

Brief Information about Pesticide Residues in Organic Products

1. Introduction

Organic farming is still a niche activity amidst a world where **conventional farming predominates**. At the same time, with the growth of the organic market, with longer and more complex supply chains, unavoidably there is also an increased risk of **fraud**. Therefore, both the European Regulation on Organic Production (EC) 889/2008, Reg (EU) 2018/848 and its delegated and implementing acts, CERES Equivalent Standard to Reg. (EC) 834/07, including their annexes for Third Countries and NOP require certifiers to take samples from a **minimum of 5%** of their clients every year. In addition, many players on the organic market take and test their **own samples**.

2. What organic standards say about residues

- The **European Regulation** on organic farming does **not establish specific maximum residue levels (MRLs) for organic products** so far. Some EU member countries (e.g. Belgium, Italy, and Czech Republic) have established such "organic MRLs". However, for the time being, in most member countries, just the general MRLs established for conventional food apply. Nevertheless, residues raise suspicion that non-allowed methods might have been used in production, or conventional products might be sold as "organic".
- The US National Organic Program (**NOP**) establishes specific MRLs ("tolerance levels") for organic food. These are set at **5% of the general tolerance** established for conventional food. If no specific MRL is established for the specific product / pesticide combination, a default tolerance of 0.01 mg/kg applies. Meaning that any products with residues above 0.01 mg/kg must be downgraded to conventional in such cases – regardless of the origin of the residue.
- The Japanese Agricultural Standard (JAS) for organic farming does not establish specific maximum residue levels (MRLs) for organic products so far, because JAS follows a zero-residue policy for not allowed inputs.
- Legislation in some organic markets (e.g. China, Korea, Taiwan) follows a zero residues policy.

3. What do test results tell us?

Some people believe that pesticide residue tests will tell them if a product is organic or not. This is not the case. Let us look at the following scenarios and their interpretation:

Scenario	Interpretation	Follow-up by CERES
No residues found	This is good news ! However, it is not sufficient to show the product is organic. Pesticides could have been used at an early stage and disappeared at the time when the sample was taken. Or pesticides might have been used, which are not covered by the scope of the test. Chemical fertiliser use is very difficult to discover through laboratory testing.	Normally not required
Residues found around or below 0.01 mg/kg	Many people say, "this is below the limit established by organic associations, therefore the product is organic ". This is not correct . The low level of residues may be due to: a. Unavoidable drift, b. Degradation of residues between the time of an application and the time of sampling, c. Mixing of contaminated with not contaminated lots.	Normally , CERES will start an investigation
Higher residues found	The higher the residues (and/or the bigger the number of different substances found), the stronger the suspicion that pesticides might have been used, or that conventional products are being sold as "organic". It depends on the crop and the circumstances, what we consider to be a "high" level of residues.	CERES will start an investigation

4. What are the organic operator's obligations?

Whenever an organic producer, processor or trader is informed about residues found in his/her organic products or in products bought or sold by the operation, he/she is obliged to:

- a. Immediately **inform** the **certification body** (CERES in our case),
- b. **Investigate** the origin of the problem,
- c. Make sure that **the affected lot and other lots** that might be affected by the same problem, are not sold with any reference to organic, while the investigation is ongoing,
- d. **Inform** his/her **customers** in writing if any lots sold to them do not comply with organic standards.
- e. Make sure that the **origin** of the problem is **eliminated**, so that the problem does not occur again.
- f. Record the case in the operation's "**complaint record**", including the origin and the actions taken.

Please refer to Regulation EC 889/2008, Art. 91(1), Reg. (EU) 2018/848, Art. 29, Reg.(EU) 2021/279, Art.1 and the CERES certification contract. Not informing the certifier of residue cases is a severe non-compliance.

Some traders and processors have established a practice of testing samples from different suppliers, and then only buying from those who submit residue free samples. This is good practice in terms of quality assurance – as long as the responsible certification bodies are informed about the positive samples. If this is not the case, this procedure is unacceptable, because these traders and processors knowingly help hiding potential fraud.

5. What is needed to make a test result credible?

When we receive test results for samples not taken by CERES, the following criteria apply:

- a. The **laboratory** should not only be accredited, but also have **wide experience** in the field of pesticide residue testing,
- b. There should be a **complete set of documents** showing that the affected batch actually comes from the producer / processor / trader it is claimed to come from,
- c. Many players in the organic market have their quality assurance departments, which follow strict procedures when taking samples. But of course, a sample taken by a third party (e.g. control body) is more credible than a sample taken e.g. by a trader.

6. Obligations of the Internal Control System (ICS) at certified producer groups

In the case of producer groups with ICS, both the prevention and identification of non-conformities at the producer level, and systemic measures are the main tasks of the ICS. CERES, through its audits, only inspects a sample of all the producers in order to verify if **the ICS is capable of ensuring the producers' compliance with the regulations, and of giving adequate follow-up if not**. Analysis is one of CERES' main instruments to verify whether the ICS is effective or not. Therefore, when pesticide residues are detected at the producer group level, this is often an indicator that the ICS does not effectively detect serious NCs at the producers. The most frequent non-conformities in the context of residues of prohibited substances are:

- a. **Use of prohibited pesticides** by member farmers
- b. **Commingling** with non-certified product at farm or storage level

Other possible sources (e.g. drift, cross contamination) normally do not lead to the presence of significant residues.

For the follow-up of such cases and for the prevention of future cases, the role of the ICS is crucial. The ICS should consider the following measures:

- a. **Identify the cause** of the residues through additional visits, interviews with neighbours, sampling. Very often **a single producer** is identified who allegedly caused the problem, when that is **highly unlikely**. Many times, there are more producers with similar non-conformities. For example: If residues of a pesticide of for example 0.03 mg/kg are found in a sample of a

container with the production of 30 different smallholders, the explanation that one single smallholder caused those residues, is not very plausible. The product delivered by that farmer must have had almost 1 mg / kg, so that after dilution the indicated value is still found. However, residues of that level are very rarely found, even in conventional products!

- b. **Go further:** Not only investigate at the level of the producers where the residues were found but identify all non-compliant producers. To do this, make additional visits at times of greatest risk of commingling with non-certified product (i.e. harvest time) or of application of prohibited inputs.
- c. Analyse **weaknesses in your system**, define measures to remedy them and ensure that, in the long term, the ICS detects serious NCs effectively and before the certifier. In that context, the following steps are useful:
 - i. Sufficient supervision of product flow
 - ii. Adequate quantity control mechanisms
 - iii. Verification and documentation of possible double or triple producer memberships in various group programs
 - iv. Adequate and individual risk analysis for each producer
 - v. Sufficient additional control measures (unannounced inspections, sampling, etc.), based on the identified risks
 - vi. Quality and professionalism of internal inspectors and their inspection methods

Typically, after the ICS has identified weaknesses and defined a plan of action, CERES must evaluate that plan and decide if it is sufficient. After the implementation of the measures by the ICS, CERES must verify, usually through additional visits and sampling, whether the implemented measures were efficient. Based on that, CERES will decide if the certification can be maintained.

7. What happens with the affected products while we are investigating?

Articles 28, 29 and 45 of Regulation (EU) 2018/848 and its delegated and implementing acts, including their annexes for Third Countries, Regulation (EC) 889/2008, Art. 91(2) says: "Where a control (...) body has a substantiated suspicion that an operator intends to place on the market a product not in compliance with the organic production rules but bearing a reference to the organic production method, this control (...) body can require that the operator may provisionally not market the product with this reference for a time period to be set by that control (...) body." Therefore, **if the suspicion is "substantiated"**, CERES must make sure the operator **does not sell organic products while the investigation is ongoing**. This provision applies to the European Regulation, not to NOP. However, also under NOP, the operator has a responsibility to ensure that non-compliant products are not placed on the market.

8. CERES procedures in investigation cases

As a control body, **CERES has the obligation to investigate**, whenever it has the suspicion that a certified operator does not comply with the rules. As already explained above, the presence of non-allowed pesticides in samples of organic products represents a case of suspicion. But there are also other types of analyses that can lead to suspicions and therefore investigations (GMOs, nitrogen isotopes, radiation, etc.).

Investigations at CERES are handled by the specialists of the irregularities department with competence in interpretation of analytical results and follow-up in cases of irregularity. **The purpose of these investigations is to determine the cause of the residues** and possible non-conformities on the part of the certified operator. Based on this, the measures to be taken are defined (i.e. request corrective actions, decertification of lots, crops or operators).

Investigation methods, used by control bodies, include data collection, traceability checks, communication with other certifiers/experts, investigation letters to the certified operator, follow-up inspections, sample taking.

If the analysis of a sample, taken by CERES during an inspection of an operator, reveals prohibited substances, each operator has the right to request, at his/her own cost, **the analysis of the counter sample** in a CERES-approved and qualified laboratory. Note that samples can only be sent after CERES has provided the necessary **instructions for shipment and approved laboratories**. The **deadline** for requesting such analysis is normally **one week after receiving the notification**. In case of contradictory results, a second counter-analysis must decide whether the investigation is continued, or the case is closed.

9. Costs for investigation

Follow-up investigations are often costly. CERES must **invoice the respective costs and working hours to the clients** in whose products the residues were found. For more information please also see Invoicing rules, 3.3.0 and your contract with CERES.