

Endocrine disrupting pesticides

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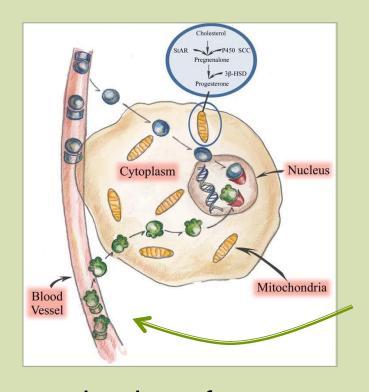
Pesticides



Deliberately made to be toxic to living organisms

 Cellular sites in target species similar to humans and other animals

Several pesticides are endocrine disruptors





Low solubility

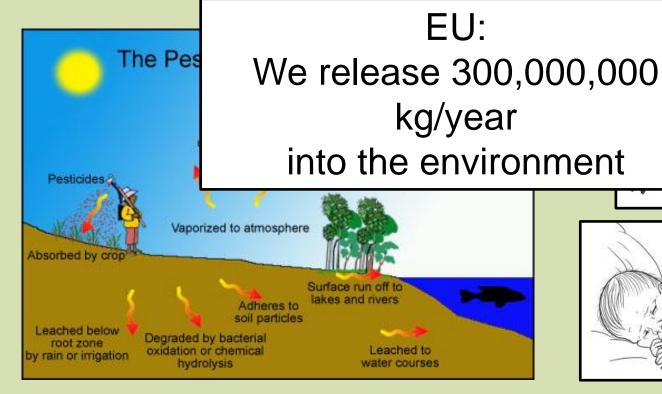


Contamination of ecosystems

Pesticides



Detected in: biota, soil, sediments, water systems, human tissues and blood, including newborns.





ED-pesticides and wildlife





DDT;
alligators &
birds



Dieldrin, chlordane; Hermaphrodite polarbears History of endocrine disruption due to pesticides

Atrazine; fish, amphibian & reptile feminization



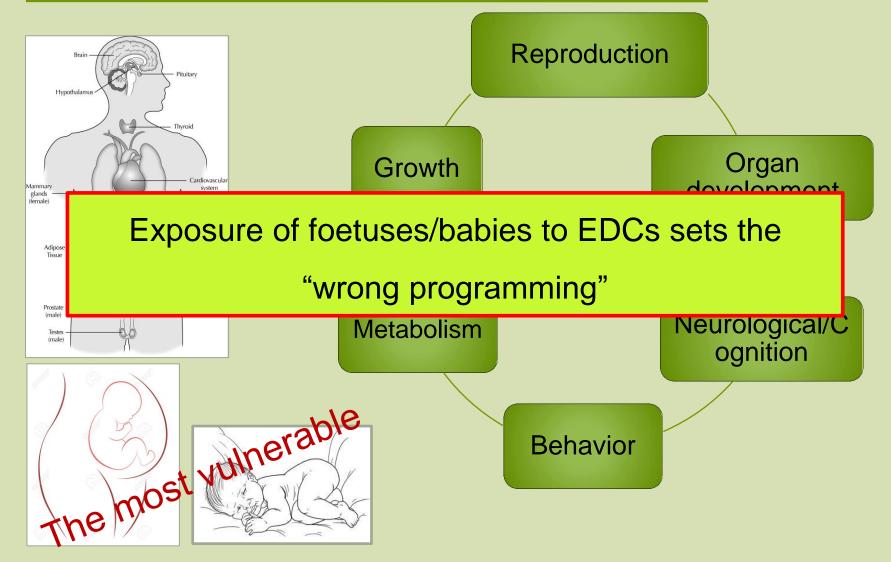
TBT; imposex in snails Agricultural areas: amphibian intersex





The endocrine system





ED-pesticides and humans



breast prostate endometrial testicula

testicular ovarian Reproductive organ malformations

Reproductive dysfunction

sperm quality foetal growth

early puberty

obesity diabetes

Metabolic

body weight

miscarriage

thyroid pancreas

related

cancers

brain tumours

Neurodevelopmental disorders

autism

behaviour Learning deficit

impaired cognition

Neurodegenerative diseases

infertility

Parkinson

Alzheimer

ED-pesticides



Current Risk Assessment misses to protect human health and the environment from all EDCs

WHO report, 2013:

- EDCs are a global problem
- Improved methods of assessment of chemicals are needed

PPPR and BPR:

"substances having endocrine disrupting properties which may cause adverse effects will not be approved for the respective use"

COM never presented the draft criteria based on science

The roadmap to where?



- Only one of criteria options of the roadmap will capture all EDCs
 - → Option 3 (Categories)
- Regulatory-decision making options for changing regulation (Options B & C) are dangerous
 - → Option A: A derogation allowing 5-years use in case of a serious danger to plant health is included.

PAN Europe's Assessment



Pesticides with ED-properties \longrightarrow **50**

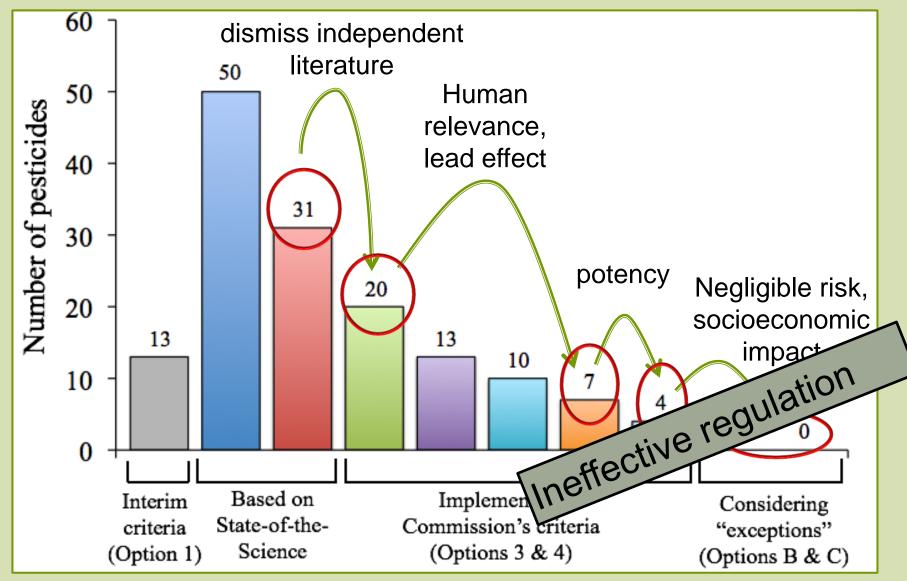
That may cause adverse effects \longrightarrow (31)

6% of authorized pesticides

More information: http://www.disruptingfood.info/en/what-we-do-blog

Dangers in the interpretation of the criteria





Alternatives



Synthetic non-EDC alternatives

BUT best option:

- Integrated Pest Management
 - January 2014: Pesticides as a last resource

Non-chemical alternatives

Crop rotation

Resistant varieties

Planting distance

Biofungicides:

e.g. Ampelomyces quisqualis

OR Organic Agriculture

Organic Vs Conventional: 8-9 % yield

Ponisio LC, M'Gonigle LK, Mace KC, Palomino J, de Valpine P, Kremen C. 2015 Diversification practices reduce organic to conventional yield gap. *Proc. R. Soc. B* **282**: 20141396.

Final remarks

The COM has to protect human health and the environment from exposure to EDpesticides



- The COM should not use the IA to decide upon science-based EDC criteria
- Europe should move towards a low-pesticide and sustainable agriculture

Thank you!