




FOOD
SAFETY &
QUALITY

Pesticide residues

Pesticide analysis fruit and vegetables, cereals and their products

Plant protection products, the so-called **pesticides**, are fundamental in conventional primary production to keep crops in good health.

Their use is regulated at European level, but **residues can remain on the agricultural products and soil for a long time**, thereby becoming part of the finished product and representing a **potential danger to consumers' health**.

The amount of residues must not exceed the **Maximum Residue Limit (MRL)** envisaged in food, feed and processed products as specified in **Regulation (EC) no. 396/2005**.

Mérieux NutriSciences determines pesticide residues in food and feed according to the analytical principles of SANTE/11813/2017, "Guidance document on analytical quality control and method validation procedures for pesticides residues analysis in food and feed" and the **official method UNI EN-15662**.

We specialize in the testing of residues in:

- Fruit and vegetables and their products
- Nuts
- Legumes
- Cereals and their products

State-of-the-art equipment

Mérieux NutriSciences uses state-of-the-art equipment for the specific determination of pesticide residues on food matrices, including:

- 12 GC-MS/MS triple quadrupole
- 28 LC-MS/MS triple quadrupole
- 6 GC-MS
- 5 GC-MS Head-space
- 3 GC-ECD/FPD
- 3 HPLC preparative
- 3 HPLC-DAD



Analytical determination of pesticide residues

Multiresidual Triple quadrupole GC-MS/MS analysis coupled with Triple quadrupole LC-MS/MS with possible LoQs at 5 and 10 ppb

More than **900 molecules accredited** and their metabolites

Analysis of **anionic and cationic pesticides**

Accredited simultaneous analysis of **AMPA and Glyphosate**

Compliance with **2018 update of UNI EN:15662**, envisaging **dedicated analytical procedures with preliminary hydrolysis before QuEChERS extraction for the molecules** – as per Regulation no. 396/2005 – which include esters and conjugates of active principles: **Fluazifop, 2,4-D, Aloxifop, Acibenzolar-s-methyl**, etc.

Specific analytical plans according to the origin of products

Accredited tests on **nitrites, nitrates** and **heavy metals**

More than 50 Proficiency tests/year, for an average of about 1,000 processed results, more than **97% with successful outcomes**

Z-score da Proficiency Tests (PTs)

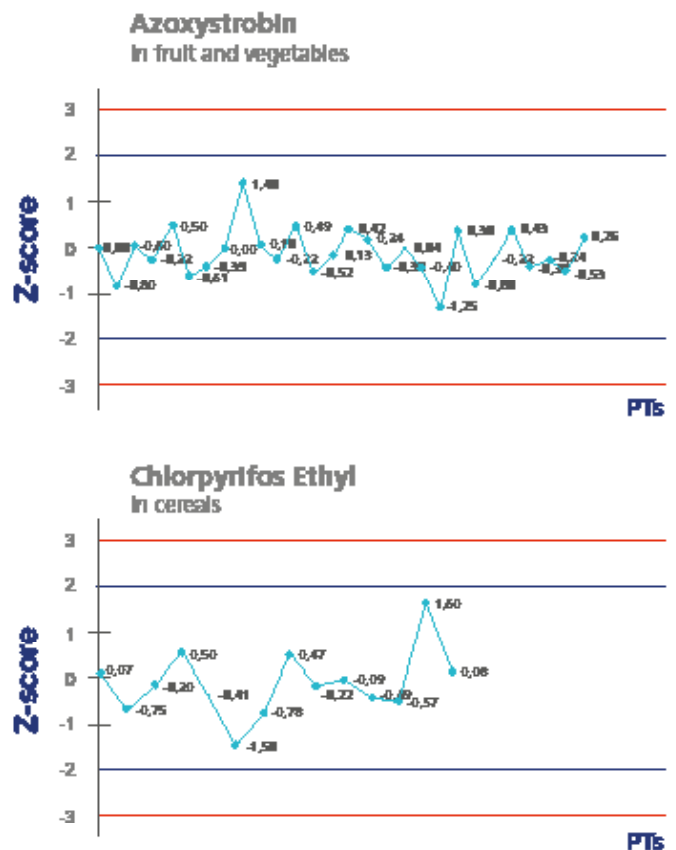


Figure: performance of the analytical measurement of Azoxystrobin in fruit and vegetables and Chlorpyrifos ethyl in cereals over 8 years. The abscissa shows the progressive number of Proficiency Tests which the laboratory participated in; the ordinate shows the score (z-score). All our results range between ± 2 z-score.

Why choosing Mérieux NutriSciences

- More than **40 years experience** in the sector
- **Recognized laboratory by the Ministry of Health for the control of residues and pesticides in organic food products**
- **QS approvation** for fruit and vegetables **export to Germany**
- **Belonging to the Fruit Monitoring** circuit
- Alignment with organic certification requisites as envisaged by **CCPB, ICEA, etc.**
- Compliance to **Coresta requisites on tobacco**

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