

# Eliminate “the invisible”

The Food Radar® detects and removes previously undetectable foreign bodies in fractions of a second.



**Food Radar Systems.** A pioneering company in the detection of foreign bodies in food products since 2010.



Born in the industry – **RESPONDING TO A MARKET NEED**

Food Radar Systems is a pioneering company in the detection of foreign bodies in food products. The company was founded after a research project involving the Swedish Institute for Food and Biotechnology (SIK), food manufacturers and Chalmers University of Technology paved the way for the idea.

The patented Food Radar® technology was born out of a need to detect common food contaminants that could not be detected by existing technologies.

Food safety must always be at the top of the industry's agenda, and the removal of physical

contamination is central to achieving that goal. Low-density foreign bodies such as wood, soft plastics and pit fragments, have always caused problems for the industry. The traditional methods of manual removal are simply insufficient to address this issue going forward, so the Food Radar® represents a new opportunity for the food industry.

Now boasting a client list of major international food manufacturers, the Food Radar® technology is continuously proving its value.



*"Product safety has always been a strong focus in our company. We invested in our first system in 2014 and 5 years later in an expansion we decided to put in a second one with all the improvement the new 3rd generation Food Radar® offers"*

**Thomas Arnold**

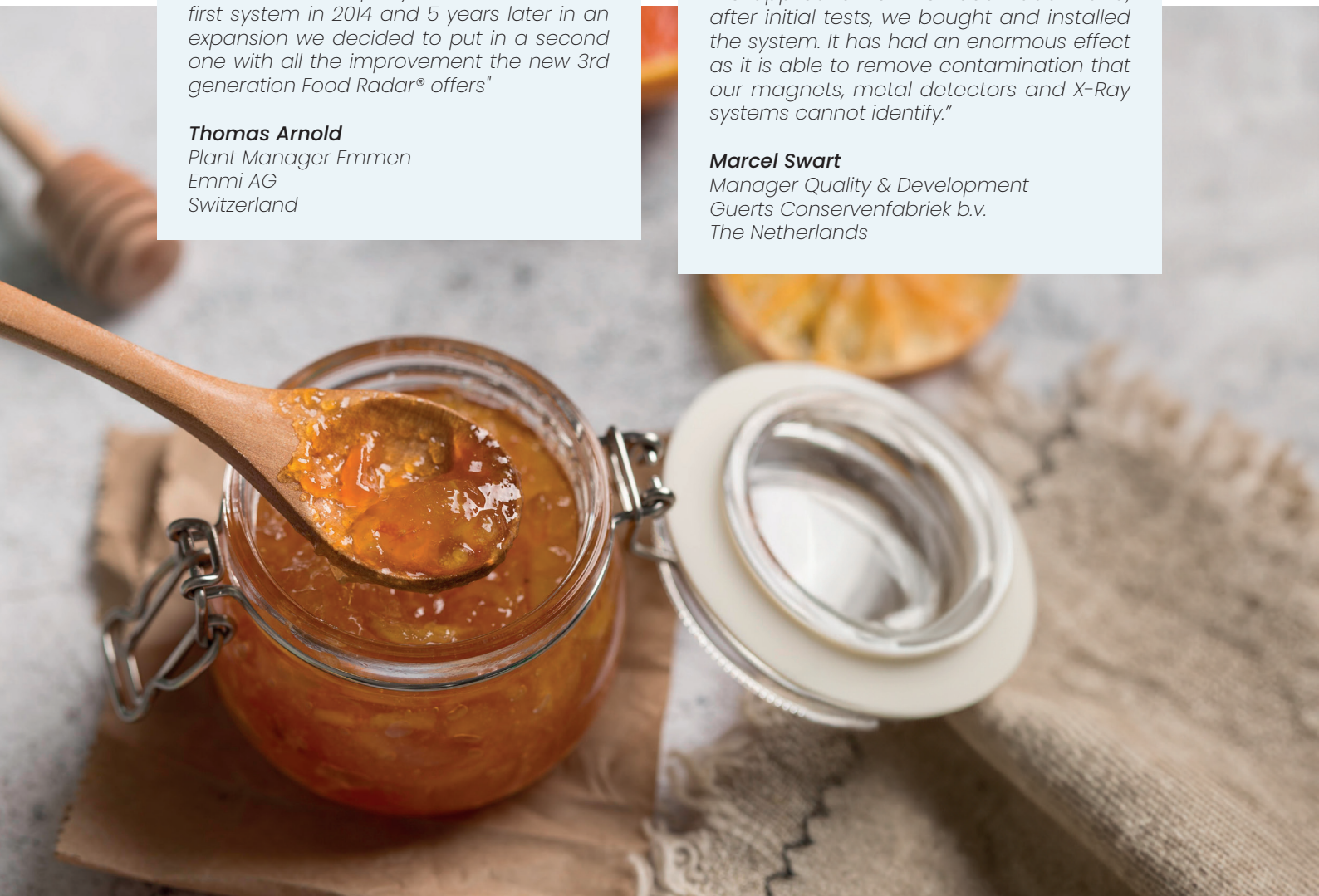
Plant Manager Emmen  
Emmi AG  
Switzerland



*"We had been searching for a solution to detect low-density contaminants such as fruit stones and plastics for our jam filling line. Until we discovered the Food Radar® solution, this proved to be impossible. We read about the application of the Food Radar® and, after initial tests, we bought and installed the system. It has had an enormous effect as it is able to remove contamination that our magnets, metal detectors and X-Ray systems cannot identify."*

**Marcel Swart**

Manager Quality & Development  
Guerts Conservefabriek b.v.  
The Netherlands



# The Food Radar® can detect truly low-density foreign bodies

The Food Radar® is a unique detection technology based on microwaves that offers the food industry a vital extra layer of protection. Adding to the known benefits of metal detectors and X-ray technology, Food Radar's® unique ability is in detecting low-density foreign bodies that are invisible to traditional technologies.

When using the term 'low-density foreign bodies', we are mainly referring to hard and soft plastics, wood, aluminum foil and rubber. In addition, our customers frequently tell us how the Food Radar has also improved the quality of their products, as it also detects unwanted food lumps in products such as pasta, cheese, starch, and pectin.

**Soft plastic** as an example is perhaps the most common food contaminant, but it is also one of the most challenging to detect. Failure to

remove it can present serious safety risks for the consumer, which is clearly something every food manufacturer wants to avoid.

In the fruit processing industry, fragments from fruit stones are a constant concern. With their sharp edges, these contaminants can potentially cause the same damage as fragments of glass. Other common threats include wood splinters from pallets, hard plastics from processing equipment, and rubber from broken gaskets.

**What makes the Food Radar technology different** from other technologies like X-ray, metal detectors and optical sorting machines, is that it uses microwaves to measure dielectric differences between the normal product and deviations caused by foreign materials.

## Materials Food Radar® can detect

Soft plastics	✓
Hard plastics	✓
Wood	✓
Aluminum foil	✓
Rubber	✓
Food lumps	✓
Fragment from fruit stones	✓
Glass	✓
Metall	✓

## Good reasons for Food Radar®

LESS WASTE	The AirZip removes loose airbubbles, improves sensitivity and keeps false rejections to its lowest.
	Rejection valve flips in less than 100 ms, keep waste to a minimum.
	Our unique speed-reading reduces rejection volume effectively.
SAVE TIME	Detecting your foreign bodies inline, ahead of packaging, keeping waste to a minimum.
	No calibration required, continuously calibrates itself through machine learning.
SAVE SPACE	Minor footprint, approx. 1 m of present pipe, no floor space required.

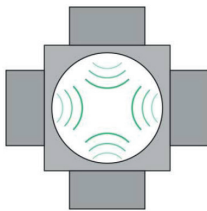
## So how does it all work? – WE BREAK DOWN THE TECHNICAL STUFF

### *The Food Radar® is a microwave-based detection technology*

Foreign bodies are detected by transmitting low-power microwaves through the food product. The system uses a microwave sensor designed for emulsions and pumpable products and measures the dielectric properties of the food flowing through your processing equipment.

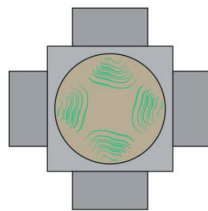
Foreign bodies produce a deviation from the norm, activating a very fast pneumatic rejection unit controlled by a proprietary automatic algorithm. The system not only detects denser foreign objects such as glass and metal, but is particularly well-suited to less dense foreign objects such as wood splinters, hard and soft plastics, rubber, extraneous vegetable matter, fruit stones and starch lumps.

#### Empty Sensor



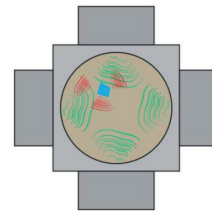
Sensor is empty, the microwave fields can propagate between the antennas without disturbance

#### Flow of Product



When there is a flow of product in the sensor, the microwaves are affected by the food. This creates a background noise that is the baseline for the measurement

#### Foreign Body Detection



When a foreign body enters the sensor, it creates a disturbance in the background noise that is detected with signal processing

## Making the “Invisible” visible







## 1. Vegetable Processing

Diced Tomato | Diced Chile | Diced Onion



## 2. Fruit Product

Jam | Marmalades | Preserves | Fruit preparations

4

Main Production  
Segments



## 3. Sauces

Pasta Sauces | Pesto | Salsas | Chillies  
Dressings | Table Sauces | Soups



## 4. Baby Food

Baby Food - particulates



*Industry-driven  
Innovation*

## **PROMOTING EXCELLENCE IN FOOD PRODUCTION**

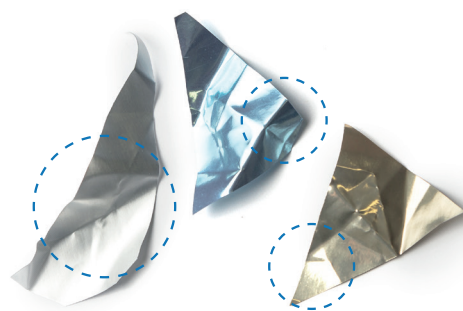
The Food Radar® is now being used by a wide variety of food manufacturers in many different configurations. The system can be easily adapted to fit existing production lines without major adjustments and makes no floor footprint.

# **Seeing is Believing**

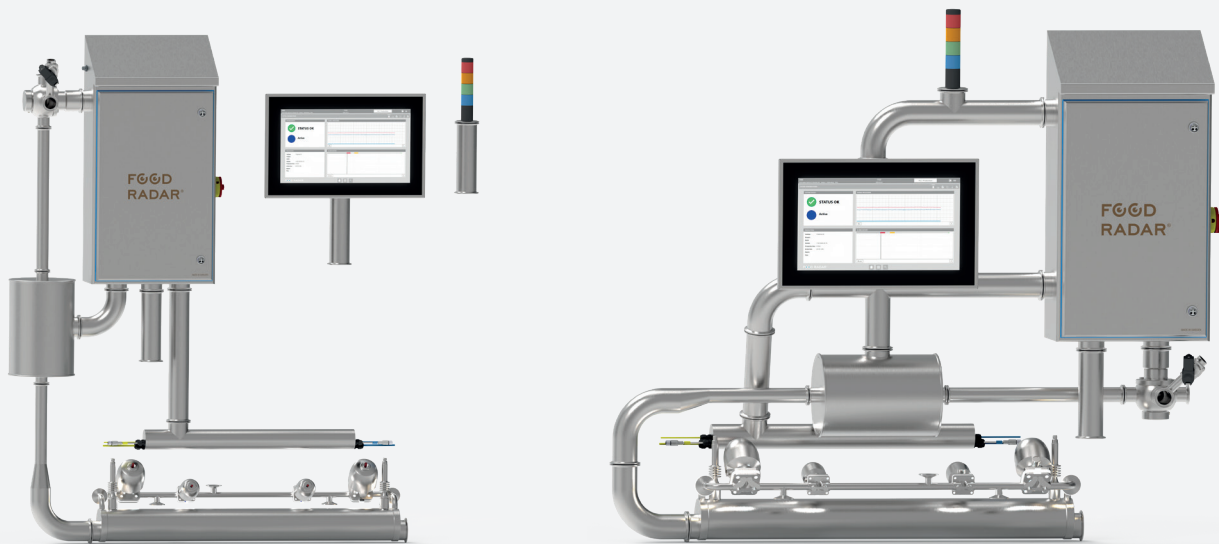
### **SPEND A DAY IN THE PILOT**

'Making the Invisible Visible' is a bold statement. We know that. If foreign body prevention is high on your company's priority list, we suggest you come and test your own product in our pilot to learn what the Food Radar® can do for your business. To make it easy for you, we have a full collection of potential foreign bodies. You can, of course,

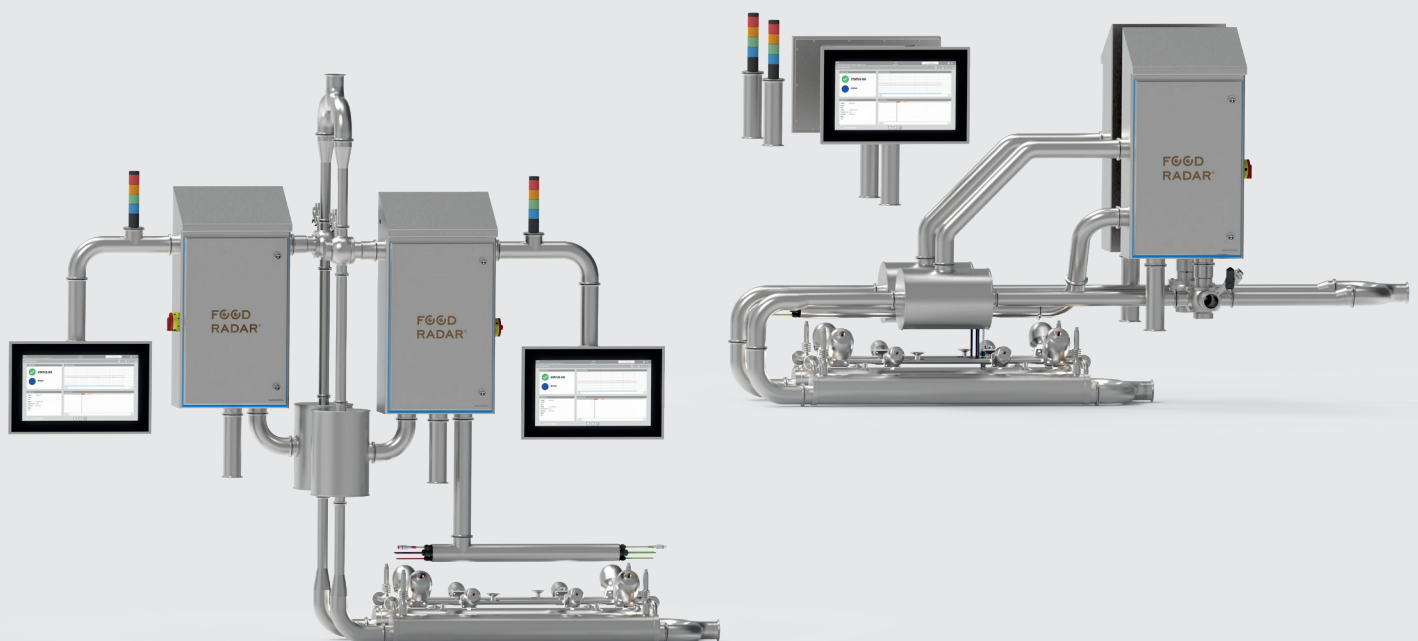
test the most common ones such as wood, soft plastics, hard plastics, aluminum foil and rubber, but we have a lot more. How about fragments of heat exchanger scrapers, nitrile gloves, ear plugs and even insects? or bring your own foreign objects and put our claims to the test. We believe you'll be impressed.



*Various system configurations*  
**BUILT TO SPECIFICATION**



**TWIN-SYSTEMS FOR HIGH FLOW VOLUMES**





# Food Radar® in the media

TAKE A LOOK AT WHAT THEY  
ARE SAYING ABOUT US



[foodradar.com/press.html](http://foodradar.com/press.html)

# Come meet us in Sweden

We are located in Gothenburg on the west coast of Sweden.  
You can reach us easily from any major city in the world.  
***We are only 15 minutes away from the GOT airport.***

#### VISITING / DELIVERY ADDRESS

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