



2026/2353

20.10.2026

COMMISSION RECOMMENDATION (EU) 2026/2353

of 16 October 2026

on monitoring the presence of quinolizidine alkaloids in lupins and lupin-derived feed

THE EUROPEAN COMMISSION,

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

Whereas:

- (1) The European Food Safety Authority ('Authority') Panel on Contaminants in the Food Chain (CONTAM) adopted a risk assessment in 2019 on the risks for animal and human health related to the presence of quinolizidine alkaloids in feed and food, in particular in lupins and lupin-derived products ⁽¹⁾.
- (2) The risk assessment is limited to the quinolizidine alkaloids occurring in *Lupinus* species/varieties relevant for animal and human consumption in the Union (i.e. *Lupinus albus* L., *Lupinus angustifolius* L., *Lupinus luteus* L. and *Lupinus mutabilis* Sweet). As regards the risk for animal adverse health effects in salmonids, the Authority concluded that the mean dietary exposure of salmonids is above the No Observed Adverse Effect Levels (NOAEL) of 1 mg/kg bw per day but below the Lowest Observed Adverse Effect Level (LOAEL) of 2,5 mg/kg bw per day. The Authority considers the risk for adverse effects in salmonids to be low. For the other species, the available database on adverse effects was too limited to identify overall NOAEL/LOAELs. Instead, as an alternative approach, the Authority identified doses of quinolizidine alkaloids present in lupin seeds that can be tolerated with respect to zootechnical performance. For cattle and rabbits, the mean dietary exposure is well below the tolerated dose. For pigs and chickens, the mean dietary exposure is in the same range as the dose that can be tolerated.
- (3) The Authority recommended that more occurrence data should be gathered on the presence of quinolizidine alkaloids in lupins and lupin-derived products.
- (4) More information should be gathered on the factors that lead to relatively high levels of quinolizidine alkaloids in lupins and lupin-derived feed materials in order to be able to identify the measures to recommend to be taken to avoid or reduce the presence of quinolizidine alkaloids in these feeds.
- (5) It is therefore appropriate to recommend the monitoring of quinolizidine alkaloids in lupins and lupin-derived feed materials, the identification of the factors resulting in their high levels, and to gather more information on the effects of processing on the level of quinolizidine alkaloids.

HAS ADOPTED THIS RECOMMENDATION:

- (1) Member States, with the active involvement of feed business operators, are recommended to monitor quinolizidine alkaloids in lupins, lupin-derived feed materials and compound feed containing lupins and lupin-derived products in the years 2026, 2027, 2028 and 2029. Member States are recommended to analyse at least the quinolizidine alkaloids albine, anagyrin, angustifoline, lupanine, isolupanine, multiflorine, 13 α -hydroxylupanine, lupinine, sparteine.
- (2) The recommended method of analysis is Liquid Chromatography / Tandem Mass Spectrometry (LC-MS/MS). Where other methods of analysis are applied, evidence should be made available showing that they generate reliable results for individual quinolizidine alkaloids. The limit of quantification (LOQ) for the determination of each quinolizidine alkaloid should preferably be around 1 mg/kg for lupin seeds and lupin derived feed materials and 0,2 mg/kg for compound feed.

⁽¹⁾ EFSA CONTAM Panel (EFSA Panel on Contaminants in the Food Chain), 2019. Scientific opinion on the risks for animal and human health related to the presence of quinolizidine alkaloids in feed and food, in particular in lupins and lupin-derived products. <https://doi.org/10.2903/j.efsa.2019.5860>.

- (3) Member States, with the active involvement of feed business operators, are recommended to carry out investigations to identify the factors leading to high levels of quinolizidine alkaloids in lupins and lupin-derived feed materials and to gather more information on the effects of processing on the level of quinolizidine alkaloids.
- (4) Member States and feed business operators are recommended to provide to the Authority the data for compilation into one database in line with the requirements of the Authority's Guidance on Standard Sample Description (SSD) for Food and Feed and the Authority's additional specific reporting requirements ⁽²⁾. It is important to report for lupin seeds and lupin derived feed the lupin species, if they are sweet or bitter lupins, the processes lupin seeds have undergone (such as soaking, boiling), and any processes the lupin derived feed has undergone to reduce the quinolizidine alkaloid content.

Done at Brussels, 16 October 2026.

For the Commission
Olivér VÁRHELYI
Member of the Commission

⁽²⁾ <https://www.efsa.europa.eu/en/call/call-continuous-collection-chemical-contaminants-occurrence-data-0>.