

# How to automate food safety in the poultry industry?

Food safety is rightly a key issue in today's poultry industry. Everyone wants to eat food, which is safe. Although the poultry meat supply chain is larger than just the processing facility, in the end, our industry is held responsible when the produced food is not safe. That is why all processes in the factory must be dedicated to food safety.

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Fortunately, there are many ways to secure the safe handling of poultry food. Good cleaning, hygiene, prevention of cross-contamination and the least human intervention are a few key components. By automating the process, these points of attention can be tackled much easier.

To ensure a truly safe process, processes should be kept in line and, where possible, should be automated. Marel now offers processing systems capable of handling up to 15,000bph, where products are kept in line from live bird hang-on until their release as a whole product or a cut portion.

All steps in the process are fully automated with human input being limited to veterinary inspection, supervision and the packing of edible giblests.



## Eyes, not hands

Human hands are the most critical contaminant in a poultry processing plant. Every touch is potentially contaminating. Where automation is available for a process, machines should do the work. In an ideal world, human input would be limited to supervision only, eyes and not hands.

Product should flow as smartly as possible through all stages of the process. Not only do buffers involve costly double handling, they also risk gains in temperature, which will encourage the growth of harmful bacteria and shorten shelf-life. The aim should be to move product as quickly as possible from live bird hang-on to the cold store.

## Safe transport

To move poultry products safely from A to B, the transport must not be done by humans, but automatically. In the primary process, Marel's overhead conveyors take care that products do not touch each other, preventing cross-contamination.

Once unloaded from the shackles, SystemFlex conveyors take over the safe transport, maintaining the integrity of the product. Besides bringing products safely and hygienically to the next process step, SystemFlex also reduces human contact with the product by automatically positioning products correctly for infeed into a downstream machine. Products are not flipped, dropped, tumbled around, or touched by human hands.

The more products are moved around during the process, the more they lose their protein, the shorter their shelf life will be.

Proper, careful handling by SystemFlex ensures full product integrity and safety. Products virtually do not risk damage, loss, bulking or bacterial contamination and maintain their optimum quality level.

Once products reach the packing area, Marel TrayTrack is the next excellent means of food-safe transport. This computer-controlled system consists of tray carriers suspended from a standard overhead conveyor. TrayTrack distributes work efficiently over multiple price/weight labellers, avoiding the accumulation of



buffers of product. It prevents human touching and frees up floor space.

## Keep the process in-line

Maturing carcasses before filleting them makes for more tender breast meat and is now widely practiced. This can involve the manual transfer of product to and from crates in a maturation buffer. Human touching, product contact and buffering are however, unwanted scenarios in a food-safe process.

To save labour and improve food safety, Marel offers its two-stage in-line maturation chill system, where products are chilled and matured at the same time. Products stay in-line all the time and there is no need for deshacking, piling up chicken in crates or reshacking.

## Benefit from automation

When talking about food safety, manual cut-up and deboning processes, with many hands touching the product, are far from optimal. Food safety at these plants would benefit from automation. Automatic cut-up systems, fed intelligently by distribution systems and software, have been a regular feature in poultry processing plants for

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many years now. Two recent Marel developments of its ACM-NT cut-up system have a strong impact on food safety. These are the 'Thigh Fillet System' and 'Q-Wing', two completely automatic and in-line processes, where no human touching is involved.

### Bone-free safety

It does not feel safe when you find a piece of bone in meat claimed to be bone-free. Human assessment is not always effective in bone detection. To meet industry safety and quality standards, automatic bone detection has become an essential part of food production.

X-ray technologies, such as Marel's SensorX, are available to support this process and increase the level of food safety. SensorX detects residual bone and other unsafe elements such as metal, stone and glass. It is a proven ultra-reliable tool, giving the lowest number of costly false positives.

### Packing safety

In processing plants, it is in the packing department where the most people and manual operations can be found. It is also in



the packing department where avoidable buffers of product typically happen. Both can compromise food safety.

In the retail breast meat and leg packing line, RoboBatcher Flex can replace human actions. Besides producing super-accurate fixed weight tray packs automatically, this machine can also style them. Human hands no longer have to arrange fillets on the tray.

RoboBatcher is not the only technology available from Marel able to batch product automatically into fixed weight units. Marel

also offers a range of multihead weighers, which will batch both bone-in and boneless portions into retail and bulk packs.

### Traceability

Software can play a significant role in food safety matters. Reliable data gathering is the key to tracing a product in time to prevent a recall. Most of all, full traceability allows processors to pinpoint the precise cause of problems and take quick remedial action to prevent a repetition and avoid losing business.

In case of a food safety issue suspected or identified by the customer, this will result in the smallest possible batch of products to be recalled. Having the capability to trace the issue back to its source, Innova helps the processor isolate the products concerned rapidly and prevent them from reaching consumers. Innova ensures that every piece of poultry that reaches the end consumer is safe.

Keep the processes hygienic and in line, prevent cross-contamination, automate wherever possible and opt for logistical solutions, which avoid buffers and move product smartly from live bird handling through each individual process to the chill store.

These are the preconditions for a poultry operation, which is truly food safe. ■