

**CHLORATE TRACES IN THE PRODUCTION OF
PROCESSED FOODS:
ADVICE ON FBO RESPONSE TO CHALLENGE**



Introduction

The HSE has advised that *'companies should issue a statement confirming that, with respect to the practical interpretation of the Regulation in the UK, goods identified as processed foods may legitimately exceed statutory MRLs set for unprocessed foods (with no enforcement or restriction on sale/supply arising), with the following provisos':*

- That **these special rules will only apply where businesses provide proof that there have been legitimate chlorate trace inputs at the processing stage, such as through the use of potable water or other sources in processed food production, or through legitimate disinfection practices to maintain hygiene.**
- That each food business generates a **full description of its production practices** to serve as proof that these are legitimate additional inputs leading to the MRL being exceeded.
- Where exceedance results solely from a concentration of the residue through actions such as drying, and not because of additional chlorate inputs at the processing stage. In those cases, information on the process and calculated processing factors should be generated.
- It is also expected that the above arrangements will run alongside continuing industry efforts to minimise uses and traces arising from those uses, provided standards of food hygiene remain high.
- Any steps taken to comply with the MRLs Regulation should not undermine appropriate food hygiene controls.

FBIG suggests that FBOs should prepare such a statement where there is any likelihood of an MRL exceedance so that they can provide this statement to CRD should it be requested in the event of an exceedance arising.

Note:

Chlorate arises in food and drink primarily from the use of hygiene biocides by water companies to assure the safety of mains water. It is the responsibility of water companies to supply water of appropriate quality to their customers from all their water treatment works (WTWs).

FRESH PRODUCE – PRIMARY PRODUCTION

EU guidance on addressing microbiological risk in fresh fruits and vegetables at primary production recommends the use of potable water and/or biocides at different stages of production as part of a good hygiene regime.

The EU guidance includes references to:

- Higher quality of water recommended for overhead irrigation.
- Water used in hydroponic culture should be changed frequently or if recycled should be treated to minimise microbial contamination.
- Water delivery systems including basins, tanks and storage of water sources should be maintained and cleaned appropriately, to prevent microbial contamination of water and biofilm formation.
- Importance of washing fresh produce to reduce overall potential of microbial food safety hazards. Water used for final rinses should be of potable quality if ready to eat products.
- Only potable or disinfected water should be used for initial water as transport-sorting water for apples, pears.... Hand washing and rinsing harvesting equipment when handling crops that might be eaten raw.
- Recognises use of biocides to disinfect surfaces, material, equipment used for washing, rinsing, cooling.
- Clean and disinfect water contact surfaces such as dump tanks, flumes, wash tanks and hydro coolers as often as necessary to ensure the safety of produce.
- Clean and disinfect harvesting equipment.
- Workers: wash hands; clean gloves if reusable.
- Clean and where necessary disinfect facilities, equipment, containers, crates, vehicles.
- Additional good practice for leafy greens, tomatoes etc referred to in guidance.
- Washing of berries intended for freezing in potable or chlorinated water.
- Use of potable water for ice and hydro coolers where used to precool berries after harvest.

There is evidence that chlorate bioaccumulates in produce during growth when plants take up water. This is a natural, irreversible mechanism. UK fruit and vegetable growers are aware that chlorate accumulates in fresh produce during growth, when crops are irrigated or hydroponically grown with water that has been treated with chlorine compounds (e.g. from WTWs, municipal water, private boreholes), to make it safe to use, so that produce is safe to eat. Chlorate ions in the water are absorbed via plant roots and bound or locked-up within plant foliage. Such bound chlorate cannot be removed during further processing.

FBOs ensure that all stages of production, processing and distribution satisfy relevant hygiene requirements.

Hazard analysis may vary from simple to complex depending on the scale and type of the operation and the level of risk involved. For example, a packhouse handling only one type of produce will have a simple hazard analysis compared with a factory producing a variety of products. Compliance with microbiological criteria follows HACCP principles.

Pointers for FBO statement on fresh produce production practices

1. Identify how crop has been grown and where potable water is introduced

Products have been grown in accordance in field/greenhouse/hydroponically in accordance with UK regulatory requirements, including use of authorised pesticides for conventional/organic production. Chlorate is not used as a plant protection product.

2. Identify stage(s) where chlorate traces may arise from the use of hygiene biocides to assure produce safety and hygiene

You could consider presenting 1. and 2. in a flow diagram if you feel this is appropriate.

3. Monitoring

If you do carry out monitoring of residues levels at any stage of production you may wish to refer to this in your statement. Dependent on the issue it may be relevant to refer to earlier PRiF quarterly data: <https://www.gov.uk/government/collections/pesticide-residues-in-food-results-of-monitoring-programme#quarterly-reports>

4. Refer to any industry guidance which you follow

Examples:

FPC (2013). **Guidance for food business operators on the hygienic sourcing, production and safe handling of ready to eat sprouts.** Second Edition. <https://www.freshproduce.org.uk>

FBIG (2016), **Biocides in Cleaning & Disinfection.** <https://www.chilledfood.org/wp-content/uploads/2018/08/Biocides-Cleaning-and-Disinfection-working-document-industry-guidance-18-10-16-with-updated-best-practice-example-FBIG-logo-in-progress.pdf>

GFSI (2019). **Chemicals in Food Hygiene. Volume 1: The optimal usage of cleaning agents, sanitisers and disinfectants to minimise the risk of traces in foods.**
<https://www.mygfsi.com/files/Chemicals in Food Hygiene Volume 1 FINAL.pdf> CFA (2010).

CFA (2010). **Protocol for produce washing.** <https://www.chilledfood.org/wp-content/uploads/2015/09/CFA-56-10-Produce-Wash-Protocol-revised-11-5-10-final.pdf>

CFA (2010). **Produce Decontamination Assessment Protocol: Part 2 – Washing Validation.**
<https://www.chilledfood.org/wp-content/uploads/2016/11/CFA-55-10-Produce-decontamination-assessment-protocol-part-2-washwater-validation-revised-11-5-10-final.pdf>

5. Refer to any appropriate food safety accreditations which you currently hold in relation to production, demonstrating that phytopharmaceutical/PPP compliance is subject to external scrutiny (e.g. Red Tractor, Global GAP, BRCGS v8, retailers' specific commercial requirements/protocols).