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

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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

- 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.
OVERVIEW REPORT

Pesticide Residue Control in Organic Production

Published on Commission website
Thank you!