Automate to minimise food product recalls

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The amount of product recalls leapt up during 2015. Robert Brooks argues that effective and integrated plant automation can play a lead role in minimising those costly and damaging recalls.

Food industry product recalls in the UK are a major headache for manufacturers, and one which is not about to vanish. Reports suggest that recalls in 2015 actually increased by 80% to 159*. The damage is reputational as well as financial.

While the majority of recalls are triggered by unlisted ingredients (including allergens), contamination with bacteria, metal and other foreign bodies was also responsible for many cases.

Manufacturers need to be aware of the impact on labelling and pack accuracy of current production trends. Shorter runs of multiple variants, reformulated versions of established products and redesigned packaging can all lead to mistakes being made.

Retailer and third-party standards will probably dictate levels of off-line testing and inline contaminant detection, but in these and other areas, they are constantly evolving. Manufacturers must keep abreast of these changes, as well as the implications of the Food Information to Consumers (FIC) regulation, with its new and very specific rules for on-pack information.

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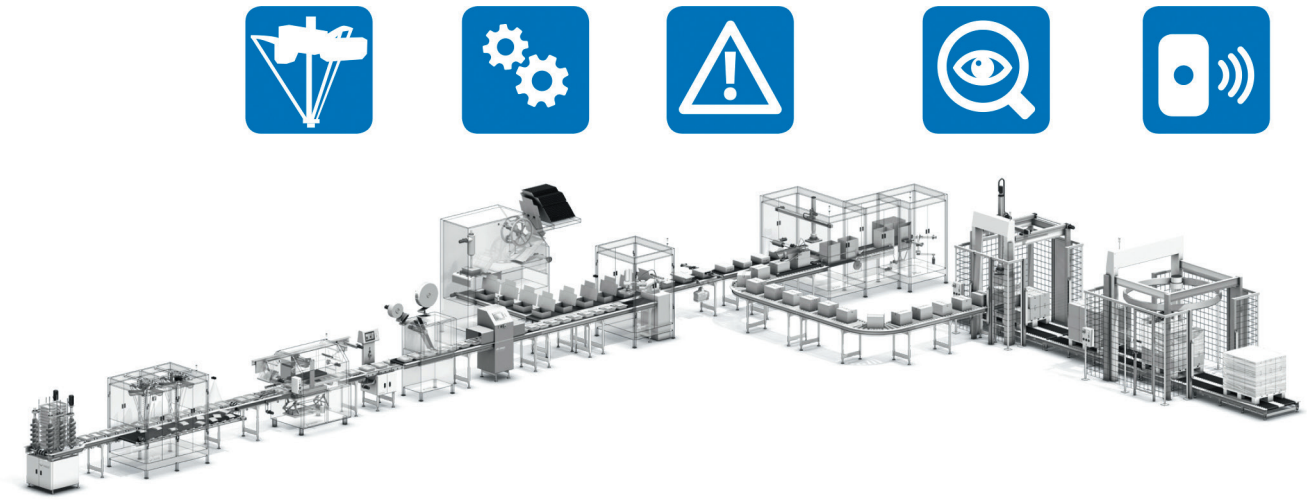
A basic requirement is that both pre-printed and variable data (including best-before dates) must correlate correctly with the product inside the pack.

While there is no single 'silver bullet' to eliminate all these threats on an enterprise-wide scale, there are many production-level checks which can be integrated into control and information systems. Taken together, they can dramatically - and reliably - reduce the risk of recalls.

OPINION



Integrated production-level checks can dramatically, and reliably, reduce the risk of recalls.

A common type of production line includes primary packaging (robotic pick-and-place and tray sealing), secondary packaging (top-load cartoning), and tertiary packaging (case-packing and palletising). There are a number of points at which faults can occur, with the potential to trigger a recall.

The servo-driven tool lift on the tray sealer could be drifting over time, or seal quality could be compromised by imprecise temperature control or a change in packaging substrate. With the Pick & Place, items may be missed out of a multi-component pack.

At the checkweighing and coding stage, the scales may be set up for the wrong pack size. Even when the overprinting is correct, the wrong product label may have been loaded into the labeller. At the end of line, item codes may not marry up with pallet codes.

Surprisingly, perhaps, all of these functions could be managed and monitored from a single control system. Vision systems for verifying packaging, product and codes, temperature control, sensors and robot controls can all sit on a single machine control platform with direct two-way, real-time connectivity with factory or enterprise-level databases.

The installed price of vision systems may have prompted potential beneficiaries to treat this technology with caution. But that perception is changing, with end users and machine builders increasingly choosing to fit vision systems on their lines.

Vision will verify codes, graphics (reconciling each pack with the product on the line), pack components, label presence, print legibility, shape, colour and optical character recognition (OCR) at even the highest line speeds.

Database connectivity means that quality inspection and production data can be gathered, and traceability and regulatory compliance can be ensured. It allows data to be analysed for adverse trends and to trigger predictive or preventative maintenance.

Sensitivity to temperature trends in areas such as

primary pack sealing is also important in order to safeguard seal quality and - as a result - product life.

The individual machine controller can offer this level of connectivity while bringing under one umbrella logic, motion, vision, safety and robotics.

There is no reason why the food industry could not follow the example of the pharmaceuticals sector in embracing automation at this high level, for reasons of efficiency and flexibility but also - increasingly - in order to minimise the risk of product recalls.

SOURCE

*Food Manufacture magazine, February 2016
http://www.foodmanufacture.co.uk/Food-Safety/Food-and-drink-recalls-up-80-in-2015

Vision inspection is becoming an increasingly valued tool in beverage factories

Database connectivity means that traceability and regulatory compliance can be ensured