



2026/1210

10.6.2026

COMMISSION RECOMMENDATION (EU) 2026/1210
of 9 June 2026
on monitoring the presence of pyrrolizidine alkaloids in feed

THE EUROPEAN COMMISSION,

Having regard to the Treaty on the Functioning of the European Union, and in particular Article 292 thereof,

Whereas:

- (1) Pyrrolizidine alkaloids are toxins found naturally in a wide variety of plant species. Pyrrolizidine alkaloids are probably the most widely distributed natural toxins and affect wildlife, livestock and humans. It has been estimated that approximately 6 000 plant species may contain pyrrolizidine alkaloids, although direct poisonings in humans and animals seem to be associated with only a few species.
- (2) Livestock and domestic animals may be exposed to pyrrolizidine alkaloids by the consumption of forage and roughage contaminated with plants (or their parts) of *Senecioneae* and *Boraginaceae* spp. In particular, lucerne forage is occasionally contaminated with substantial amounts of pyrrolizidine alkaloids. Therefore, horses and rabbits may be more exposed than other livestock due to their high consumption of lucerne. Herbs, herbal mixtures and plant extracts used as feed that consist of, are produced from, or are contaminated with, plants (or their parts) containing pyrrolizidine alkaloids are another possible source of exposure of livestock to pyrrolizidine alkaloids, although these feeds generally represent only a small proportion of the diet.
- (3) The European Food Safety Authority (the Authority) Panel on Contaminants in the Food Chain (CONTAM) adopted a risk assessment in 2011 on pyrrolizidine alkaloids in food and feed⁽¹⁾. It concluded that even though all animal species are susceptible to both acute and chronic pyrrolizidine alkaloid intoxication, there is generally a low risk of pyrrolizidine alkaloid poisoning in livestock and companion animals in the Union as most pyrrolizidine alkaloid poisonings reported recently are due to accidental exposure.
- (4) Only limited occurrence data on the presence of pyrrolizidine alkaloids in feed are available in the Authority's database. Therefore, the Authority recommended that more occurrence data on pyrrolizidine alkaloids in feed should be collected in relevant feed commodities.
- (5) The Authority also recognised that there was a need for a method of analysis of pyrrolizidine alkaloids in feed that can be routinely applied in well-equipped laboratories to ensure reliable and comparable analytical results.
- (6) In the meantime, the European Union Reference Laboratory has published in 2020 an analytical method for the analysis of pyrrolizidine alkaloids in feed. In addition, in 2023 the European Committee for Standardization (CEN) has developed a standard for the analysis of pyrrolizidine alkaloids in feed (EN 17683).
- (7) It should therefore be recommended to monitor the presence of pyrrolizidine alkaloids in feed across the Union before considering possible risk management measures needed to ensure a high level of animal and human health protection,

HAS ADOPTED THIS RECOMMENDATION:

1. Member States are recommended, with the active involvement of the feed business operators, to perform monitoring for the presence of pyrrolizidine alkaloids in feed.

⁽¹⁾ EFSA Panel on Contaminants in the Food Chain (CONTAM); Scientific Opinion on Pyrrolizidine alkaloids in food and feed. *EFSA Journal* 2011; 9(11):2406. [134 pp.] <https://doi.org/10.2903/j.efsa.2011.2406>.

2. The following pyrrolizidine alkaloids are recommended to be analysed:

- intermedine/lycopsamine, intermedine-N-oxide/lycopsamine-N-oxide,
- senecionine/senecivernine, senecionine-N-oxide/senecivernine-N-oxide,
- seneciphylline, seneciphylline-N-oxide,
- retrorsine, retrorsine-N-oxide,
- echimidine, echimidine-N-oxide,
- lasiocarpine, lasiocarpine-N-oxide,
- europine, europine-N-oxide,
- senkirkine,
- heliotrine and heliotrine-N-oxide,
- jacobine, jacobine-N-oxide,
- jaconine, jaconine-N-oxide,
- erucifoline and erucifoline-N-oxide.

The following additional 14 pyrrolizidine alkaloids known to co-elute with one or more of the above identified 27 pyrrolizidine alkaloids, making use of certain currently used analytical methods are also recommended to be analysed:

- indicine, echinatine, rinderine (possible co-elution with lycopsamine/intermedine),
- indicine-N-oxide, echinatine-N-oxide, rinderine-N-oxide (possible co-elution with lycopsamine-N-oxide/intermedine-N-oxide),
- integerrimine (possible co-elution with senecivernine and senecionine),
- integerrimine-N-oxide (possible co-elution with senecivernine-N-oxide and senecionine-N-oxide),
- heliosupine (possible co-elution with echimidine),
- heliosupine-N-oxide (possible co-elution with echimidine-N-oxide),
- spartioidine (possible co-elution with seneciphylline),
- spartioidine-N-oxide (possible co-elution with seneciphylline-N-oxide),
- usaramine (possible co-elution with retrorsine)
- usaramine N-oxide (possible co-elution with retrorsine N-oxide).

3. The recommended method of analysis is Liquid chromatography / tandem mass spectrometry (LC-MS/MS). Other methods of analysis may be applied provided that evidence is available showing that they generate reliable results for individual pyrrolizidine alkaloids. The limit of quantification (LOQ) to be achieved should be 10 µg/kg for the determination of each pyrrolizidine alkaloid.

4. In particular, it is recommended to take samples of the following feed:

- (a) grass silage,
- (b) hay,
- (c) (dried) forage and roughage, such as alfalfa (lucerne) and sainfoin (*Onobrychis viciifolia*),

- (d) herbs, herbal mixtures and plant extracts that consist of, are produced from, or can be contaminated with plants (or their parts) known to contain pyrrolizidine alkaloids,
 - (e) compound feed containing herbs, herbal mixtures and plant extracts.
5. In order to ensure that the samples are representative of the sampled lot, Member States should follow the sampling procedure laid down in Commission Regulation (EC) No 152/2009 ⁽²⁾.
6. Member States are recommended to ensure that the analytical results are provided on a regular basis and by 30 June 2028 to the Authority in the Authority's data submission format in line with the requirements of the Authority's Guidance on Standard Sample Description (SSD2) for Food and Feed ⁽³⁾ and the Authority's additional specific reporting requirements. It is important to report the cutting date for grass silage, hay, forage and roughage as the presence of pyrrolizidine alkaloids depends on the cutting date.

Done at Brussels, 9 June 2026.

For the Commission
Olivér VÁRHELYI
Member of the Commission

⁽²⁾ Commission Regulation (EC) No 152/2009 of 27 January 2009 laying down the methods of sampling and analysis for the official control of feed (OJ L 54, 26.2.2009, p. 1, ELI: <http://data.europa.eu/eli/reg/2009/152/oj>).

⁽³⁾ <https://www.efsa.europa.eu/en/call/annual-call-continuous-collection-chemical-contaminants-occurrence-data-food-and-feed>.