Software ensures effective food traceability from farm to fork

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Factory farmed pork sold as organic ham; horsemeat found in products labelled beef; pork DNA found in Halal meat; recall as school lunch meat contains plastic. These are just a few stories that dominated the global headlines in recent months.

It is clear that animal diseases, food fraud and production failures form a growing problem worldwide.

In the wake of these food scandals, consumers have become increasingly aware of food quality, safety, and origin, putting pressure on processors to keep track of every component in the manufacturing process.

SFK LEBLANC, a world leading supplier of high quality slaughter, cutting and deboning lines, has developed a traceability solution that can trace products from 'farm to fork'.

Traceability a necessity

Never before has food traceability been so important. Consumers grow more and more aware of food quality and food safety and therefore demand instant access to information on the origins of their food. Traceability has become a necessity.

Get the most out of meat

SFK LEBLANC is a world leading supplier of high quality slaughter lines, cutting and deboning lines and logistic solutions for the food industry.

The SFK LEBLANC brand range comprises the brands SFK LEBLANC for pork lines and automation concepts, NAWI for cattle, veal and sheep solutions, and FP LOGISTICS for logistic solutions.

From stand-alone products to complete projects, SFK LEBLANC has made it its mission to get the most out of meat.

Traceability gives customers an advantage in today's market.

Maintaining consumer confidence is essential for our customers in the food processing industry and traceability is a principal tool in achieving this. Though in the past the term 'traceability' was often connected to regulation and legislation, for example the EU General Food Law, fear of high costs and recalls, manufacturers have started to realise that traceability gives them a competitive advantage in today's market.

SFK LEBLANC has developed a full traceability solution that not only improves consumer confidence and brand loyalty, but also provides precise, real-time information on the production process, increasing efficiency, quality and operational performance, cutting costs and improving product flow and inventory control.

Linking our food chain

The SFK LEBLANC software system can link all the different steps in our food chain from animal production at the farm – in other words, when was it born, where was it born, who were its parents, what did it eat? – to meat processing – when was it slaughtered, where was it slaughtered, what happened to all the (by) products? And from distribution to the retailer – who was the distributer, when was it distributed? – straight to the plate of the consumer.

Controlling the process

The SFK LEBLANC traceability software tracks and traces products throughout the entire slaughtering, cutting and deboning process. With the arrival of the animals at the slaughterhouse, the software system receives information about farmer and animals. This information is stored in an open SQL database by a MES system, a manufacturing execution system specially developed by SFK LEBLANC for monitoring and controlling production processes in the food industry. MES adds information on every individual product throughout the process. All this information is stored in an open database in a central location. Information can easily be retrieved from the system and passed on to the next station.

Methods and techniques

In order to automate data collection, SFK LEBLANC uses a combination of different techniques. They can, for instance, identify

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The SFK LEBLANC traceability software tracks and traces products throughout the entire production process.

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individual hooks, crates and packages through Radio Frequency Identification, or RFID.

The tags use radio waves to communicate their identity to an RFID reader. With this method, each product can be identified uniquely. All information is connected to this unique trace identification.

Alternatively, identification can be done via 1D or 2D (QR) bar codes. And, since bar code and RFID readers are not suitable everywhere, algorithms are last but not least used to get a complete picture. Using actual line speed and the last point of identification, the current position of a product can be easily calculated.

When it turns out that the product location cannot be calculated, there are still other methods to ensure traceability.

One way to tell the system where a product came from or went to is, for instance, manual operator input, where the product will not leave the system without the operator entering the required information.

An important technique in improving traceability is Vision Technology, which aims to model human vision through computer software and hardware. The Vision technique enables us to 'see' what product lies in front of us, based on its shape, colour, size, etc.

With this technique we can reduce the human error factor to zero.

Monitoring

Connecting the MES system to an advanced technical control system, such as the SFK LEBLANC TCS, allows the manufacturer to make the most of the collected information.

Besides technical SCADA to monitor and control the industrial process, alarming, setting and trending is also possible.

In addition, their TCS system can use the stored data to calculate the production capacity and performance of your system, whether it is the performance per day, per department, per line or per employee, improving efficiency, quality and safety and achieving cost reduction.

At the end of the day, when the products leave the factory for global distribution to retailers and, ultimately, the consumers, the SFK LEBLANC traceability software has collected all the available information for anyone interested. It is even possible to add more information to it.

What does the future hold?

It would be an important step forward to give consumers access to the information they require. It will not be long before traceability is fully embedded in society and consumers can easily determine where their food comes from, for instance with a mobile App.

Imagine buying groceries at the supermarket. You decide to buy steak, so you pick up a package of steak. The package is labelled with a code. You scan the code with the camera on your smartphone and the code tells you exactly where the cow grew up, what it ate during its life, where and when it was slaughtered. Your phone even suggests a recipe.

When the product you purchased is suddenly recalled due to possible contamination, you automatically receive a text message.

Pie in the sky, some might say, but I assure you, it is only a matter of time. ■