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BIOECONOMY RESEARCH

Introduction to research needs, harmonization and future cooperation

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NIBIO and ²Norwegian Food Safety Authority



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Research Needs

CONFERENCE REPORT

Pesticide regulatory risk assessment, monitoring, and fate studies in the northern zone: recommendations from a Nordic-Baltic workshop

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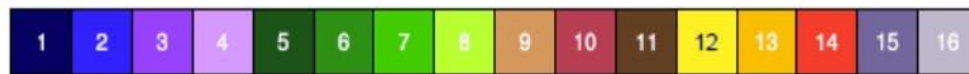
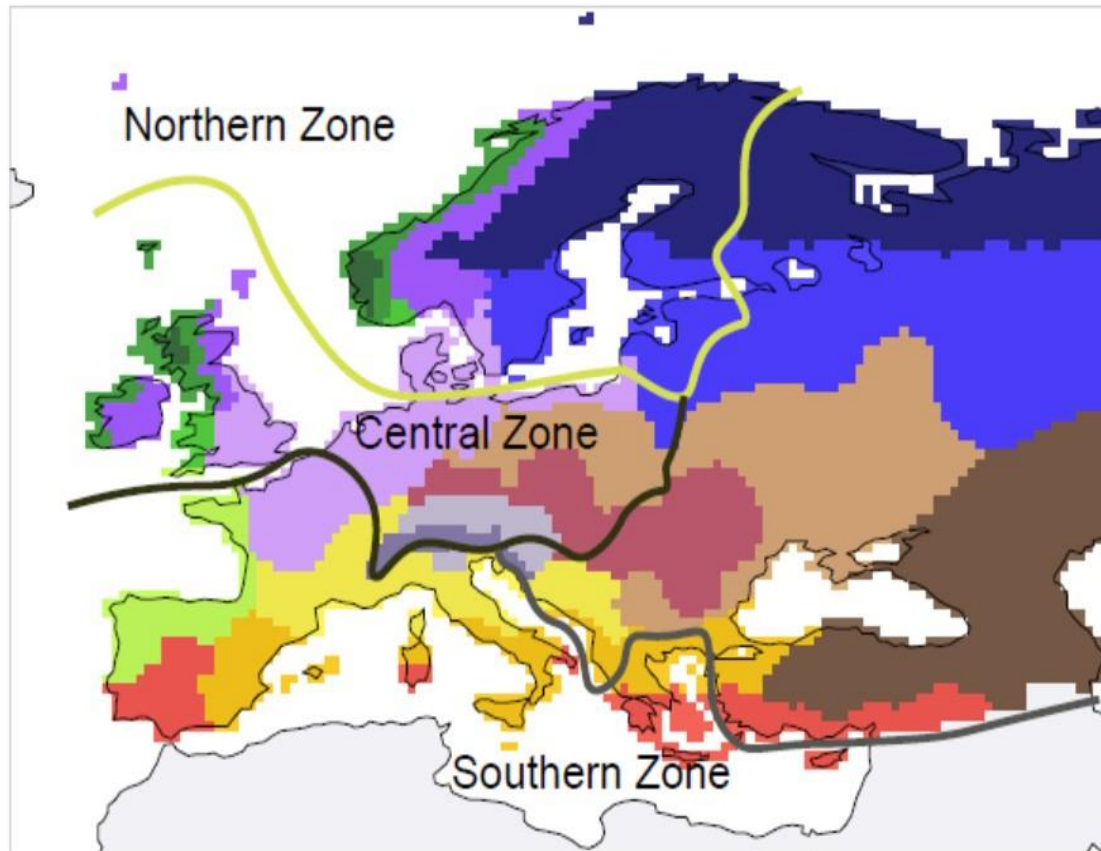
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Introduction

The recent revision of the legal framework for authorization of use of plant protection products and pesticides within the European Union/European Economic Area (EU/EEA; Regulation EC 1107/2009, Directive 2009/128/EC) imposes a need for close collaboration across country borders within the three pesticide authorization zones (designated the north, central, and south zones) in Europe. The principles of zonal evaluation and mutual recognition embedded in Regulation EC 1107/2009 concerning marketing of plant protection products are intended to reduce the approval times for pesticides.

have been outlined for pesticide modeling in Europe (Blenkinsop et al. 2008; Fig. 1). Pedoclimatic or agricultural constraints could entitle the individual states to adopt restrictions on the use of pesticides approved within their zone or even to refuse approval.

To achieve a sound scientific basis for zonal evaluation and collaboration on a regulatory level, it is also necessary to increase research collaboration and knowledge exchange within the scientific community. Here, we report the main conclusions and recommendations from a Nordic-Baltic workshop on the environmental fate of pesticides, which was conducted in Ås, Norway, in September 2014 with the aim of promoting



Monitoring of pesticides in water

Different foci:

Leaching to ground water in 5 geographical zones in Denmark (50 pesticides)

Runoff to selected agricultural streams in Norway and Sweden (automated composite sampling) (115/130 pesticides)

Runoff and leaching to rivers, tributaries and ground water in Finland (grab sampling)

Runoff to selected rivers in Estonia (grab sampling) (10-47 pesticides)

Knowledge gaps

Identify pesticides of concern in the the northern zone:

- Pesticides in groundwater. Monitoring
- Pesticide transport during autumn and winter
- Pesticide residues in soils. Lack of soil monitoring.
- Degradation half-lives in the Northern Zone. Review.
- Pesticides in sediments
- Insecticides in aquatic environment: P(N)ECs are often 100-fold lower than analytical methods are able to quantify
- Need harmonized EQS-values for pesticides and metabolites in the northern zone
- Are EQS-values suitable as a measure of toxicity to aquatic organisms?

Knowledge gaps (cont.)

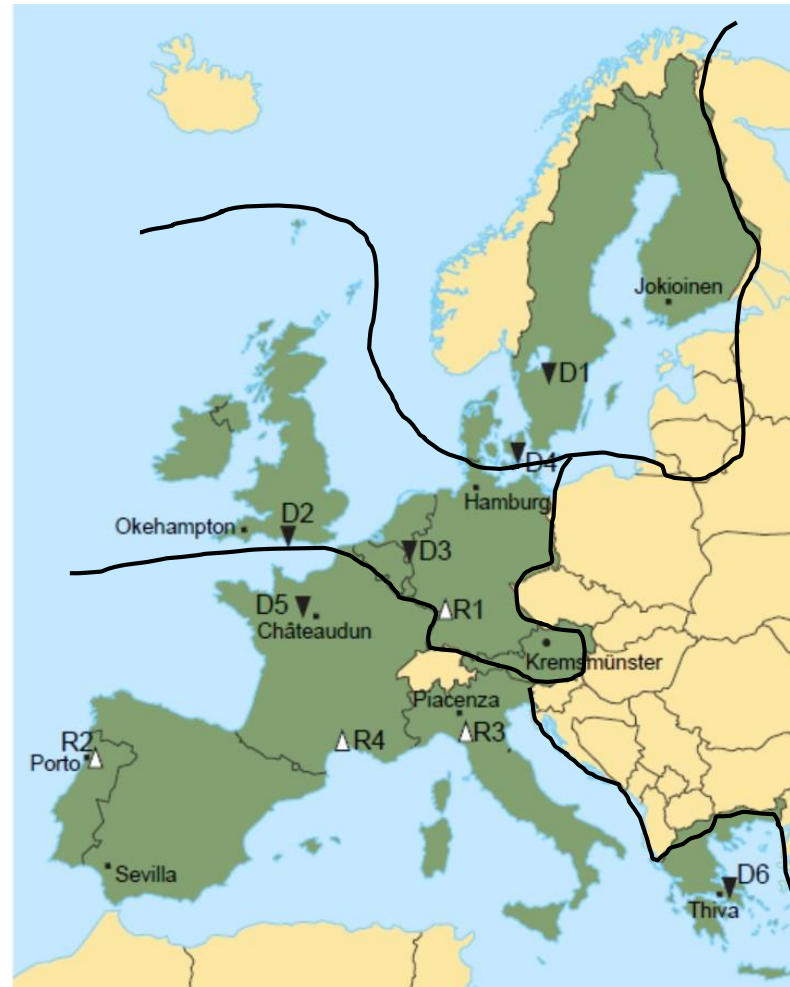
Adapt models to northern zone conditions:

- Define northern zone agricultural soil and climate conditions to improve fate and risk assessment
- Better models for the assessment of multiple metabolites, low application rates and effects of winter-related processes
- Need harmonized FOCUS runoff and leaching scenarios adapted to northern zone conditions

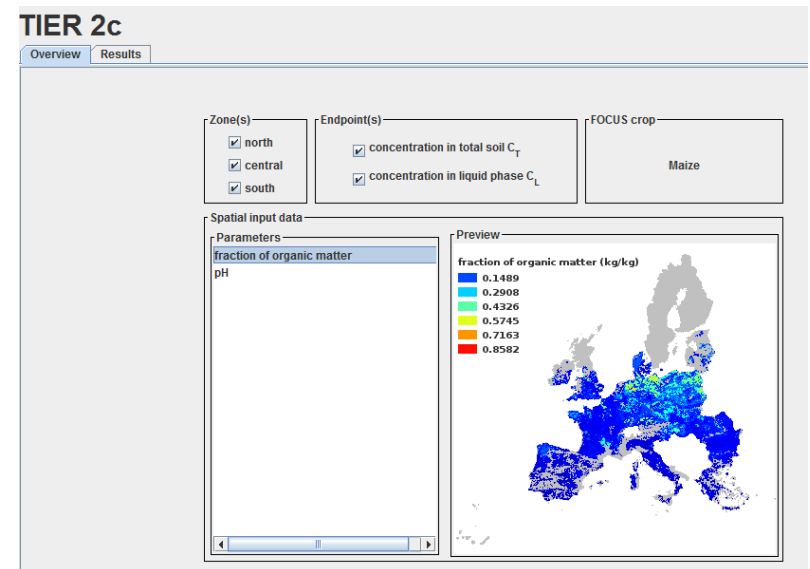
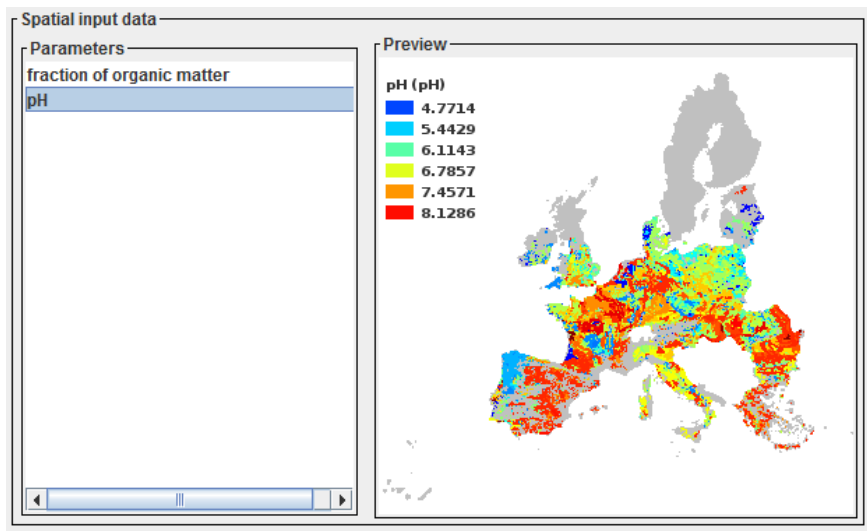
FOCUS groundwater (●) and surface water scenarios (▼ = drainage, Δ = runoff)



FOCUS groundwater (●) and surface water scenarios (▼ = drainage, Δ = runoff)



New models «forget» to include data from large areas within the northern zone



Screens from PERSAM (Persistence in Soil Analytical Model). A software tool for calculating the predicted environmental concentration (PEC). (VITO NV, 2016)



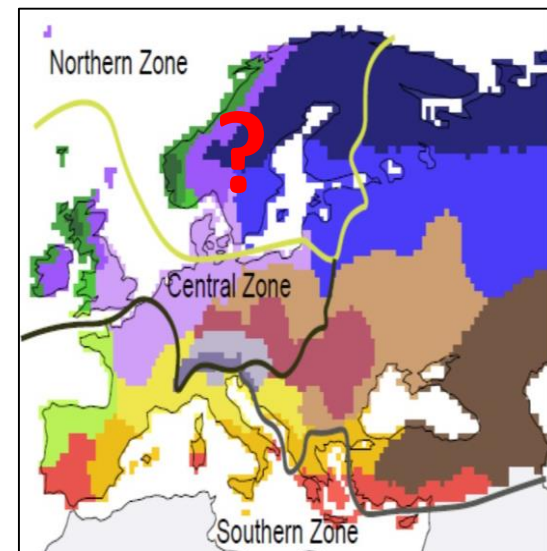
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Harmonization

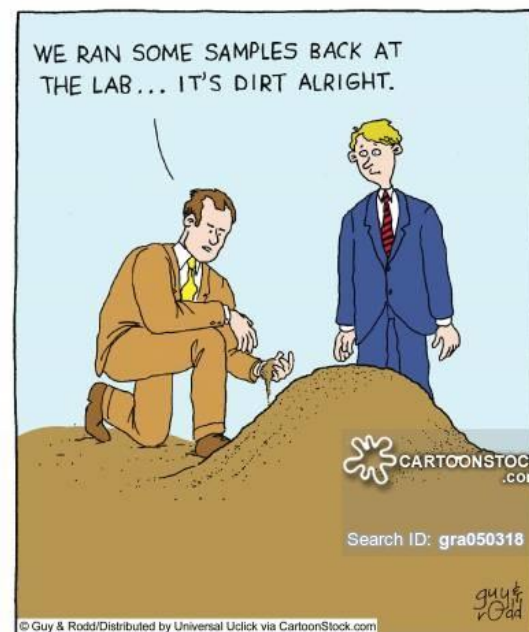
Challenges for the Northern Zone (NZ) fate team

- The majority of degradation studies (lab/field) use soils from outside the NZ
 - challenging to assess representativity for the NZ
- PEC models developed in the EU mainly focus on conditions in the Southern and Central zones e.g. no R-scenarios from the NZ, new PECsoil models
 - challenging to evaluate protectiveness for the NZ
- Data gap regarding pesticide fate under Nordic cold winter conditions (slow degradation and risk of mobilization of sorbed pesticides in winter/spring caused by freezing/thawing of soil)



NZ needs for scientific research

- Field dissipation studies* performed in the NZ
- Laboratory degradation and adsorption studies* with soil from the NZ
- Data on the risk of pesticide loss during the winter season in cold climatic areas
- Monitoring data
- Development of NZ surface water runoff scenarios



*If peer reviewed papers are made, it would be helpful to make the EU-RMS aware of this research during the commenting period



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Future cooperation

EU RAA/EFSA food safety priorities

Annex A – Food safety risk assessment priorities (Delphi study)

Generic	Chemical	Microbiological	Environmental	Nutrition
1. Methods and systems for identifying emerging food risks (e.g. new food-borne diseases)	8. Harmonisation of methods for risk assessment of chemical contaminants	12. Systems for monitoring and characterising microbes isolated from food, environment and human illness cases	19. Improving information on the occurrence and spread of harmful organisms	25. Indirect effects on human health due to modified agricultural practices (e.g. via reduction of pesticide use, changed content of mycotoxins)
2. Development of standard risk-benefit assessment methods (of foods)	9. Cumulative exposure assessment (e.g. for pesticide residues/ PAHs)	13. Improve the use of genetic data (e.g. from whole genome sequencing) for risk assessment of microbiological contaminants	20. Ribonucleic acid interference (RNAi) applied to food producing organisms as pesticide, veterinary medicine or newly expressed trait in genetically modified crops	26. Developing standard biomarkers of intake of and/or exposure to contaminants
3. Common data collection/ surveillance scheme	10. Infant and baby food	14. Antimicrobial/ antibiotic resistance	21. Better understand biological organisms and plant substances used in crop protection (reducing the need for chemicals, e.g. pesticides)	27. Food supplements risk/benefits (in general)
4. Multiple contaminant impacts on the risk profile of foods	11. Emerging contaminants	15. Microbial food pathogens (in general)	22. The impact of chemicals on the ecosystem (release of chemicals into the environment)	28. Determination of allergen thresholds (clinical studies), in conjunction with immune-chemical measurements of allergens in foods
5. Risks/benefits of botanicals/herbals in food supplements	-	16. Food-borne viruses (in general, e.g. Hepatitis A and Norovirus in fruit and vegetables)	23. Presence/detection of environmental contaminants in food (e.g. from agricultural, industrial or household sources)	-
6. Allergenicity/ food allergens in general (risk assessment and management)	-	17. Campylobacter (e.g. in poultry and ready-to-eat foods)	24. Cocktail effects (health risk assessment of chemical mixtures, e.g. food additives)	-
7. Aggregated exposure (via cocktail effects, but including environmental/ food exposure)	-	18. Zoonoses (in general, including bio-hazards, MRSA etc.)	-	-

EU RAA/EFSA food safety priorities

22. The impact of chemicals on the ecosystem (release of chemicals into the environment)

You should:

- By September 9., 2016: Express interest to your national EFSA Advisory Forum member
(<https://www.efsa.europa.eu/en/people/afmembers>)
- 2017: Establish consortium, outline project, find funding source on list from EFSA AF
- «Exposure and risk assessment of pesticides in the environment in the Northern Zone»

Engage with EFSA

Support and help to guide our work

Registered stakeholders can engage with EFSA through a combination of standing and ad-hoc platforms, according to their interests and expertise



Stakeholders

Have your say

Share your insights, data and other feedback on draft versions of our scientific assessments and corporate initiatives



Consultations

Attend an open meeting

Our scientific experts open a selection of their meetings to the public – you can follow their work up close, ask questions and discover how experts assess food safety



Observers

Submit your data

Data is crucial for EFSA's scientific assessments. We collect data from providers in Member States, the European Commission, research institutions and industry



Calls for data

Engage with EFSA



Stakeholders

Consultations

Closed consultations

Public consultations planner

Calls for data

Observers

Colloquia

Careers

Innovation prizes

Public consultation on the active substance propiconazole

Deadline: 4 October 2016

Rapporteur Assessment Report

How to submit comments

- Comments on rapporteur Member State assessment reports should be sent by email to EFSA (pesticides.peerreview@efsa.europa.eu) no later than the deadline given for the particular active substance. Please use the electronic template for submission of comments.
 - [Electronic template](#) (0.2 Mb)
- Comments will not be considered if they:
 - are submitted after the deadline set out in the call
 - are not related to the contents of the document
 - contain complaints against institutions, personal accusations,

Subject area



Pesticides






Nordic-Baltic Pesticide Fate Network

Pesticide fate in soil and water in the northern zone



Create a social group on web for knowledge sharing:

- LinkedIn  450 mill. users
- Facebook  1700 mill. users
- ResearchGate  3 mill. users
- Others?



Pesticide & Chemical Policy Network

1,834 members

[✓ Ask to join](#)

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Head of Marketing - Agribusin...

OWNER



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Gareth Moore

Content Marketing Manager



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Product Marketing Manager a...

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Katri Siimes

research scientist at SYKE



Lise Gunn Skretteberg

Engineer at Glava

ABOUT THIS GROUP

The Pesticide and Chemical Network is your hub for regular discussion with industry peers and experts, alongside news, insight and analysis on the regulation, legislation and litigation of pesticides and toxic substances.

Members are encouraged to share their industry knowledge and views, ask questions, and interact with the industry professionals gathered in this group.

Regular news, insight and analysis will be

Facebook



pesticides research
Lukket gruppe

Bli medlem av gruppen

Bli medlem av denne gruppen og se diskusjonen, innlegget og kommentaren.

+ Bli medlem av gruppen

MEDLEMMER

55 medlemmer



BESKRIVELSE

forensic

OPPRETT NYE GRUPPER

Grupper gjør det enklere enn noen gang å dele med venner, familie og lagkamerater.

Opprett gruppe

OPPRETT NYE GRUPPER



09.09.2016

Venner som liker Tomb-

Medlemstall (55)

Se alle

Øvrige medlemmer



Omār Samir
Smile Nana
Rania Zayed
Mohamme d Elnakeeb
Rody Ahmad
Heba Allam



Situhom Elsayed
Soad Elsobkey
Noha Ahmed
Hager Abd Al Naser
Nour Mohamed
Noha Mosa



Hager H. Haggag
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