FOOD TECHNICAL SERVICES

PROJECT: LISTERIA SCARE - RETAILER BRANDED COLD SMOKED SALMON

Application of Microbiology, Technical management & team development to regain contract

The Issue

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

Listeria can occur in salmon, usually at low levels. Curing & cold smoking can't kill it; however Cold smoked salmon is usually cured in a way that prevents Clostridium botulinum growth, this is usually enough to restrict Listeria monocytogenes growth. Guidelines to UK/EU regs allow for low levels but only in cases where the business has demonstrated that the product is resilient to its growth.

Initial investigations took place:

- The site had top grade BRC certification and good controls to reduce risks of Listeria ingress.
- With retailer unput - Action plans had been written with focus on reducing factory fabric/hygiene/listeria presence issues.
- Significantly more critical than "Listeria presence", was the previously unreported and unactioned issue of Listeria growth. The retailer had at some point reportedly advised the business to shorten the total process 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 compounded the issue by allowing deep muscle lesser cured parts going untested, thereby allowing some slow to cure batches (with low salt/high moisture) to move to the slice-pack stages too soon, thus some packs could have poor resilience to Listeria growth (& to Clostridium botulinum should it 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 leadership/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: i) Each dept could plan its daily throughput & control their processes, ii) More time for curing & blast chilling, iii) That the retailer had enough remaining "shelf life".
- Upgrade of Water-activity testing system to include eg: i) sampling across the full fillet depth & ii) meter calibration, daily. iii) a test & release system so that slow cures could be left for longer - ie until fully cured.
- Improved blast chilling so that all packs would reach <4C (ie better pack presentation to the airflow).
- Redeveloped the HACCP Food safety management system - more focus on these critical steps.
- Revalidated all product shelf lifes (with organoleptic chemical & microbiological assesments).
- Helped to recruit a skilled Technical Manager, then assisted with the Technical/Production team development.
- Encouraged "team buy-in"; & developed/training packs specific to the site procedures/needs:
    - Making good quality safe smoked salmon - how curing and smoking can be controlled.
    - Meaningful Water activity sampling, with positive release of fillets before slicing.
    - Importance of appropriate blast chilling after warm stages in the process.
    - Production scheduling & stock colour colding systems to aid stock movement
    - Site HACCP and reasoning behind the critical control points.
    - With the team and the new 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 with their product and with the retailer. The retail relaunched the product.