



CASE STUDY

Food Manufacturing

How an International  
Manufacturer of Breads,  
Crackers and Biscuits  
Reduced Quality & Waste  
Losses by  
**up to 70%**



# Results



Reduced losses due to waste  
**by up to 70%**



Annual savings of nearly **€1 million**  
by reducing production losses



**138 new insights** learned  
about their process



**Higher team productivity** as losses  
can be easily traced to specific  
process inefficiencies

## The challenge

### Persistent quality and waste production losses

The company had identified significant process-driven losses in quality and waste at their toasted bread line. Problems contributing to these losses included:

- **Rejects due to weight - particularly net weight underweight**
- **Burned or over-toasted bread**
- **Size & shape variability**

Manual investigations by their process experts - including the use of an advanced self-serve analytics platform - could not locate the root-cause of the problems. In most cases where losses occurred, no clear process inefficiencies were apparent, and the data tags they investigated appeared to be operating within the permitted ranges.

#### About the company

##### Company size:

**4,200** employees,  
across **38 sites**  
worldwide

##### Annual turnover:

**€1.2 billion**

##### Industry:

**Food & Beverage**

**Focused on a baked goods production line in western Europe**

# The solution

## Identifying & preventing the hidden causes of production losses

Using the Seebo solution, the company's process experts were able to identify the hidden causes of their production losses, and gain clear recommendations as to how to prevent those process inefficiencies. Furthermore, production teams received real-time alerts as soon as those inefficiencies were detected - enabling them to prevent losses before they occurred.

## Understanding the process with Process-Based Artificial Intelligence™

Seebo Process-Based Artificial Intelligence™ is a proprietary technology designed to solve complicated process inefficiencies and enable true process mastery - revealing the hidden causes and recommending the right actions.

### WHY



Automated Root Cause Analysis reveals **why** process-driven losses happen;

### HOW



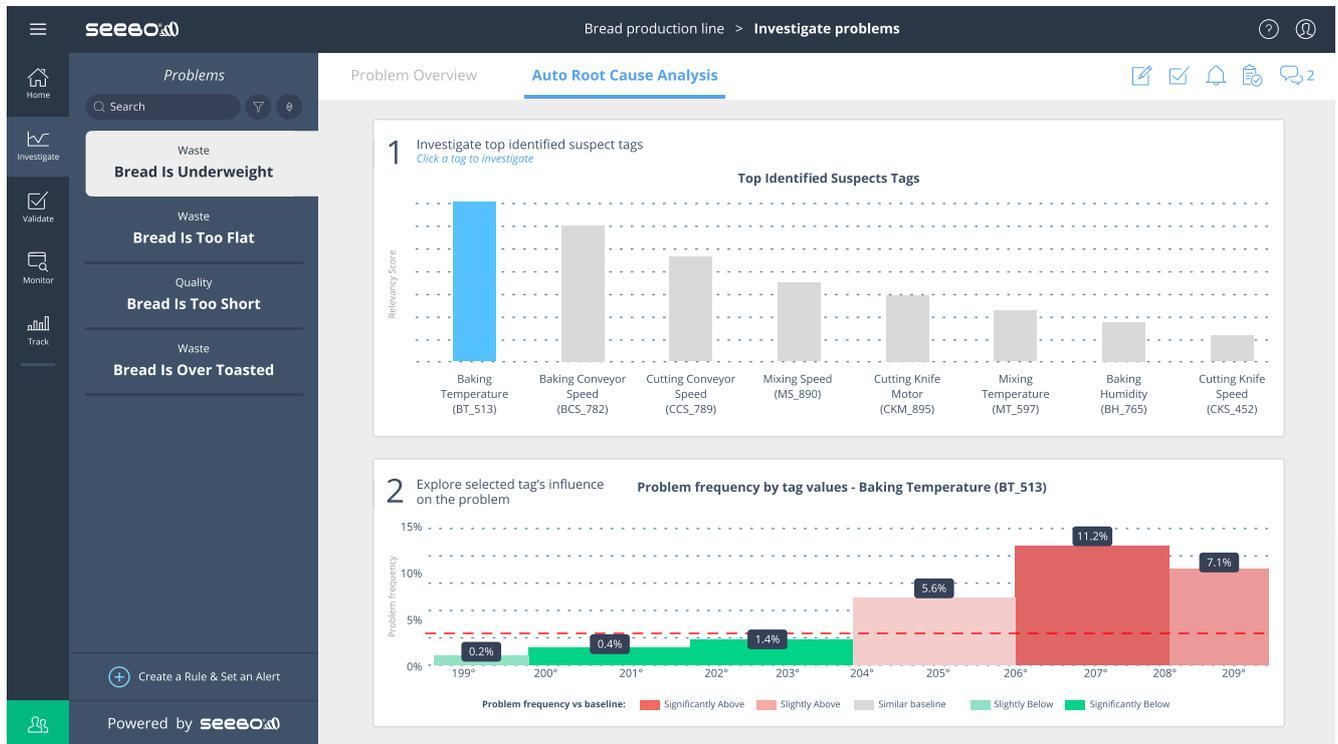
Predictive Recommendations show **how** to prevent process inefficiencies in the future, and reveal the optimal process settings;

### WHEN



Proactive Alerts show **when** production teams need to take action to prevent losses in real-time.

# Reveal “Why”: Automated Root-Cause Analysis

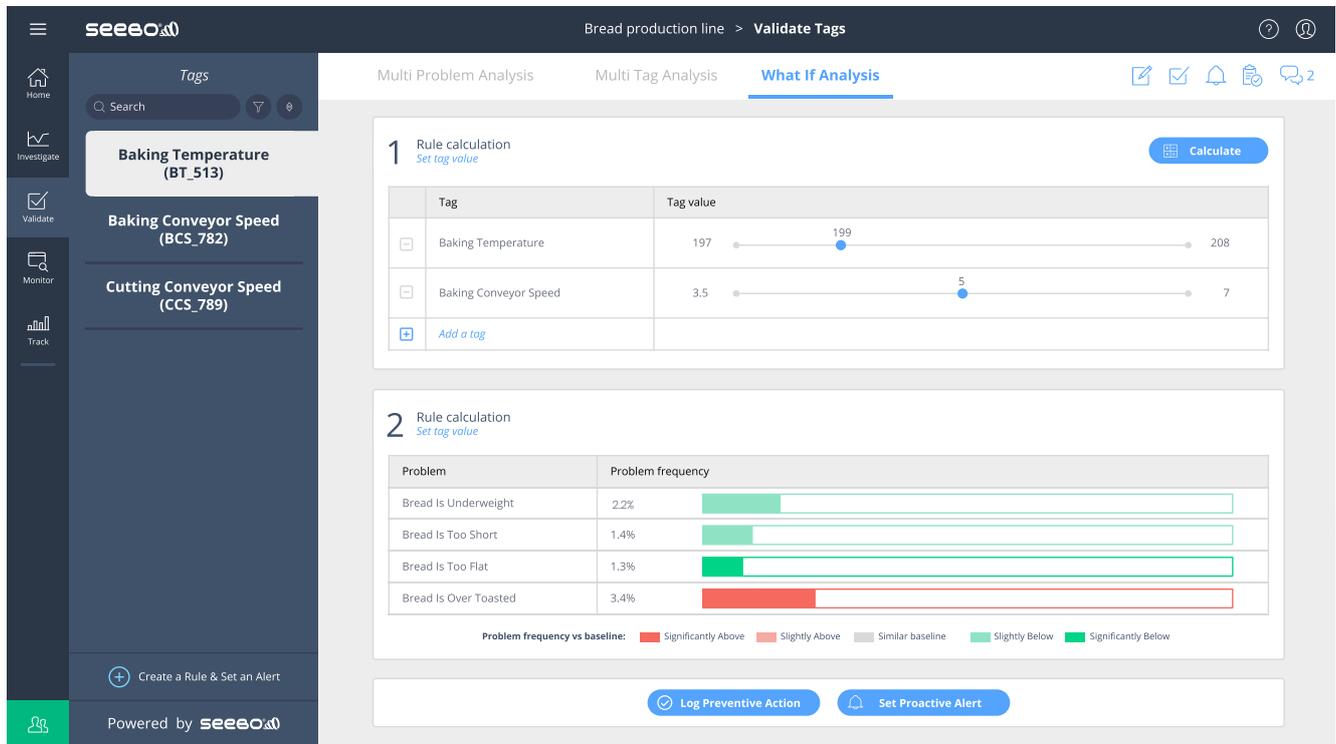


First, the Seebo solution unified and enriched all the data from their process – including raw materials – and used Automated Root-Cause Analysis to highlight the primary suspects of the losses.

The process inefficiencies Seebo identified were invisible to the human eye, as they were caused by a complex combination of behaviors among the hundreds of interrelated data tags on the line.

For example, in the case of rejects due to underweight, Seebo found that when the baking **temperature was above 204 degrees, and the baking conveyor speed was less than 5 M/S, instances of underweight** increased several fold. This issue wasn't spotted by process experts because both the temperature and conveyor speed were within their permitted ranges. With hundreds of data tags and even more interrelationships between the different tags, it was simply impossible for their process experts to ever pick up on this unique behavior.

# Understand “How”: Predictive Recommendations



Having identified the root cause, Seebo created a set of Predictive Recommendations, which identified their optimal process settings.

For example, to minimize instances of underweight as much as possible without negatively impacting other production parameters, Seebo recommended precise temperature and speed values for the baking temperature and conveyor speed respectively.

# Know “When” – Proactive Alerts

The screenshot shows the 'Alert status' page for 'Bread is Underweight'. The interface includes a sidebar with navigation options (Home, Investigate, Validate, Monitor, Track) and a main content area. The main content area displays the alert name, current status ('Alerted'), and time since alerted (2.48 min). It also provides two numbered steps for mitigation: 1. Explore the rules associated with the alert, and 2. What should you do to mitigate the cause? Step 1 includes a table of rule tags, conditions, and current values. Step 2 includes a list of standard operating procedures.

**Alert status**

Alert name: Bread is Underweight

Set current status: **Alerted**

Time since alerted: **2.48 min**

1 Explore the rules associated with the alert

**Rule Tags - Conditions and Status**

Tag	Condition	Current value
Baking Temperature	> 204°	<b>206°</b>
Baking Conveyor Speed	< 5 M/S	<b>4.5 M/S</b>

2 What should you do to mitigate the cause?

**Standard Operating Procedure**

1. Baking Temperature should be between 199° -203°
2. Baking Conveyor Speed should be > 5 M/S
3. Schedule clean and inspect
4. Follow [Company Protocol](#)
5. Report shift manager

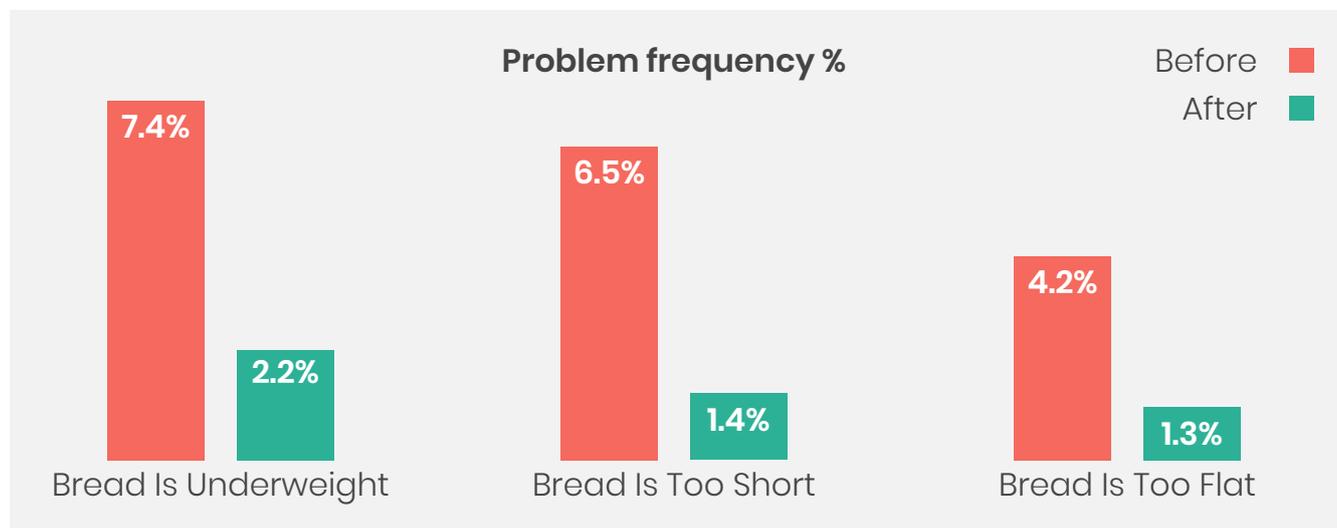
Confirm actions

These recommendations were then turned into Proactive Alerts, which were delivered to the production team via a simple, intuitive screen as soon as the related process inefficiencies occurred. The alerts clearly outlined the root-causes of the problem, alongside a set of Standard Operating Procedures, so production teams knew exactly what to do, and when.

# The Result

**higher quality + less waste =**  
**~€1 million in savings on a signal production line**

The company achieved annual **savings of nearly €1 million** on this single production line by significantly reducing losses in quality and waste using the Seebo solution. Moreover their manufacturing teams learned 138 totally new insights about their process - enabling them to effectively understand and master their processes in the long-term.



For example, the rate of waste due to underweight was cut from 7.4% to just 2.2% - a vast improvement.

This also enabled the company to increase production capacity, by eliminating waste and optimizing their production processes.

Just as importantly, their manufacturing teams gained a far deeper understanding of their production processes. Seebo's AI insights discovered no less than 138 new insights about their production processes that their teams had not been aware of.

These insights were then turned into concrete metrics to measure important decisions against. This in turn greatly increased productivity, as process experts and engineers no longer had to spend countless hours discussing and investigating theories and engaging in guesswork.



Seebo is the Predictive Quality and Yield solution.

Manufacturers use Seebo to predict and prevent quality, yield and waste losses.

Seebo Process-Based Artificial Intelligence™ is designed to solve complicated process inefficiencies – revealing the hidden causes and recommending the right actions.

By providing production teams with ready-to-use Artificial Intelligence, continuous process mastership becomes a reality.

With Seebo your team knows why process inefficiencies happen, using Automated Root Cause Analysis; how to prevent process inefficiencies, using Predictive Recommendations; and when to act, using Proactive Alerts.

Seebo customers include leading manufacturers across multiple industries, like Barilla, Nestle, Mondelez, PepsiCo, Allnex and Volkswagen Group. Seebo is backed by Viola Ventures, Ofek Ventures, Vertex Ventures and TPY Capital.

For more information, visit [www.seebo.com](http://www.seebo.com)

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