



# Food safety standards and seaweed

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# Potential contaminants

## Chemical

- Environmental e.g. dioxins, PCBs, dioxins, heavy metals
- Process e.g. PAHs, furans ?
- Mycotoxins e.g. *Fusarium*
- Plant toxins e.g. tropane alkaloids
- Contact materials e.g. phthalates



- Veterinary medicines residues ?
- Pesticide residues ?

## Radiological

## Microbiological



# Chemical Contaminants Legislation

## Key regulations

- Regulation (EC) 178/2002
  - general principles and requirements of food law
- Regulation (EC) 1881/2006
  - specific chemical contaminants in food
  - enforcement powers - The Contaminants in Food (Scotland) Regulations 2013
- Regulation (EC) 852/2004
  - on the hygiene of foodstuffs
  - enforcement powers - The Food Hygiene (Scotland) Regulations 2006
- Regulation (EC) 882/2004
  - on official controls performed re feed and food law, animal health and animal welfare rules
- Sampling and Analysis regulations
  - e.g. Regulation (EC) 333/2007 - lead, cadmium, mercury, inorganic tin, 3-MCPD and benzo(a)pyrene in foodstuffs



# FSS Chemical Contaminants Strategy

## Drivers

FSS Science, Evidence and Information Strategy; Priority 1 - Food is safe



FSS – A Strategy for Reducing Foodborne Illness in Scotland



FSS Chemical Contaminants Strategy



Framework - food chain model  
Source > Pathway > Receptor

## Responsibilities

- Identify key contaminants & emerging risks
- Assess Scottish production & consumption patterns
- Risk assessment/incident response capability
- Public perception of risk

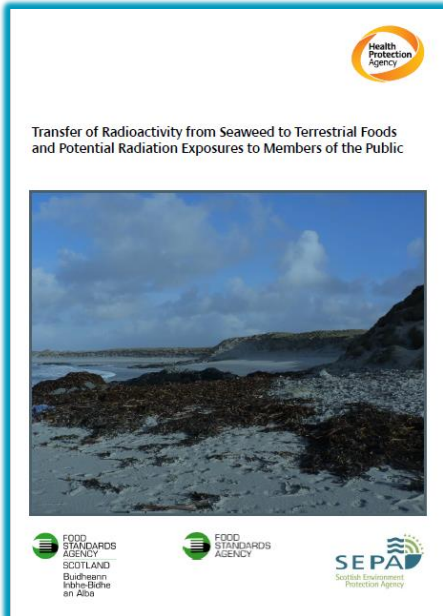
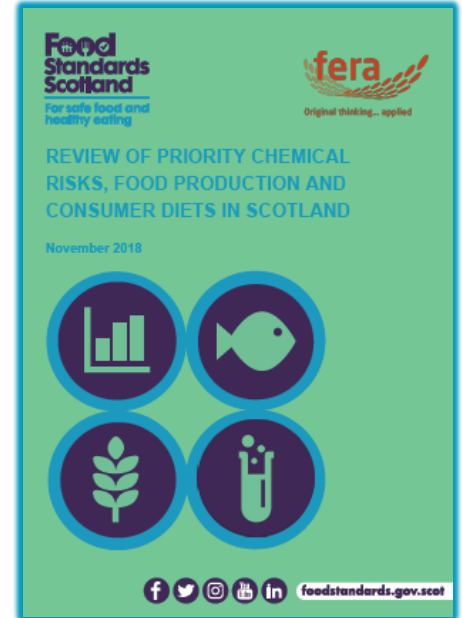


# FSS Contaminants Research

## Research

Expert review of chemical contaminants in food (FERA - 2018)

- Seaweed recognised as an emerging industry
- Rich in iodine, calcium and antioxidants
- Can accumulate contaminants e.g. inorganic arsenic in hijiki seaweed



Transfer of radioactivity from seaweed to terrestrial foods (HPA – 2009)

- Soil conditioner and grazing/animal feed
- Predominantly Sellafield past discharges
- Technetium-99, caesium-137, plutonium-239, strontium-90
- No food safety concerns



# FSS Contaminants Activities

## Incident response

- FSS Incidents Team, LAs, FSA, APHA, VMD, SASA
  - oil spills e.g Transocean Winner 2018

## Monitoring

- Local Authorities sampling grants
- Radiological monitoring
  - joint FSS/SEPA programme

## Advice

- Scottish consumers
- Industry
- Local Authorities
- Public Analysts



## Recommendation (EU) 2018/464

### “on the monitoring of metals and iodine in seaweed, halophytes and products based on seaweed”

- Seaweeds can contain significant concentrations of arsenic, cadmium, iodine, lead and mercury
- Regulation (EC) No 1881/2006 sets MLs for arsenic, cadmium and lead in various foodstuffs – but not in seaweeds (except food supplements)
- Regulation (EC) No 396/2005 (pesticide residues) sets an MRL for mercury at the default level of 0.01 mg/kg
- An upper limit for iodine intake of 600 µg/day (adults) and 200 µg/day (children 1-3 years) was set by the Scientific Committee for Food in 2006.
  - noted that iodine-rich products (>20 mg iodine/kg dm) can lead to ‘dangerously excessive’ intakes
- Regulation (EU) No 231/2012 specifies food additives based on seaweed.
  - for some of these, EFSA have recommended that the limits for the impurities of toxic elements should be revised to reduce exposure to arsenic, cadmium, iodine, lead and mercury; particularly for infants and young children





# Questions?

