Food Safety analyses

NIBIO
NORWEGIAN INSTITUTE OF BIOECONOMY RESEARCH

Division of Biotechnology and Plant Health
Department of Pesticides and Natural Products Chemistry

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On behalf of the Norwegian Food Safety Authority, NIBIO performs chemical analyses for the official control of pesticide residues and plant toxins in food products. The control includes, among other things, fruit, berries, vegetables, cereals, and some composite products like baby foods and feed.

The laboratory is the national reference laboratory for the Norwegian Food Safety Authority in the field. Hence, the laboratory also contributes to composing sampling plans and reports. The laboratory was accredited in 1997 and has a flexible accreditation scope. Most of the methods are accredited. Quality assurance and expanding the scope of accredited methods is a continuous priority.

Analytical methods

The laboratory offers several methods, including large multi-methods and single residue methods. The two large multi-methods, M93 and M86, cover 380 compounds. Please note that these multi-methods are complementary. To cover all 380 compounds, analysis using both multi-methods would be necessary.

The single residue/substance methods cover one or more substances. The next page lists relevant analytical methods for the analysis of pesticide residues and plant toxins in food products and feed. More information about the various methods and included pesticides can be found on our website.

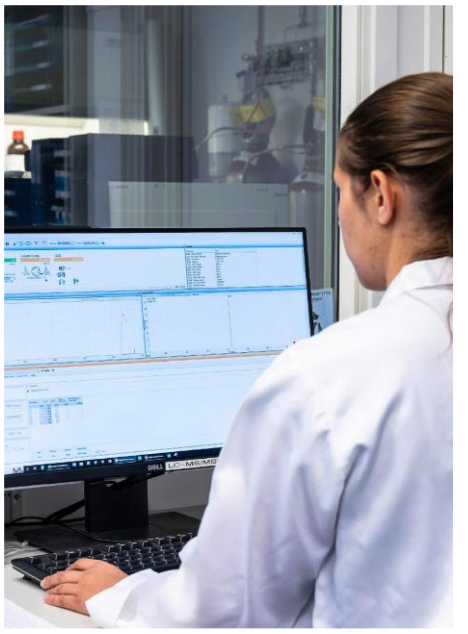

Photo: Erling Fløistad, NIBIO

Our analytical methods cover the most commonly used pesticides in Norway and abroad. With our experience and knowledge, we can assist in finding relevant analysis combinations at the agreed price. If you want to search for pesticides not specified in these methods, please do not hesitate to contact the laboratory.

Please visit www.nibio.no/en for sampling guidelines and information on completing the analysis request forms.

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Multi-methods

Method/parameter	Method	Accredited	Limit of quantification (baby food in brackets*)
GC-MS/MS Multi-method (107 compounds)	M93	Yes	0.005 – 0.05 (0.005 – 0.05) mg/kg
LC-MS/MS Multi-method (273 compounds)	M86	Yes	0.001 – 0.05 (0.001 – 0.05) mg/kg

Single residue/substance methods

Method/parameter	Method	Accredited	Limit of quantification
Dithiocarbamates; GC-MS of CS_2	M84	Yes	0.01 – 0.1 mg/kg CS_2
Acidic herbicides; LC-MS/MS (23 compounds)	M90	Yes	0.01 – 0.05 mg/kg
Ethephon; LC-MS/MS	M92	Yes	0.05 mg/kg
Quaternary ammonium compounds (QAC); LC-MS/MS (9 compounds)	M94	No	0.01 mg/kg
Chlormequat, mepiquat and cyromazine* LC-MS/MS	M100	Yes	0.01 mg/kg
Chlorate and perchlorate; LC-MS/MS	M104	Yes	0.01 mg/kg
Captan, chlorothalonil, dichlofluanid, folpet, and tolylfluanid; GC-MS/MS	M108	No	0.01 – 0.025 mg/kg
Glufosinate-ammonium; LC-MS/MS	M110	Yes	0.01 – 0.02 mg/kg
Total inorganic bromide; LC-MS/MS	M114	Yes	5 mg/kg
Glyphosate; LC-MS/MS	M115	Yes	0.05 – 0.1 mg/kg
Fosetyl-Al and phosphonic acid; LC-MS/MS	M116	Yes	0.75 – 2.0 mg/kg
Diquat and paraquat; LC-MS/MS	M118	No	0.01 – 0.02 mg/kg
Nicotine; LC-MS/MS	M122	No	0.01 – 0.3 mg/kg
Ethylene oxide; GC-MS/MS	M132	No	0.01 – 0.02 mg/kg
Opiates in poppy seeds and bakery products; LC-MS/MS	M133	No	0.1 – 0.5 mg/kg
Maleic hydrazide; LC-MS/MS	M138	No	1 mg/kg
Tropane alkaloids (atropine and scopolamine); LC-HRMS	M106	Yes	0.33 – 0.5 µg/kg
Pyrrolizidine alkaloids; LC-HRMS (28 compounds)	M112	No	10 µg/kg
Patulin (mycotoxin); LC-MS/MS	M102	No	0.0025 mg/kg
* Not accredited			
Plant toxins			

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