EU audits on pesticide residue controls in organic production – Key Findings

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Health and Food Safety

Who are we?

Directorate for Health and food audits and analysis

within DG Health and Food Safety / European Commission

Grange, Ireland

180 professionals, including

- 90 auditors
- Veterinarians
- Agronomists
- Food scientists
- Other specialist qualifications

https://ec.europa.eu/food/audits_analysis_en

Background on project

- Pesticide residue testing is **one** aspect of controls in Organic Production;
- Legal requirement to check 5 % of organic operators in place since 2014;
- Project to help Member States implementing effective controls for pesticide residue testing in organic production;

Background – MRLs for food safety

- Sampling of products on the market;
- Where no residue trials exist, the maximum residue level (MRL) is set at Limit of Quantification;
- Default MRL for other pesticides: 0.01 mg/kg;
- Uncertainty factor of 50 % applied to result, and considered for MRL exceedance, not for LOQ

Background – Methods used for pesticide residue analysis

- No official methods prescribed;
- Multi-residue methods requiring gas chromatography (GC) and liquid chromatography (LC);
- Single residue methods;

Background – Criteria for food safety analysis for pesticides

- Range of pesticides ("scope of analysis"):

  Defined in annual EU Control programme;

- Sensitivity of methods:

  Linked to MRL

Questionnaire on pesticide residue testing in organic production sent to all Member States in 12/2014

Audits *in five Member States:*

UK (01/2015)

Poland (06/2015)

Germany (09/2015)

Spain (03/2016)

Finland (04/2016)

Competent Authorities

Good communication between authorities for pesticides residues and for organic production:

- improves the understanding of pesticide residue related questions;
- contributes to the effectiveness of the controls;

Number of samples per year

Taken by Competent authority: ***2,064***

Taken by Control Body/Authority: ***20,820***

Number of operators sampled: ***16,188***

Percentage of non-compliant operators: ***5.8 %***

Pesticide detections:

- **Non-authorised use:** **2.9 %**
- **Spray drift:** **2.9 %**
- **Other reasons:** **2.7 %**

Sampling at Organic Operators (1)

- **High number of samples** => high level of controls;
- Official Guidance documents on sampling procedures in place , but…
- …often no clear procedures on sampling during the production process (e.g. leaves, soil and water).

Sampling at Organic Operators (2)

- Official sampling procedures not suitable to **identify spray drift** of pesticides from neighbouring plots;

Authorities estimated that one third of samples containing pesticide residues relates to spray-drift;

- Mistakes with implementation of sampling procedures by control staff;
- Interpretation of laboratory results may be affected by a sampling procedure which is not fit for its purpose.

Laboratories....

Designation of laboratories by authority:

- **Yes: 39 %**
- **No: 61 %**

Scope of analysis defined by:

- **Competent Authority: 32 %**
- **Control Body/Authority: 83 %**
- **Laboratory staff: 24 %**

Laboratories

- Average number of pesticides offered in test: 375
- Same methods as for conventional: 88 %
- Single residue methods offered: 60 %
- Lower reporting limits offered: 21 %
- Member of reference laboratory network: 34 %
- Participation in EU Proficiency tests organised by EU Reference Laboratories: 57 %

Laboratory analysis (1)

- **Equipment** for **broad range of pesticides** and **high sensitivity**; **good results from proficiency tests**;
- **Lack of official criteria** for the methodology of analyses impacts negatively on the control system;
- Gas chromatography is used as the only laboratory detection technique in cases, these analyses do not include many of the relevant pesticides.

Laboratory analysis (2)

- SANTE Guidance on quality control in pesticide residue analysis considered by some accreditation bodies

https://ec.europa.eu/food/sites/food/files/plant/docs/pesticides_mrl_guidelines_wrkdoc_2017-11813.pdf

- Lack of notification of laboratories to the NRLs
- This obstructs:
  - exchange of information and knowledge provided by the network of NRLs and EURLs,
  - participation in official proficiency tests.

Investigation threshold – action level

- The LOQs applied on organic produce varied;
- Thresholds for investigation (action levels) applied by some Control Bodies:

➢ **investigations initiated for results above 0.02 mg/kg, as in babyfood legislation, to take account of measurement uncertainty;**

➢ **processing factors applied (e.g. up to factor 10 for spices) before deciding on investigation.**

➢ **Linking measurement uncertainty with LOQ is technically incorrect: any result at or above the LOQ can be quantified;**

Investigations (1)

Official procedures in place:

- **During the investigations, the organic produce is blocked and not certified (exceptions for low levels);**
- **The level and nature of investigations varied;**
- **In some CBs, low levels of residues (e.g. 0.01 - 0.02 mg/kg), lead to a letter to the organic operator, informing them of the result, and asking for an explanation.**

Investigations (2)

- Pesticide residues **often detected on leaves**. Some CBs applied mathematical models to determine whether the residues result from unauthorised pesticide use; no on-the-spot visits;
- **Spray drift** from neighbouring fields, and other reasons for contamination, are considered acceptable, if sufficient precautionary measures are taken;
- **No official criteria to decide on the adequacy of precautionary measures**: case-by-case judgment, no consistent rules apply.

Investigations (3)

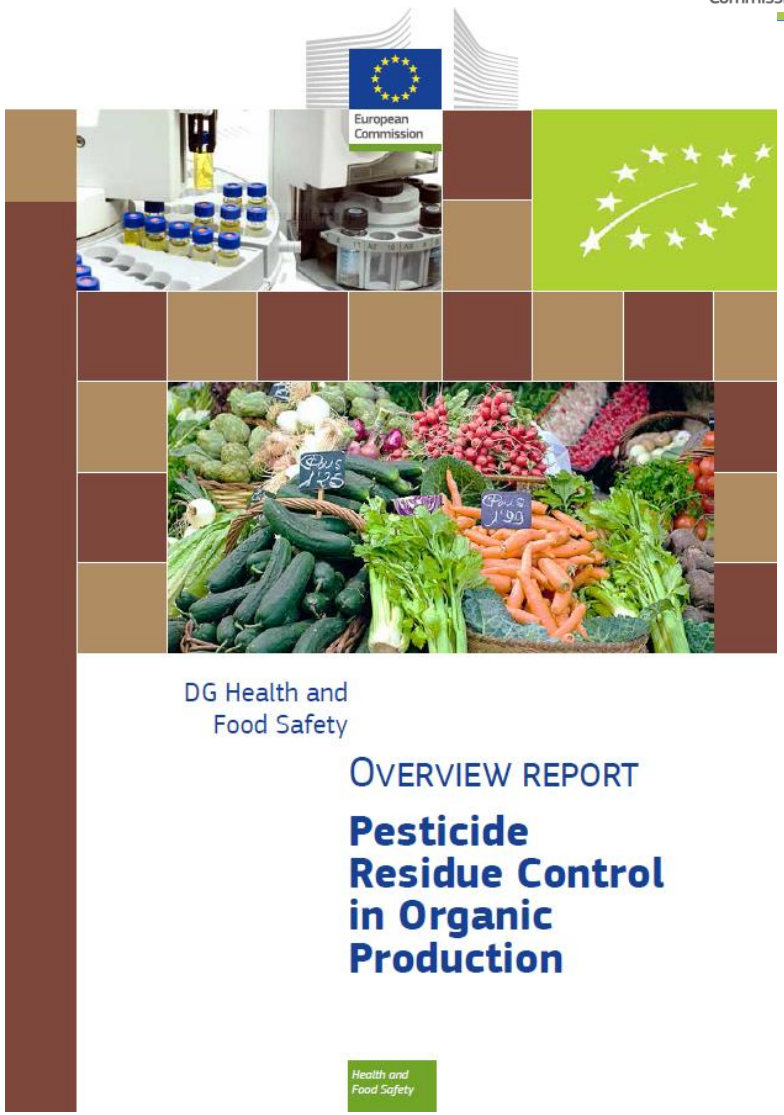
- In some Member States: systematic on-the-spot investigations, to follow up case-by-case:
  - visits to neighbouring conventional farms;
  - taking of additional samples;
  - inspections of pesticide records of these neighbouring farms;
- On-the-spot investigations can be labour intensive, and not always conclusive;
- Sustainable Use of Pesticides?

Enforcement and Reporting

- In two of the five Member States/Regions visited all detections of pesticide residues above the LOQ lead to enforcement action and sanctions;
- Measures were always taken when irregularities and infringements were identified;
- None of the five MSs visited had fixed threshold levels in place above which enforcement action was to be taken;
- Procedures in place to regularly inform the authorities.

Conclusions on Enforcement

- Pesticide residue testing in organic production is a suitable tool to identify issues related to pesticide residues;
- Guidelines provide extensive information to investigate pesticide residue detections case-by-case.
- **The difference in official criteria** for interpretation and follow-up of pesticide residue detections **impedes consistent treatment** regarding compliance**.** This is particularly evident for **low levels of pesticide residues**.



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Thank you!