



*Human health  
consequences of  
pesticides  
& the EU risk  
assessment*

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## Pesticides – a health concern

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- Designed to be **toxic to living organisms** – they pass through biological membranes
- May **interact with hormones**, their synthesis and metabolism
- Unlike natural hormones they may **persist in the body**
- Acutely eradicate pests → most regulatory tests are acute
- Regulatory testing → **major gaps in long term effects** at low doses for endocrine disruptors, neurotoxic and immunotoxic compounds

# Legal requirements - pesticides



## Plant Protection Product Regulation (PPPR) 1107/2009:



- High level of protection for ALL  
— *humans, animals, environment*
- Protect the vulnerable  
— *pregnant women, children, babies*
- Use ALL scientific literature
- Consider active substances, products, food residues
- Consider mixture effects (cocktails)
- Apply the precautionary principle

Mutagens, Carcinogens, Toxic to Reproduction, Endocrine Disruptors, PBTs



Hazards

# EU policy on endocrine disruptors

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- Regulation 1107/2009 – scientific criteria for endocrine disruptors
  - Deadline: December 2013 (but presented in 2016)
  - Process delayed by market interests
  - Criteria will apply end of 2018
- Interim criteria in place since 2009
  1. Carcinogen Cat 2 + Toxic to reproduction Cat 2  
OR
  2. Toxic to reproduction Cat 2 + toxic to endocrine organs

# EU policy on endocrine disruptors

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*Since 2009 zero pesticides have been banned due to the interim criteria or due to their endocrine disrupting properties*



### **Thifensulfuron-methyl - herbicide (renewal 2016-2031)**

- Approved by Rapporteur Member State (UK)
- EFSA conclusion: interim criterion 2 is met (toxic to reproduction and mammary tumours)
- Herbicide approved by Member States
- Commission requested confirmatory data on:
  - Genotoxicity of metabolites
  - Mechanistic data on ED
  - Risk to aquatic organisms
  - Contamination of ground water

## Example 2 – EDC

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### 2,4- D - herbicide (renewal 2016-2030)

- Approved by Rapporteur Member State (Greece)
- Endocrine disruptor:
  - Reported effects on testis, prostate, kidney, thyroid (also thyroid levels), adrenal glands.
  - Commission's 2016 screening identified it as EDC
- EFSA identified data gaps for complete ED evaluation
- Herbicide approved by Member States
- Commission requested confirmatory data on:
  - Existing information on extended 1 generation study
  - Amphibian metamorphosis test



### **Lambda-cyhalothrin** - insecticide (renewal 2016-2023)

- Approved by Rapporteur Member State (Sweden)
- Endocrine disruptor with developmental toxicity:
  - Brain morphological changes
  - Sperm effects
- EFSA identified data gaps for ED evaluation and toxicity of metabolites
- Insecticide approved by Member States
- Commission requested confirmatory data on:
  - A systematic review for the sperm effects
  - Toxicity of metabolites
- Lower doses & mitigation measures for Member States





### **Chlorpyrifos** - insecticide (*under evaluation*)

- Endocrine disruptor:
  - Thyroid effects and anti-androgenic
  - Developmental neurotoxicity (brain dysmorphism) in infants and children
- Rapporteur:
  - Neuroendocrine toxicity not assessed
  - Neurotoxicity study requested
- Nevertheless, approved by Rapporteur Member State (Spain)
- EFSA conclusion in progress



## Sustainable use of pesticides Directive

- Pesticides as a last resort (IPM)
  - crop rotation
  - resistant varieties
  - bio-pesticides
- Clear reduction targets
- Monitoring

**Not implemented by  
Member States**



# Solution - Promote alternatives



Organic < Conventional: 8-9 % !



Agroecology

flowers

plants

Increase up to 30%!

# Conclusions

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- Pesticides are approved even when hazard criteria are met
- The “dose makes the poison” does not apply in long term exposures → new tests/approach is urgent
- Independent scientific literature is still given little weight → regulators undermine pesticide effects
- Market and profit block the high level of protection for humans and the environment
- Policy should be strict and clearly promote the development of alternative methods and their uptake by farmers
- A different system for the production of our food is urgent



*Thank you!*



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