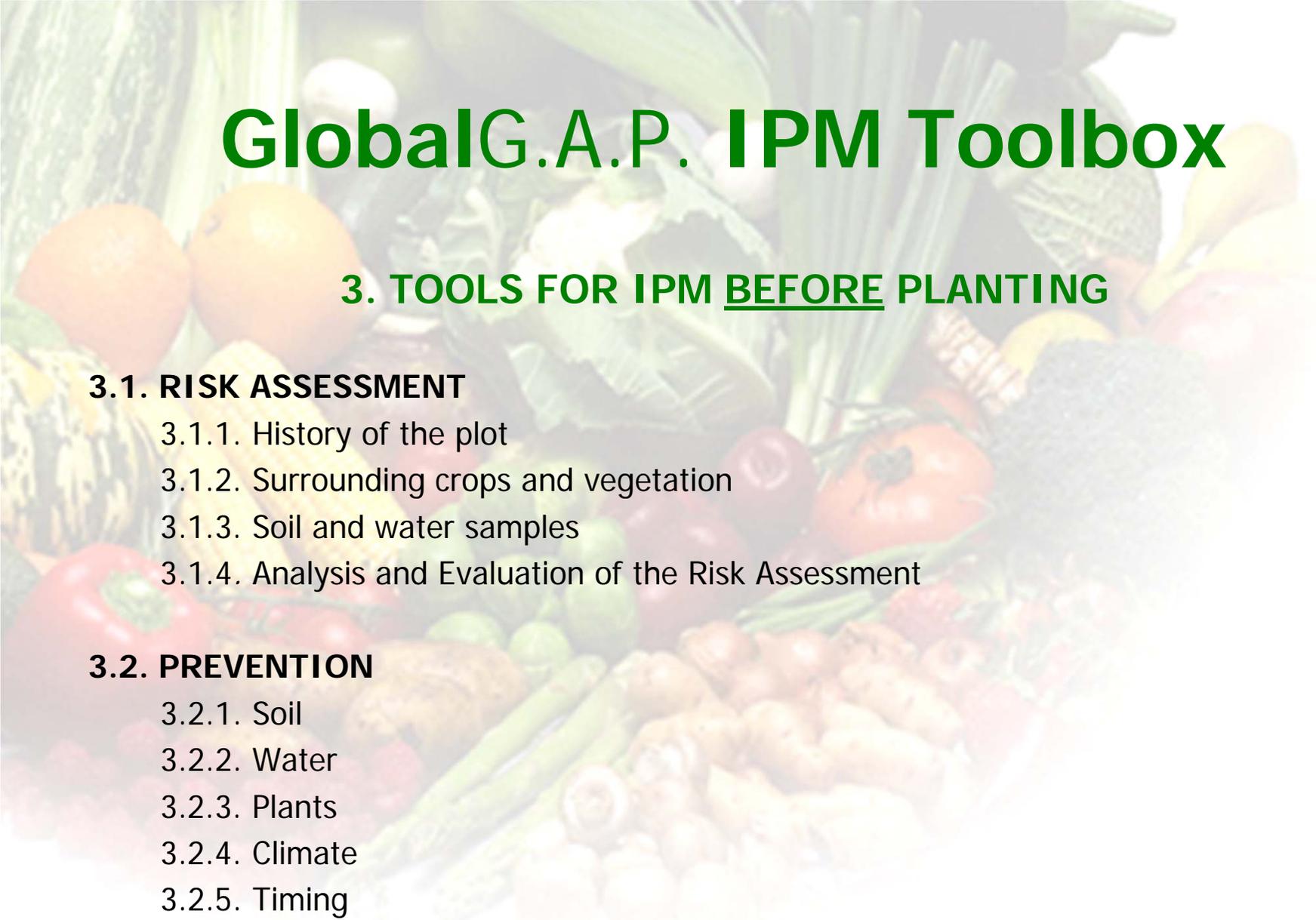
### 2.1. PESTS, DISEASES AND WEEDS

- 2.1.1. List of relevant pests, diseases and weeds in the target crop for the specific area – region or country.
- 2.1.2. Basic information (fact sheets) about the biology of the relevant pests, diseases and weeds and about their natural enemies.

### 2.2. PLANT PROTECTION PRODUCTS

- 2.2.1. List of pesticides which can be legally applied against the relevant pests, diseases and weeds in the target crop.
- 2.2.2. Basic information (fact sheets) plant protection products

### 2.3. TRAINING



# GlobalG.A.P. IPM Toolbox

## 3. TOOLS FOR IPM BEFORE PLANTING

### 3.1. RISK ASSESSMENT

- 3.1.1. History of the plot
- 3.1.2. Surrounding crops and vegetation
- 3.1.3. Soil and water samples
- 3.1.4. Analysis and Evaluation of the Risk Assessment

### 3.2. PREVENTION

- 3.2.1. Soil
- 3.2.2. Water
- 3.2.3. Plants
- 3.2.4. Climate
- 3.2.5. Timing
- 3.2.6. Location, plot selection

# GlobalG.A.P. IPM Toolbox

## 4. TOOLS FOR IPM DURING CROPPING

### 4.1. PREVENTION

#### 4.1.1. Cleanliness of the farm (Hygiene and Sanitation)

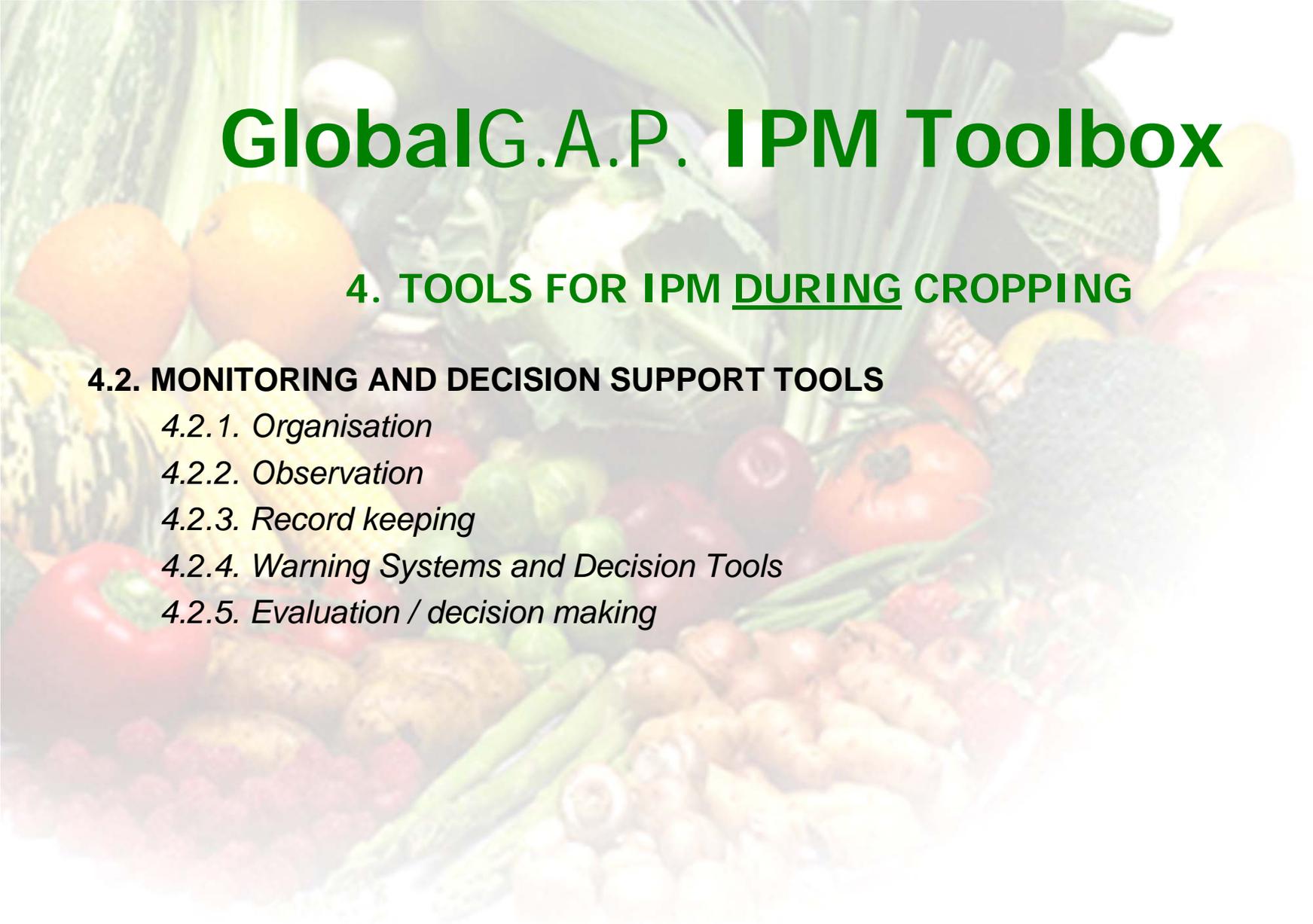
- Prevent transmission of pests, diseases and weeds by **vectors**
- Prevent transmission of pests, diseases and weeds by **people**
- Prevent transmission of pests, disease and weeds by **equipment** or **materials**
- Prevent transmission of pests, diseases and weeds by managing **crop residues**
- Prevent **pesticide drift** from neighbouring plots.

#### 4.1.2 .Cultural and Technical Measures

- Optimal crop care (fertilization, irrigation ,etc.)
- Canopy management and micro-climate
- Cropping system
- Exclusion techniques (in protected crops)
- Mulching
- Other technical measures

#### 4.1.3. Conservation Biological Control

- Measures to increase populations of natural enemies and pollinators in and around the crop
- Provide nesting places for predatory birds to control rodents.
- Prevent population reduction of natural enemies by using pesticides.



# GlobalG.A.P. IPM Toolbox

## 4. TOOLS FOR IPM DURING CROPPING

### 4.2. MONITORING AND DECISION SUPPORT TOOLS

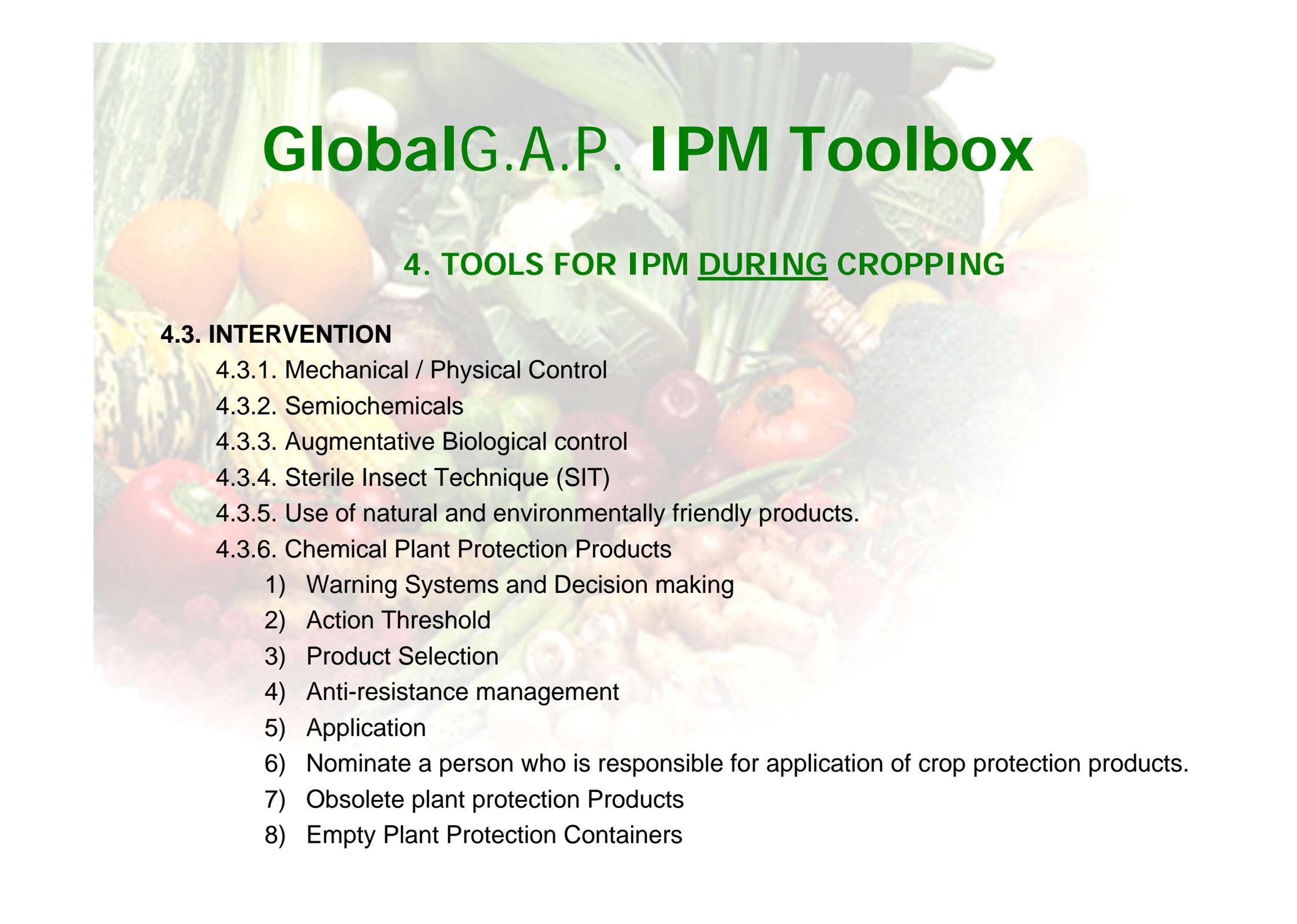
4.2.1. *Organisation*

4.2.2. *Observation*

4.2.3. *Record keeping*

4.2.4. *Warning Systems and Decision Tools*

4.2.5. *Evaluation / decision making*



# GlobalG.A.P. IPM Toolbox

## 4. TOOLS FOR IPM DURING CROPPING

### 4.3. INTERVENTION

4.3.1. Mechanical / Physical Control

4.3.2. Semiochemicals

4.3.3. Augmentative Biological control

4.3.4. Sterile Insect Technique (SIT)

4.3.5. Use of natural and environmentally friendly products.

4.3.6. Chemical Plant Protection Products

- 1) Warning Systems and Decision making
- 2) Action Threshold
- 3) Product Selection
- 4) Anti-resistance management
- 5) Application
- 6) Nominate a person who is responsible for application of crop protection products.
- 7) Obsolete plant protection Products
- 8) Empty Plant Protection Containers



# GlobalG.A.P. IPM Toolbox

## 5. TOOLS FOR IPM POST-HARVEST

### 5.1. POST-HARVEST TREATMENTS

- 5.1.1 Selection of techniques and products
- 5.1.2. Application technique
- 5.1.3. Record of applications

### 5.2. STORAGE AND TRANSPORTATION

- 5.2.1 Monitoring
- 5.2.2 Prevention
- 5.2.3 Intervention



# GlobalG.A.P. IPM Toolbox

## The Road Ahead ?

- Evolving document.  
Regularly updated with new tools.
- Knowledge Exchange Tool
- Database of Examples for each IPM tool.
- “LocalGAP” versions for specific crops.
- Stimulate **continuous improvement** of producers’ crop protection practices.

# What happened with the sweet peppers from Almeria ?



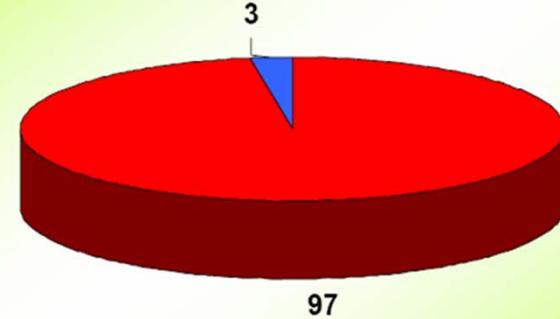
# Biocontrol-based IPM



*Amblyseius swirskii*



¿El control de trips ha sido peor o mejor que en Control Químico?

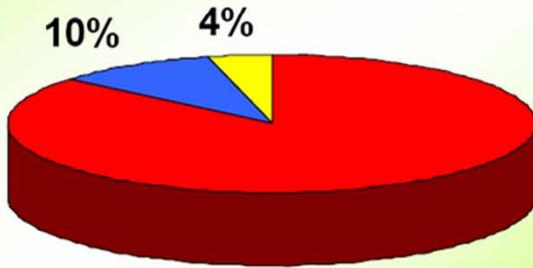


■ Mejor control ■ Igual control

COEXPHAL



¿La Calidad del fruto en Control Biológico es mejor o peor que en Control Químico?

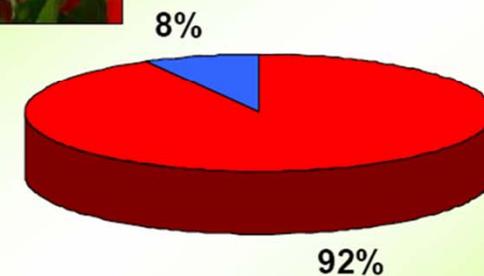


■ Mejor ■ Igual ■ Peor

COEXPHAL



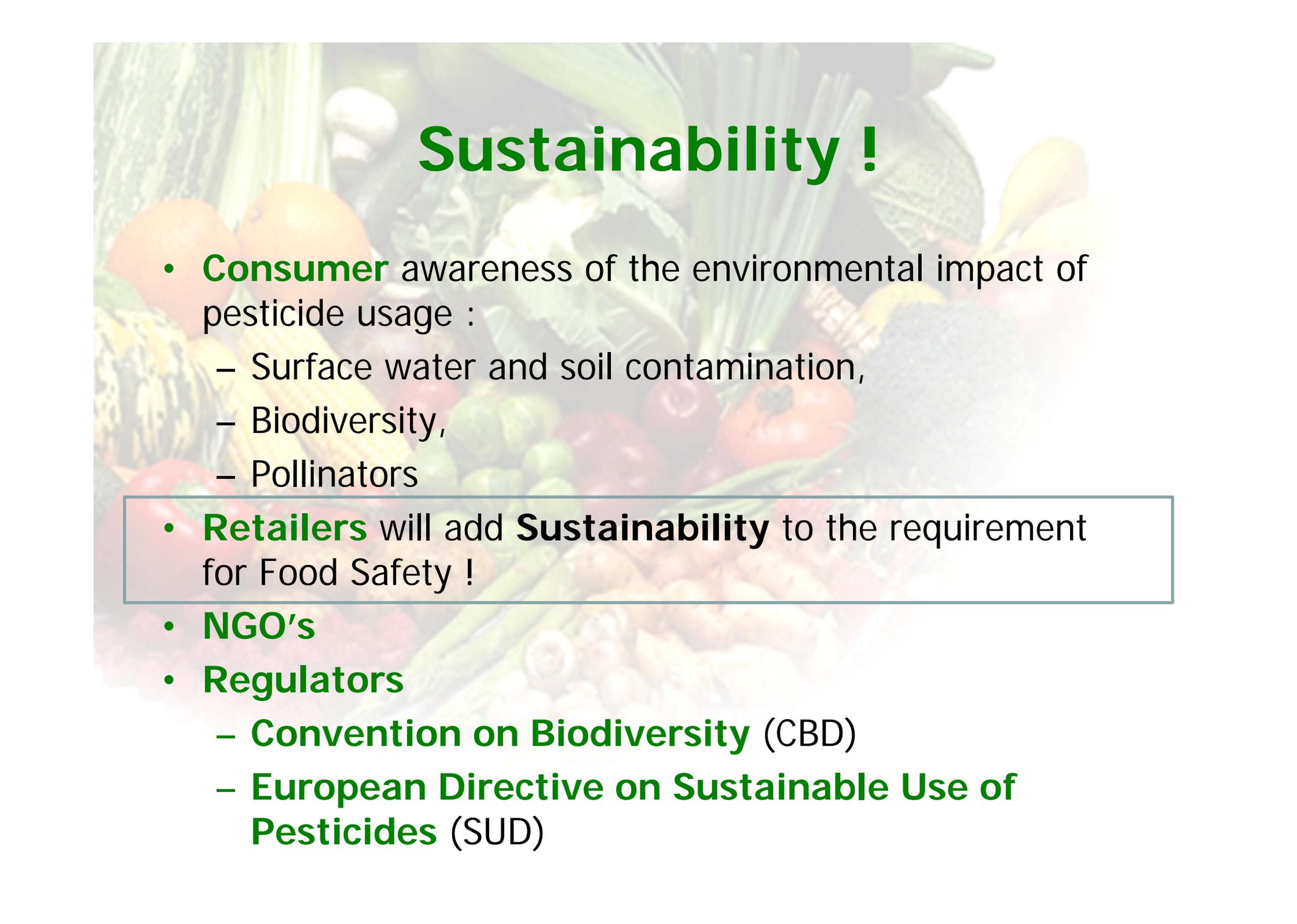
Grado de satisfacción del agricultor



■ Valora positivo el C.B.

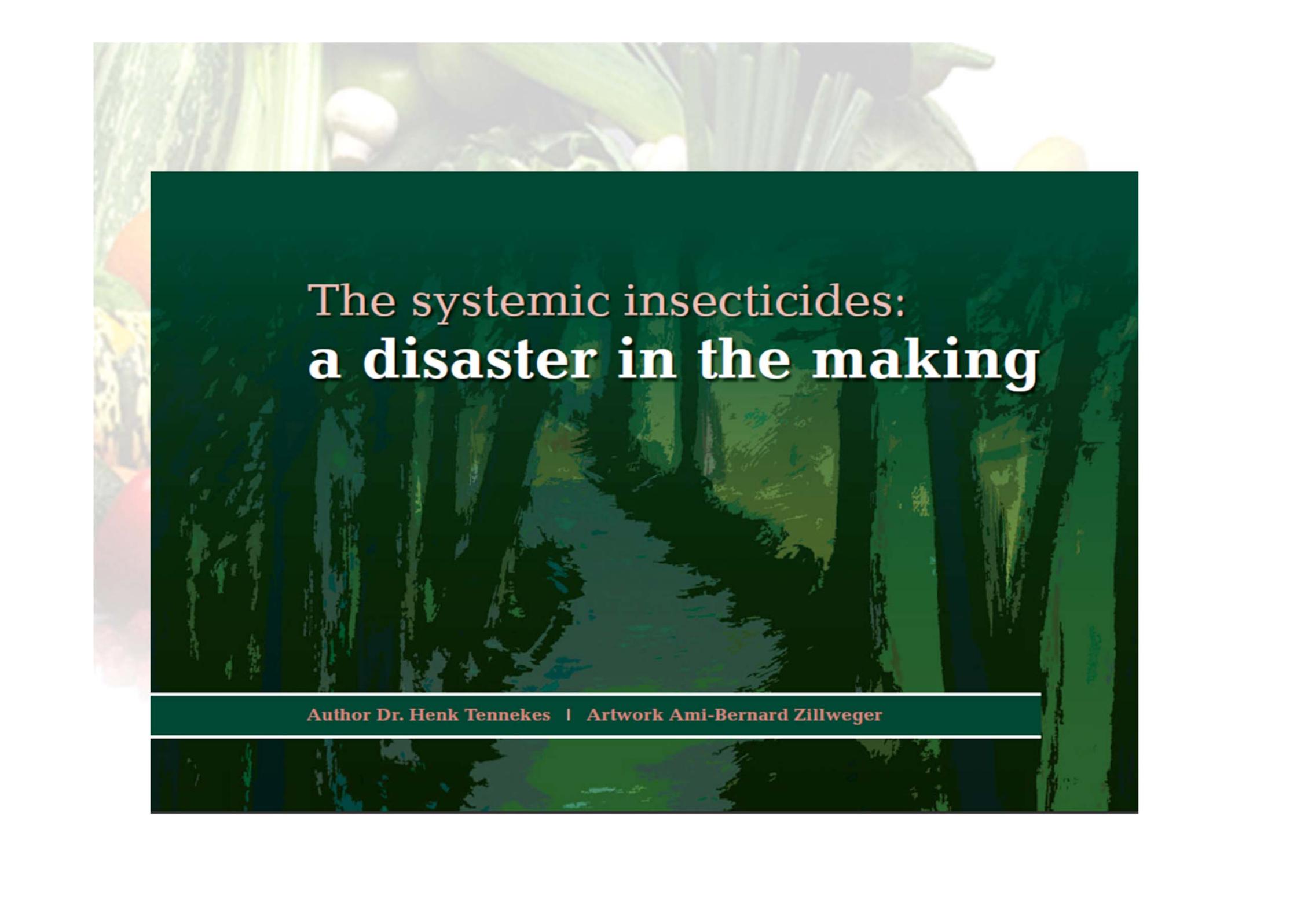
■ Continuarían por obligación

COEXPHAL



# Sustainability !

- **Consumer** awareness of the environmental impact of pesticide usage :
  - Surface water and soil contamination,
  - Biodiversity,
  - Pollinators
- **Retailers** will add **Sustainability** to the requirement for Food Safety !
- **NGO's**
- **Regulators**
  - **Convention on Biodiversity** (CBD)
  - **European Directive on Sustainable Use of Pesticides** (SUD)



The systemic insecticides:  
**a disaster in the making**

Author Dr. Henk Tennekes | Artwork Ami-Bernard Zillweger



# European Directive on Sustainable Use of Pesticides

2009/128/EC

*“Member States shall take all necessary measures to promote low pesticide-input pest management, giving when ever possible, priority to **non-chemical methods**, so that professional users of pesticides switch to practices and products with the lowest risk to human health and the environment among those available for the same pest problem....”* (article 14)



# Time table

## for implementation of Directive 2009/128/EC

- 14 December 2011, MS to convert Directive 2009/128/EC into **national law** (art. 23)
- 14 December 2012, MS shall communicate **National Action Plan** to Commission and other MS (art. 4.2)
- 30 June 2013, MS to report to the European Commission on implementation of IPM (art. 14.3)
- 1 January 2014, all professional uses to implement IPM (art. 14.4)



# National Action Plans

- Expert Group meetings
  - IBMA representation
  - Large difference in ambitions and knowledge level between Member States.
  - Different interpretations of IPM.
  - Strong involvement of ECPA.
  - Member States need help in development of NAP's.
- IBMA and IOBC need to actively provide expertise information and guidance on real IPM to the Member States and the Commission.

# Promoting IPM Recommendations

## 1. Provide knowledge and expertise

- Assist in development of **National Action Plans**
- Develop **Guidance Document** on IPM (IBMA WG)
- Meet with DG AGRI, SANCO, ENVI, ENTERPRISE
- Provide knowledge about IPM to **retailers** and **NGO's**
- Work closely with **IOBC**
- **IBMA Awards** for progressive retailers and producers

## 2. Stimulate research on IPM

- Lobby for larger **funding** for IPM research
- Provide guidance for research programs on IPM :  
**Research Needs**
- **IBMA Awards** for innovative research on IPM



# Working together

1. IBMA
2. Regulators
3. Researchers
4. Agrochemical companies
5. Advisors
6. Retailers
7. NGO's
8. Farmers



**Thank you !**