



Better Training for Safer Food *Initiative*

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**Minimisation of
side effects of
PPPs for the
environment**

Lecture 07



European
Commission



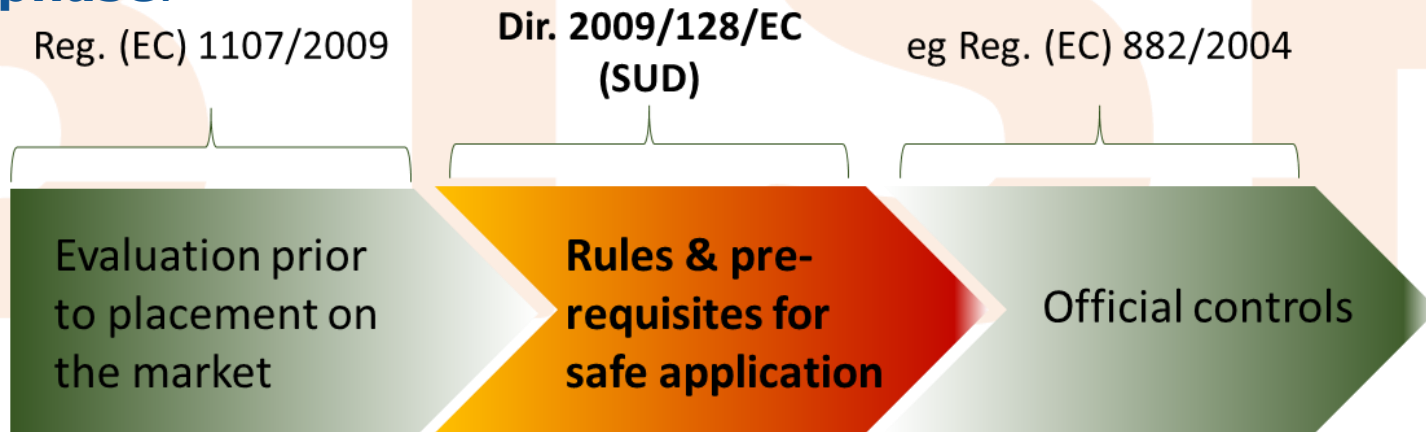
Lecture 7

Minimisation Of Side Effects Of PPPs For The Environment

- Comparative assessment of PPPs at user level
- Emergency actions to protect human health and/or the environment
- Special care of protected areas established under Art. 6 and 7 of Directive 2000/60/E

Directive 2009/128/EC – Sustainable Use Directive

The novelty that the Directive (EC) 128/2009, the 'so-called' Sustainable Use Directive (SUD) brings in the European regulatory framework related to plant protection products is that it focuses on their use phase.



Relevant concepts in SUD: HAZARD, RISK, GEO CONTEXT influence the RISK ANALYSIS, PRAGMATISM



Comparative assessment of PPPs at user level General criteria

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Directive Principle - Article 5 annex 1

"The pesticides applied shall be as specific as possible for the target and shall have the least side effects on human health, non-target organisms and the environment."

As registration is generally based on absolute criteria, there may be scope for further selection from among the approved products, favouring those that are least harmful to health and the environment



Comparative assessment of PPPs at user level General criteria

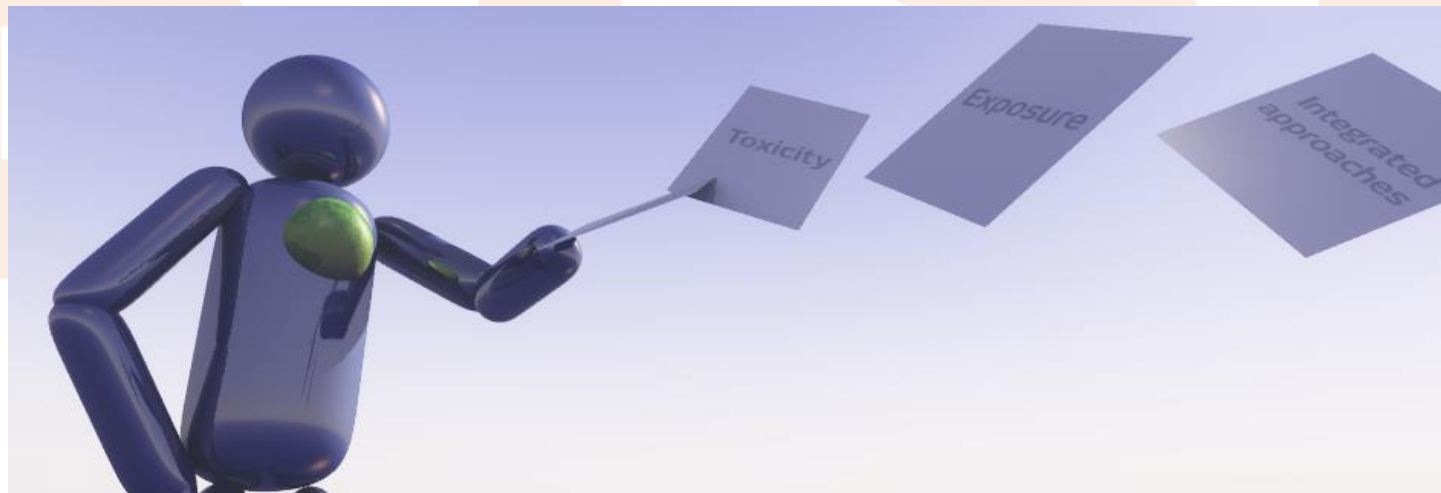
Preference should be given to pesticide

Target specific

Degrade rapidly – low persistence

Low risk to human

Low risk to environment (fate in soil, water and air)



Comparative assessment of PPPs at user level General criteria and step wise approach

- ◆ Information should be searched on non-chemical control or prevention method available

There <<are /are not >> non-chemical control or other prevention methods available in your MS to control <<all pests/some pests>>

- ◆ IPM programs

- ◆ Products label enable to make an assessment at the point of selection for use



An approach based only on hazard information available in the label alert the user to the presence of a hazard and the need to avoid exposures and risks arising from it, but might not secure real changes in pesticide use.

Comparative assessment of PPPs at user level Data source

Selecting pesticides requires information

- **Label**
- **Eu Pesticide data base**
- **EPPO lists of existing databases in Europe**

There are very few databases on side-effects of plant protection compounds available

- **IPM impact** <http://www.ipmimpact.com>
- **The Pest Select Database** [http://www.iobc-wprs.org/ip_ipm/IOBC Pesticide Side Effect Database.html](http://www.iobc-wprs.org/ip_ipm/IOBC_Pesticide_Side_Effect_Database.html)
- **THE PPDB Pesticide Properties Database** <http://sitem.herts.ac.uk/aeru/ppdb/en/index.htm>
- **Pesticideinfo.org** [Pesticide Action Network North America](http://www.pesticideinfo.org)

Comparative assessment of PPPs at user level

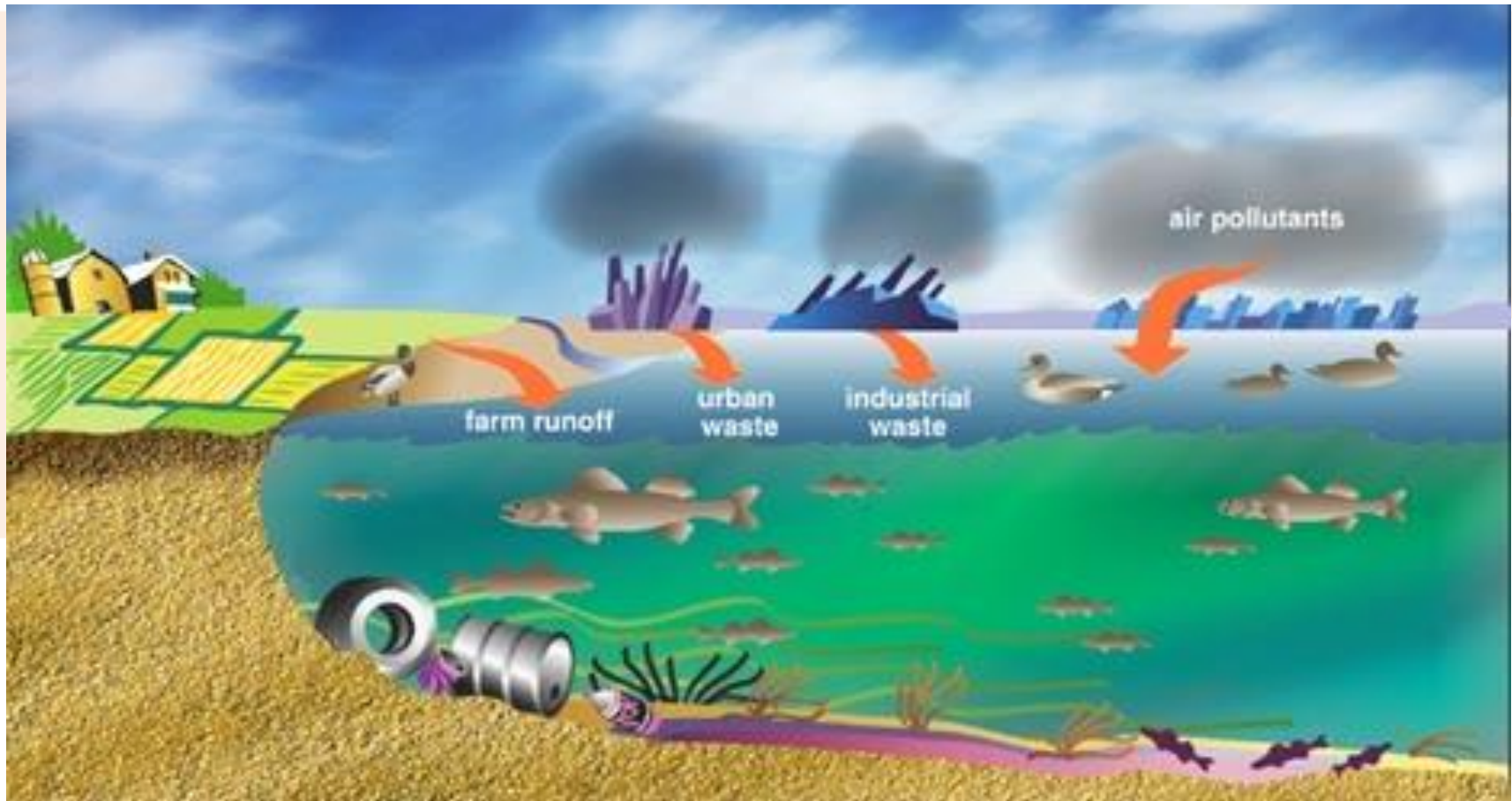
Data source

Results in practical situations may differ due to multiple factors

- number of treatments,
- amount of active ingredient applied,
- instability of climatic condition,
- stage of the crop,
- type of substrate,,

Comparative assessment of PPPs at user level Data source

... and complexity of the eco-systems



Comparative assessment of PPPs at user level Tools

The risk assessment for plant protection products is very complex, considering a range of situations and exposure patterns, critical effects, and organisms.

Different strategies in risk management have been proposed in the last few years

Supporting Decision Tools based on indicators are commonly the first, most basic, tools for analyzing change in a system, and evaluate different pesticide strategy

Comparative assessment of PPPs at user level Tools

Based on the level of complexity, 3 broad typologies of decision supporting systems (DSS) can be identified:

- **Ranking user friendly assessment tools,**
- **Exposure-toxicity ratio (ETR) approach**
- **Fuzzy logic expert system approach**



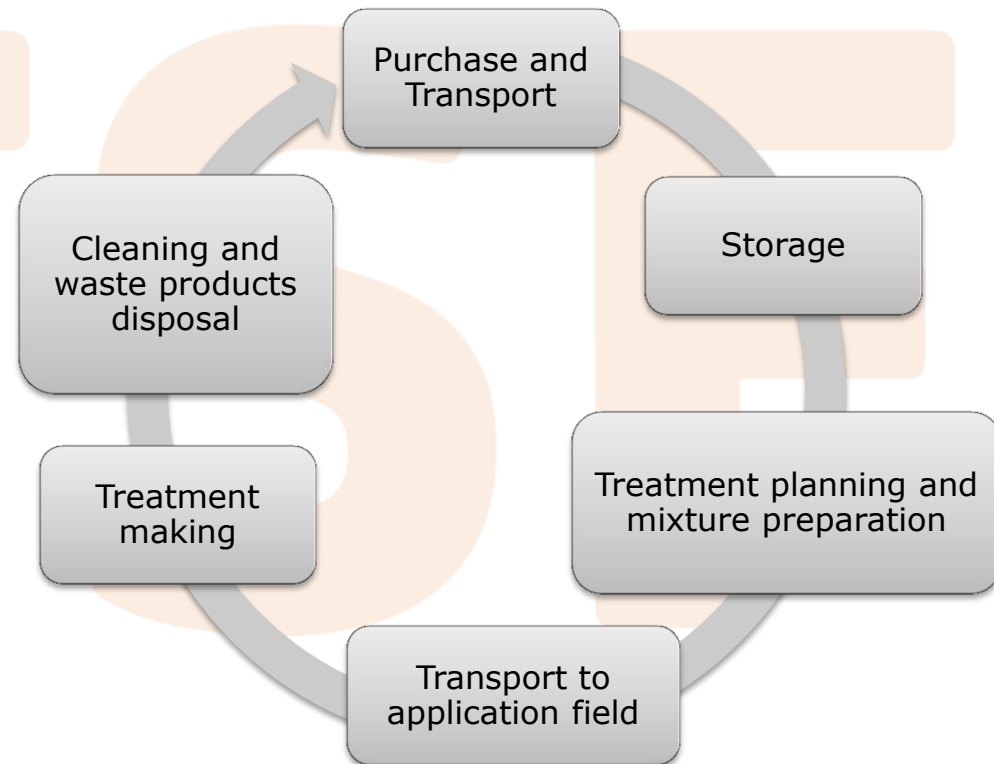
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Emergency Actions to protect human health and/or the environment

Emergency Actions to protect human health and/or the environment

The working routine often implies an excessive confidence

It is essential that operators wear Personal Protective Equipment (**PPE**), specific for PPP exposure, during **all activities** where they may come into contact, directly or indirectly with the products.



Emergency actions

In case of pesticide exposure follow the Material Safety Data Sheet.

General conducts:

- **stop work and call for medical help immediately;**
- **avoid further exposure if you are helping a contaminated colleague (use appropriate personal protective equipment);**
- **move away from the source of contamination and remove all contaminated clothing;**
- **wash contaminated skin or hair thoroughly with plenty of clean water;**
- **if eyes are contaminated, flush them with plenty of clean running water and cover with a sterile eye pad or similar lint-free dressing;**

Emergency actions

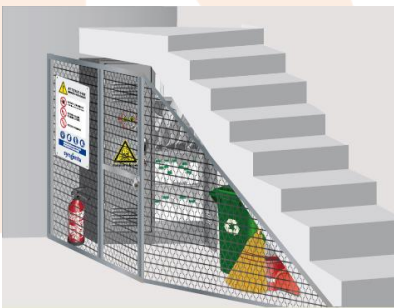
- **if the contaminated subject has swallowed a pesticide, do not induce vomiting unless the product label specifically recommends this;**
- **in case of unconsciousness, check for breathing and if there are no signs begin cardiopulmonary resuscitation (CPR), as appropriate, using a method of artificial respiration which will avoid the risk of swallowing or breathing the pesticide);**
- **give the doctor or hospital a copy of the product labels and material safety data sheets or, if this is not possible, give them details of the active ingredients and product names.**

Accidental spills

- **liquid spills: use absorbent material (for example: vermiculite or sand) to absorb the spill and collect it with dustpan and brush;**
- **in case of a solid product, directly collect it with broom and dustpan.**
- **Next, thoroughly wash the contaminated surface with soap and water making sure to carefully dispose of contaminated water;**
- **Keep people and animals away from the affected area**
- **If the spill causes any water contamination or contaminates soil on a large scale, advise local Environment Protection Agency and warn others at risk (for example, people using the water downstream of a spill)**

Accidental spills

- Check that store drains are not directly linked to sewage system, through which accidental spills of concentrated product could be drained into the environment, as well as waters used to clean the store floor, that may contain residues of PPPs.
- Use plastic sheets to catch spills and splashes in the mixing and loading area



Accidental spills

- **Place contaminated wastes and debris within sealed and labeled containers, to be located within the area where no longer licensed/registered products are stored; contaminated wastes must be treated as special waste by authorized waste contractors;**
- **Never wash any spills of PPP into public drains or other water course. Only use dedicated drains for contaminated waters or containers.**
- **In case of fire within or adjacent to the PPP store, immediately call the Fire Brigade. Do not attempt to put out the flames until trained personnel have arrived. Avoid excessive volumes of water to keep run-off to a minimum.**

Special care care of protected areas established under Art. 6 and 7 of Directive 2000/60/E

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The possible actions depends on specific NAPs and may be:

- **Priority given to biological pest control measures, or use of non-chemical alternatives (mechanical, physical control methods)**
- **PPP Limitations and criteria for selection**
- **Application techniques**
- **Risk mitigation Action**
- **PPP application signs for general public**



Special care care of protected areas established under Art. 6 and 7 of Directive 2000/60/E

The register of protected areas required under Article 6 and 7 of Directive 2000/60/E include the following types of protected areas:

- (i) areas designated for the abstraction of water intended for human consumption (Article 7);**
- (ii) areas designated for the protection of economically significant aquatic species;**
- (iii) bodies of water designated as recreational waters, including areas designated as bathing waters under Directive 76/160/EEC;**

Special care care of protected areas established under Art. 6 and 7 of Directive 2000/60/E

- (iv) nutrient-sensitive areas, including areas designated as vulnerable zones under Directive 91/676/EEC and areas designated as sensitive areas under Directive 91/271/EEC; and**
- (v) areas designated for the protection of habitats or species where the maintenance or improvement of the status of water is an important factor their protection, including relevant Natura 2000 sites designated under Directive 92/43/EEC (1) and Directive 79/409/EEC (2).**

Special care care of protected areas established under Art. 6 and 7 of Directive 2000/60/E

The possible actions depends on specific NAPs and may be:

- **Priority given to biological pest control measures, or use of non-chemical alternatives (mechanical, physical control methods)**
- **Limitations on the use of pesticides that are dangerous for the aquatic environment and of the use of other products found on surface water and groundwater through environmental monitoring activities.**
- **Use of low-risk products as defined by Regulation (EC) No 1107/09**
- **Employing spraying equipment and methods which minimise pesticide leakage in the environment**

Special care care of protected areas established under Art. 6 and 7 of Directive 2000/60/E

The possible actions depends on specific NAPs and may be:

- Selection of ad hoc criteria to favour, within each site, the funding of organic-farming pest control techniques complying, and of voluntary IPM farming. Limit the use of pesticides with a high tendency to percolate
- Actions supporting the creation of hedges and buffer strips of appropriate width, their maintenance and their restoration, or natural recolonisation by plant species typical of riverside strips and by other species forming habitats of Community interest
- The general public must be notified of any PPP application by signs indicating the active substance used, the spraying date and the duration of the prohibition to enter the treated area.

Special care care of protected areas established under Art. 6 and 7 of Directive 2000/60/E

Special attention to risk mitigation actions designed to reduce the contamination of surface water bodies from pesticide drift and run-off. For instance:

training-use anti-drift, low-pressure nozzles and other techniques, such as adjustable-direction spraying, and ensure logging of operations and electronic monitoring of sprayed volumes, etc.....)



This action/ training/ seminar is carried out by [contractors name] under the contract no... with the Consumers, Health and Food Executive Agency (former Executive Agency for Health and Consumers).

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