

FOOD TECHNICAL SERVICES

PROJECT: LISTERIA SCARE - RETAILER BRANDED COLD SMOKED SALMON

Application of Microbiology and Technical management team development to regain contract

The Issue

A representative of a Multinational Seafood business called for help after its processing site lost the business of a UK retailer. The reason: "lost confidence in management" following "incidents of *Listeria monocytogenes* presence" in the retail branded product.

Listeria can occur in fish, usually at low levels. Curing & cold smoking cannot kill it. Smoked salmon is usually processed in a way that restricts *Clostridium botulinum* growth; this usually is enough to restrict *Listeria* growth too.

UK/EU guidelines accept low level *L.monocytogenes* in product; but only if the business can prove it's resilience to *Listeria* growth.

Initial investigations took place:

- The site had top grade BRC certification and good controls to reduce risks of *Listeria* ingress.
- With retailer input - Action plans had been written, with focus on reducing factory fabric/hygiene/*Listeria* presence issues.
- Significantly more critical than the "*Listeria* presence", was the previously unreported issue of *Listeria* growth.
- The retailer had reportedly advised the business to shorten the total processing time, this in-turn reduced the curing time which in-turn resulted in product with under-cured sections (uneven distribution of smoke, moisture and salt).
- Inadequate "Water-activity" sampling methods resulted in the deep muscle lesser cured parts going untested, thereby allowing partly under-cured salmon to move into the slicing process too early.
- Early slicing of product resulted in poor resilience to *Listeria* growth (& *Clostridium botulinum* should it ever be present).
- The "post pack" cooling stages weren't rapid enough, thus packs despatched & held within the deeper parts of a pallet would easily remain warm enough for cold tolerant *Listeria* to grow).

The site team needed some support/direction on salmon process/curing/microbe-control/safety.



Solutions and actions taken:

- More thorough action plans were negotiated with the retailer food safety team.
- Better "smoker-drier loading plans" were implemented to reduce variability in fish drying rates.
- Harvest-process-despatch-Usebydate schedules were created to ensure a) each dept could plan daily throughput & control their processes, b) better curing & blast chilling times (ie safety) c) That the retailer had enough remaining "shelf life".
- Upgrade of Water-activity methodology to include for eg: samplings across the fillet depth, daily calibration of the meter
- Created a test & release system so that slow cures could be left for longer - ie until fully cured.
- Improved pack presentation to & time under the cooling airblast - enabling full cooling to <4C.
- Redeveloped the HACCP Food safety management system - more focus on these critical steps.
- Revalidated all product shelf lifes (with organoleptic chemical & microbiological assesments).
- Helped the business recruit a skilled Technical Manager, then assisted with the Technical/Production teams development.
- Encouraged "team buy-in"; & developed/training packs specific to the site procedures/needs:
 - o Making good quality safe smoked salmon - how curing and smoking can be controlled.
 - o Meaningful Water activity sampling, with positive release of fillets before slicing.
 - o Importance of appropriate blast chilling after warm stages in the process.
 - o Production scheduling & stock colour cooling systems to aid stock movement
 - o Site HACCP and reasoning behind the critical control points.
 - o With the team/Technical manager developed a staff training programme for the future.
- Presentations on the range of upgrades and evidence data were made to the retailer.

Final outcome: The team gained confidence in the product and with the retailer who were once again taking product.