

New Technologies: Drivers, benefits and challenges

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(Views expressed here are those of the presenter and do not necessarily represent those of the OECD.)

New Technologies: Drivers and Benefits

- Technological advance established feature of agricultural production/pesticide use.
- Pace increasing and impacts more profound on our regulatory regime.
- Big data, AI, remote sensing, robotics (GM also). Improve targeting and timing of application.
- Also, improvements to existing spraying /application technologies.
- Attractive to politicians and policy makers (innovation and precision agriculture agenda).
 - contribution to minimisation/reducing use,
 - upskilling of sector, etc,
 - improve productivity (stagnating in second half of 20th century),
 - reduce costs and inputs, improve profitability,
 - reduce administrative burdens;
 - address issues with labour supply/good working conditions,
 - promote the availability of healthy foodstuffs,
 - provide resilience for society in the face of geopolitical challenges, climate change, water availability, etc
 - promote green growth and decarbonisation of the agriculture sector (lagging behind compared to others).
 - Efficiencies to operation of regulatory processes (improve service delivery/lower costs).



Planetwatchers



Ecorobotix



Supermicro

Other innovations: Rules as Code, Digital Labels, Artificial Intelligence

- Rules as Code ([OECD paper](#))

- Takes legislation, regulations, guidance and policies and turns into machine-readable code so they can be understood and interpreted by computers.
- Exists alongside the natural language version (it does not replace it) to facilitate digital service delivery.
- Potential to 'automate' processes and bring greater certainty to business by reducing the 'interpretation gap' when complying with legal requirements and associated guidance.



OECD

- Digital labels ([AgriGuide](#) project and OECD initiative).

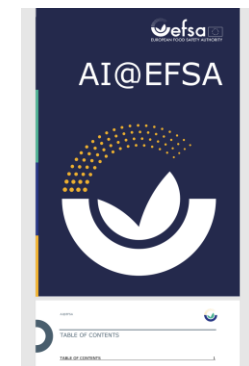
- Case for their development is persuasive: allowing regulators to increase the sophistication of mitigation (improving availability); whilst same time aiding compliance amongst users.
- Eventually the technology will integrate fully with machinery to 'automate' spraying processes taking account of site and time specific conditions and generate records of pesticide applications.
- AgriGuide developed by CropLife Europe and maintained by major authorisation holders. Many digital versions of labels for many EU countries.



AgriGuide

- Artificial Intelligence

- Use by crop protection companies in generating information to support applications for pesticide authorisations. [EFSA](#) activity.
- Use by Authorities to check application documentation, datasets, consultation responses.



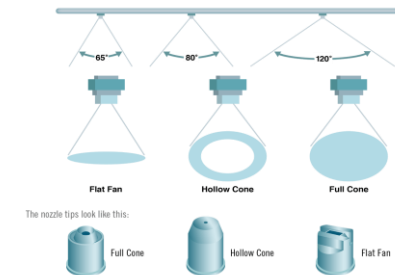
EFSA

Discussion: Drivers and benefits

- Agriculture a key industry for Moldova (12% of GDP, 21% of workforce, 45% of exports and increasingly rapidly in value).
 - What are the national drivers/conditions that might promote innovation and adoption of new technologies?
 - What new technologies are available to farmers and what opportunities do they have to adopt these?
 - Are there particular farming sectors that are best placed to benefit from innovative approaches and new technologies?
 - What is the view of the Authorities on the desirability of promoting innovation and new technologies in farming?
 - Has the development of AI tools resulted in Authorities considering new ways of working?



Sprayers 101



FBN



AgriLand.ie

New Technologies: Challenges and barriers

- How can Authorities:
 - Use regulatory regimes and processes to (at worst) not impede or (ideally) facilitate adoption of relevant new technologies. Incorporate in existing/develop new approaches (more on this later).
 - Determine which of the many new technologies and innovative approaches will develop/be adopted in ways that necessitate a regulatory response. And how might the way such technologies interact determine the impact they have/possible response required.
 - Ensure society has access to necessary supporting infrastructure (physical and digital infrastructure, machinery, skilled labour etc).
 - Promote behaviour change in relevant sectors of society – impact of cost/investment.
 - Address issues such as data-sharing/protection.
- Progress likely to be shaped by a combination of local market demand, technological capability, culture, regulatory environment, etc and international engagement (EU candidate country status).



Agrifac Machinery B.V.



AutoSpray Systems



Crop Services Ltd

Discussion: Barriers

- Are you aware of innovations and/or new technologies that would be helpful but are currently unavailable to Moldovan farmers? – both in generally (for all farming) and at a sector specific-level?
- What are the main barriers to the adoption of innovative approaches and new technologies in Moldova?
- What can the Authorities do to address these barriers and encourage adoption?



FAO



Radio Moldova



MoldPres

Conclusions

- Precision agriculture and new technologies – always a feature of pesticide application. But speed and impact of change, adoption of practices and ability to control now exerting pressure on regulatory regimes to adapt to encourage use and unlock benefits for society.
- Are a variety of drivers that incentivise use of new approaches and technologies, but also barriers that can impede adoption.
- Many factors will dictate what new approaches and technologies are adopted.
- Challenging and exciting times that require all interested parties to pool knowledge, expertise and other resources to optimise benefits.

Thank you

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