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Safety of Calcium Iodate and Potassium Iodide for the Consumer

EFSA Technical Meeting

June 2026

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Technical Meeting Agenda

- Introductions
- Review of EFSA's conclusions and request for data
- Specific discussion points related to the key points of concern
  - Absence of deposition data that fully conforms to EFSA guidelines
  - Absence of deposition data at the maximum authorised use levels
  - Absence of deposition data in all animals
  - Dietary exposure assessment of iodine and risk to consumers
- General discussion on best pathway to establish consumer safety
- Next steps

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Meeting Objectives

- Review of the existing EFSA opinion and request for further information to support the consumer safety of calcium iodate and potassium iodide
  - Consider the existing residue studies within context of practical use levels of iodine salts in animal feed and relevance to consumer safety
  - Further understand the concerns of EFSA with regards to availability of robust data for consumer exposure modelling
  - Consider authoritative body assessments regarding iodine intake by the general European population and primary contributors
- Discuss the most appropriate strategy for establishing consumer safety

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EFSA (2025)

- *…..The Panel on Additives and Products or Substances used in Animal Feed (FEEDAP Panel) confirms that the use of potassium iodide and calcium iodate anhydrous under the current authorised conditions of use are safe for the target species and the environment. Due to the lack of adequate deposition data to assess the consumer exposure, the FEEDAP Panel is not in the position to conclude on the safety for the consumer……*

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EFSA Opinion (2025)

- Deposition data does not fully comply with current requirements for studies
  - Not available in all target species (e.g., fish) or from animals receiving maximum supplementation level (chickens/pigs)
  - Some data based on regression calculations (deposition data in milk and eggs)
- Available (limited) data indicates exposure of consumers exceeds Upper Levels (ULs) for iodine at recommended and maximum authorised use levels
  - When fish, pigs and poultry (meat/offal) included, UL likely to be further exceeded
  - Additional data on iodine deposition needed to allow full assessment of consumer safety

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EFSA Data Request (2025)

- Limited data set indicates consumer exposure to iodine exceeds the UL in all age classes indicating a consumer safety concern

Target Animal	Requested Deposition Data
Meat, liver, kidney and fat (skin)	Chickens and pigs for fattening at maximum authorised use level
Flesh	Salmonids
Milk	Dairy cows at maximum recommended and authorised use levels
Eggs	Laying hens at maximum recommended and authorised use levels

  - Different sources of iodine are considered equivalent
  - Dietary iodine greater impact on milk and eggs than meat

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Consumer Exposure (EFSA, 2025)

- Authorised **maximum** use levels

	Maximum HRP (µg/kg per bw per day)	Default body weight (EFSA Scientific committee, 2012)	Exposure (µg/day)	UL (µg/day)	% UL
Infants	96.27	5	486.3	–	–
Toddlers	93.37	12	1120.4	200	560.2
Other children	123.06	23	2830.4	300	943.5
Adolescents	46.94	52.4[1]	2459.6	500	491.9
Adults	25.46	70	1782.2	600	297
Elderly	22.8	70	1596	600	266
Very elderly	25.08	70	1755.6	600	292.6

- Maximum **recommended** use level

	Maximum HRP (µg/kg per bw per day)	Default body weight (EFSA scientific committee, 2012)	Exposure (µg /day)	UL (µg /day)	% UL
Infants	36.45	5	182.2	–	–
Toddlers	34.53	12	414.4	200	207.2
Other children	45.47	23	1045.8	300	348.6
Adolescents	17.58	52.4[1]	921.2	500	184.2
Adults	9.54	70	667.8	600	113.3
Elderly	8.63	70	604.1	600	100.7
Very elderly	9.29	70	650.3	600	108.4

- Milk and eggs significant contributors

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Iodine: Conditions of Use

- Potassium iodide and calcium iodate are authorised for use as a source of iodine in feed for all animals:

Food Producing Animals	Use Levels (I in Complete Feed)	Practical Use Levels (I in Complete Feed)
Ruminants for milk production	Max. authorised 5 mg/kg Max. recommended 2 mg/kg	1.5-3 mg/kg
Fish	Max. authorised 20 mg/kg	-
Laying hens	Max. authorised 5 mg/kg Max. recommended 3 mg/kg	0.96-1 mg/kg
Other species and categories	Max. authorised 10 mg/kg	1-1.25 mg/kg (chickens) 0.75-0.9 mg/kg (swine) 0.8-1 mg/kg (beef)

Discussion point: collaborating group data show practical use levels are below maximum authorised levels; survey request to FEFAC/FEFANA

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Ruminant Residue Data

Target Animal	Available Deposition Data
Meat, liver and kidney (beef cattle)	Data at maximum authorised use level (no further data requested)
Milk (dairy cattle)	Comprehensive set of data (Appendix D of EFSA, 2013) including bulk milk in different European countries (Spain, Germany, Norway, Sweden, UK), conventional and organic farming, indoor and outdoor farms, effect of disinfectants, effect of high glucosinolate diets (rapeseed) Robust linear regression analysis in graded feeding study to model dose response (Franke *et al*., 2009) Feed manufacturers do not use the maximum authorised levels in practice (EFSA, 2005 and 2013)

Discussion point: available data in milk is comprehensive, reflective of commercial practice, continue to be relevant and are consistent; value of further studies is unclear and will not yield new information

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Egg Residue Data

Target Animal	Available Deposition Data
Laying hens	Rötteger *et al*. (2012) conducted a study in laying hens fed diets containing 0, 0.25, 0.5, 2.5 or 5 mg I/kg complete feed with and without glucosinolate (rapeseed) and 2 different breeds for 164 days Other supporting studies comparing large and small flocks, dietary levels of 4 mg I/kg complete for 4 weeks and low glucosinolate diets Available data yield consistent results Regression analysis was used to model other use levels

Discussion point: practical levels of iodine in laying hen feed are within maximum recommendations; data are reflective of commercial practice, continue to be relevant and are consistent; value of further studies is unclear and will not yield new information

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Pig Residue Data

Target Animal	Available Deposition Data
Meat and liver (pigs)	Data at 8 mg I/kg complete feed supplementation (<10 mg I/kg complete feed maximum limit)

Food of animal origin	Iodine (mg/kg feed DM)		
	0.5	4	10
Meat (beef)	25	65	115
Liver	75	150	250
Kidney	95	230	450

Food of animal origin	Iodine (mg/kg feed DM)				
	0.5	1	2	5	8
Meat	5	10	15	20	30
Liver	60	140	200	250	300

Discussion point: recognise no data at maximum authorised use level but levels reflecting commercial practice (~1 mg/kg) are available; EFSA intakes tool only uses “mammalian meat” and ruminant data gives similar deposition to pigs and potentially sufficient for modelling, especially given iodine in meat and offal less influenced by diet than milk and eggs?

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Chicken Residue Data

Target Animal	Available Deposition Data
Meat (chickens)	Data at 5 mg I/kg complete feed supplementation (<10 mg I/kg complete feed maximum limit)

Discussion point: recognise no data at the maximum authorised level but actual dietary levels of iodine are not expected to exceed 5 mg I/kg; additionally, iodine meat and offal levels less influenced by diet than milk and eggs and therefore existing data can be considered worst-case for modelling intake

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Fish Residue Data

Target Animal	Available Deposition Data
Fish	No residue study data and previously food composition data in seafood and fish were used Notably, wild fish reported to have higher I levels than farmed fish and levels are very variable in marine fish (EFSA, 2025)

Discussion point: technically data are limited but given that the variability and that wild fish have higher levels than farmed fish, a study in farmed fish would not provide the best data set for modelling intake; food composition data may well be more appropriate to capture the higher levels of wild fish as well?

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EU Population Intakes of Iodine

- Iodine deficiency is recognized by the WHO as a continuing EU public health concern (WHO, 2024)
  - Iodine status of 53 Member States reviewed
  - Iodised salt highly successful public health intervention implemented in most European countries
  - Progress towards optimal iodine nutrition is deteriorating especially in those with voluntary salt iodisation and iodine intake needs improvement to prevent iodine deficiency and ensure optimal iodine nutrition in all population groups
  - Important sources identified as iodised salt, milk and dairy products (consumption of which is declining)
  - Supported by individual Member State reports including Nordic review confirming deficiency a significant concern in Nordic and Baltic countries with iodised salt, eggs, milk and saltwater fish the primary dietary sources

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Exposure Assessment

- EFSA used the FACE tool to estimate exposure by the total population based on national survey data from individual countries
  - Other sources of iodine in the diet which will contribute to overall intakes
  - Iodine loss due to processing (e.g., pasteurisation) and cooking not accounted for in assessment
  - Considering the NL and FR separately, intakes of iodine do not appear to be a consumer safety concern
  - NL data indicate a significant intake of iodine from fortified products (>32.5% of total iodine intake)
  - Iodine intake reported from national surveys indicated to be below recommendations in some vulnerable population groups including young children and pregnant women (when not consuming supplements)

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Dietary Considerations

- FACE tool only considering maximum and recommended authorised levels of iodine may not be the most appropriate tool for this element given that iodine deficiency continues to be a public health concern, particularly in light of changing dietary habits (protein alternatives, reduction in milk and salt intakes)

Discussion point: dietary exposure assessment needs to be considered in context of known deficiency concerns by the European population and inclusion of contributions of fortified foods (rather than single out only animal products for re-evaluation)

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Summary & Next Steps

- Key discussion points
  - Obtain reliable data on practical use levels to establish if existing residues data in milk, eggs, chicken and pig products, and fish covers scope of use
  - Reconsider gaps in data set based on updated practical use levels
  - Collect further data on iodine in food products from monitoring programs rather than necessarily additional studies (particularly given range of factors that can influence deposition of iodine)
  - Consider consumer safety in context of recognised concerns regarding deficiency of iodine in the diet and existing fortification programmes