The Future of Crop Protection in the EU

8th April 2019
The Residence Palace, Brussels
Agenda

• Introduction
  Janez POTOČNIK - RISE chairman

• Report of RISE project: The Future of Crop Protection in the EU
  Allan BUCKWELL

• Panellists
  Michael HAMELL – Adjunct Prof. Univ College Dublin
  Per KUDSK – Dept Agroecology, Aarhus Univ
  Klaus KUNZ – Bayer Crop Science

• Closing Remarks
  Allan Buckwell & Janez POTOČNIK
Crop Protection in the EU

• RISE study, Jan ‘19 to April ’20, by Allan Buckwell, Evelyn de Wachter & Annabelle Williams plus independent expert Advisory Committee

• Outline
  • Context: unhappiness with current situation
  • Why crops require protection, how it is done
  • The regulatory framework
  • The crop protection tool kit - current and prospective
  • What is happening to PPP usage?
  • Progress with Integrated Pest Management
  • What alternative strategies and options?
Unhappiness with current situation

• **The public, politicians**: constant references to reducing pesticide use to protect health, eg Macron
  • Yet also concerns about feeding a growing, enriching population, in the teeth of climate change

• **Farmers**: perceive the tool box to deal with weeds, pests & disease is depleting whilst threats are increasing

• **Plant protection industry**: rising costs, time and unpredictability of regulatory system threatens innovation

• **Environmentalists**: climate damage, pollution of water, air & soil, + biodiversity degradation from intensive agriculture

• **Regulators**: disappointing impact of legislation e.g. the Sustainable Use Directive (SUD)
Why crops require protection, how it is done

• **Threats**: weeds, fungi, bacteria, insects, molluscs . . .

• **Impacts**: reduced yield – quantity, quality, predictability, increased costs.

• **Types of protection**
  • **Prevention**: variety, culture, rotation, soil management, maximise plant resilience & natural defence mechanisms
  • **Vigilance**: early detection and removal
  • **Mechanical** removal of weeds or disease/spreading agents
  • **Synthetic Plant Protection Products** including basic substances: herbicides, fungicides, pesticides, others,
  • **Biologicals**: insects, beneficial fungi, mycorrhizae

• Clear benefit / cost ratio for PPP use for farmers
The regulatory framework

• Key regulations:
  • Directive 91/414/EEC concerning the **placing of plant protection products on the market**
  • Regulation 396/2005 on the **maximum residue levels (MRL)** tolerated in or on our food or feed
  • Regulation 1107/2009 concerning the **placing of plant protection products on the market** repealing Dir. 91/414/EEC
  • **Sustainable Use Directive** SUD (2009/128/EC) and its implementation through National Action Plans (NAPs)
  • Plus enviro. regulations: birds, habitat, water & drinking water
  • EU regulates Active Substances, MS do Plant Protection Products
  • **REFIT exercise 2018** : effectiveness, efficiency, relevance, coherence, and the EU added value of 1107/09 & 396/05 (not SUD)
Impacts of these regulations

• How have they affected availability of active substances and PPPs?

• Have there been noticeable affects on use of pesticides?

• To what extent could we detect beneficial impacts for human health or the environment?

• Complex to trace numbers: must distinguish: existing active and new active substances, basic substances & biologicals

• Other complications: which products? Different stories amongst Member States; active substances vs PPPs; derogations when no alternatives; temporary & emergency use authorisations; illegal use.
Numbers of active substances and plant protection products
Active substance availability under Dir. 91/414/EEC; the story 1993 - 2009

Figure 2.1 Development of the number of available active substances in the EU between 1993 and 2010

Source: European Commission

Figure from the Ecorys REFIT study, Oct. 2018
Active substance availability under Dir. 91/414/EEC in 2009

Figure from DG SANCO Factsheet on EU Action on Pesticides, March 2009

Active substances available for each country for 2010 and 2016.
(Source: REFIT evaluation study Annex III, MS survey)
Change in PPP availability by MS 08/10 & 14/16

Percentage change available PPPs for 2014-2016 compared to 2008-2010.
(Source: REFIT evaluation study Annex III, MS survey)
Active substances in PPPs; EU, 2010-2017

Figure 4.4  Overview of the average number of active substances authorised in PPPs in EU countries per pesticide group (fungicides, herbicides, and insecticides)

Source: EU Pesticides database

Figure from the Ecorys REFIT study, Oct. 2018
Usage of pesticides
Pesticide sales in the EU, 2011 - 2016

Figure from the European Environment Agency (EEA)

Pesticide sales in the EU, 2011 - 2016

Source: Eurostat pesticides sales (aei_fm_salpest09)
Global pesticide use

Pesticide use. Source: FAOSTAT.
Global pesticide use per hectare of cropland

Pesticide use per area of cropland. Source: FAOSTAT.

- Brazil
- Canada
- China
- India
- US
- EU

kg/ha

Some conclusions of the Ecorys report

• “The approval criteria for active substances in Regulation 1107/2009 are among the most stringent in the world”.
  - Many technical criticisms about the process especially its timeliness, delays and lack of predictability
  - “The total number of available active substances has not significantly changed since the entry into force of Regulation 1107/2009”
  - Non-approval, non-renewal or withdrawal of 23 substances has reduced health risks. Likewise for 15 substances no longer approved on environmental grounds reduces risks for groundwater, soil and wildlife.
  - “The claim that EU agricultural competitiveness has been negatively affected is not supported by evidence.”
  - Overall the two regulations are overall effective and relevant. The Regulations allow a higher level of harmonisation across MSs that enhances the functioning of the internal market and protection of the health of consumers. Still, there is room to improve.

• Response of the Commission is awaited
Now turn to the Sustainable Use Directive – which has not yet been evaluated
Provisions of the SUD

INTEGRATED PEST MANAGEMENT

RAISE AWARENESS

INFORMATION SYSTEMS

INSPECTION

AERIAL SPRAYING

PROTECTION

SENSITIVE AREAS

TRAINING

INFORMATION SYSTEMS
What is Integrated Pest Management?

1. Prevention and/or suppression
2. Monitoring
3. Decision-making
4. Non-chemical methods
5. Pesticide selection
6. Reduced pesticide use
7. Anti-resistance strategies
8. Evaluation

IPM triangle from PAN-Europe
Progress with the National Action Plans

• **Purpose of NAPs** – to set objectives, measures, timetables & indicators ... to reduce risk and impacts of pesticide use on human health and environment

• **First set of NAPs (14/12/12)**
  
  • 21 MSs reported **risk reduction targets**  9 MSs reported **use reduction targets**, 5 MSs set **measurable targets** (BE, DK, EL, DE (risk reduction) & FR (use reduction))

• **FRANCE**
  
  • The **first NAP** in Ecophyto plan 2008, aimed **50% reduction by 2018** wrt 2008 usage **not** achieved.
  
  • The **2nd NAP, Ecophyto II, 2018, 25% reduction by 2020, 50% reduction by 2025**

• **DENMARK**
  
  • **First NAP**, 2013-2016: **reduce pesticide loads**, using Pesticide Load Indicator (PLI) **by 40%** by the end of **2015**, compared with the loads in 2011. **Achieved**.
  
  • **2nd NAP**, 2017-2021: objective - use of pesticides must follow the principles of IPM while continuing to prevent resistance. This corresponds to **maintaining the current target** of a PLI of 1.96.
Drawing these threads together

• Much streamlined availability of active substances: many hazardous substances removed from the market
• Improved application technology and knowledge by operators
• Impacts on competitiveness contested, especially prospects
• SUD envisaged IPM would enable steady reduction in harmful effects of pesticide use by restricting synthetics to the minimum required as last resort - is this being realized?
• Implementation through NAPs, slow progress, but little direct policy help
• What signs of success of IPM? Are we ready to conclude slow or no progress?
• What are the lessons? What is inhibiting IPM reduce PPP use?
What further and future strategies, options and innovations?

• Overriding political desire to reduce harm from pesticides which elides into reducing use of pesticides.

• More active assistance to drive IPM which shows results.

• Forecasting, detection, optimal & precision treatment, big data, drones, robotics

• Internalising the plant protection – gene editing, NBTs

• New service-based crop protection model; could it make a difference?

• Downsizing EU consumption & production through less intensive, lower yielding crop production, agro-ecology . . . and trade implications?
Final words

• This indicates the range of issues we have so far identified

• What are we missing? What have we got wrong? What other strategies have we overlooked?

• Now we want to gather other people’s perceptions and ideas for the future of crop protection.
Thank you!

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#crop protection

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Discussion with the audience

Closing remarks

Allan Buckwell & Janez POTOČNIK – RISE Foundation