

Changing the status quo for dairy processors with real-time monitoring technology.



At CertusBio, we are on a mission to leverage the power of smart science to drive positive change for the global food processing industry. Our industry-first continuous monitoring system empowers your processing team with real-time data so you can prevent

all avoidable processing losses while safeguarding your impact on the environment.

We are now proudly rolling out with dairy producers across the globe, helping them operate with more certainty.

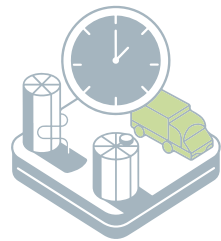


An average dairy food processing plant will lose up to 5% of products during processing; that's literally millions of dollars down the drain per year.

Our pioneering biosensor technology enables industrial dairy processors to accurately manage and optimise their food processing in real-time. Unlike lab tests that have plant operators waiting on results weeks after an event or light-based sensors based on inaccurate algorithms, our system offers unparalleled accuracy.



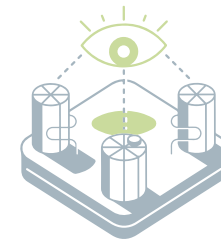
Make the Move to Real-Time Monitoring



Real-time mass balance monitoring (inputs and output).



Continuous monitoring of multiple analytes – lactose, proteins, and bacteria.



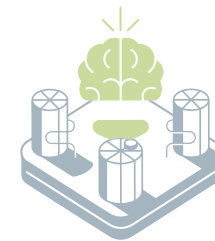
Multiple sample points across a plant or within a process.



Easy to install - no disruption to processing.



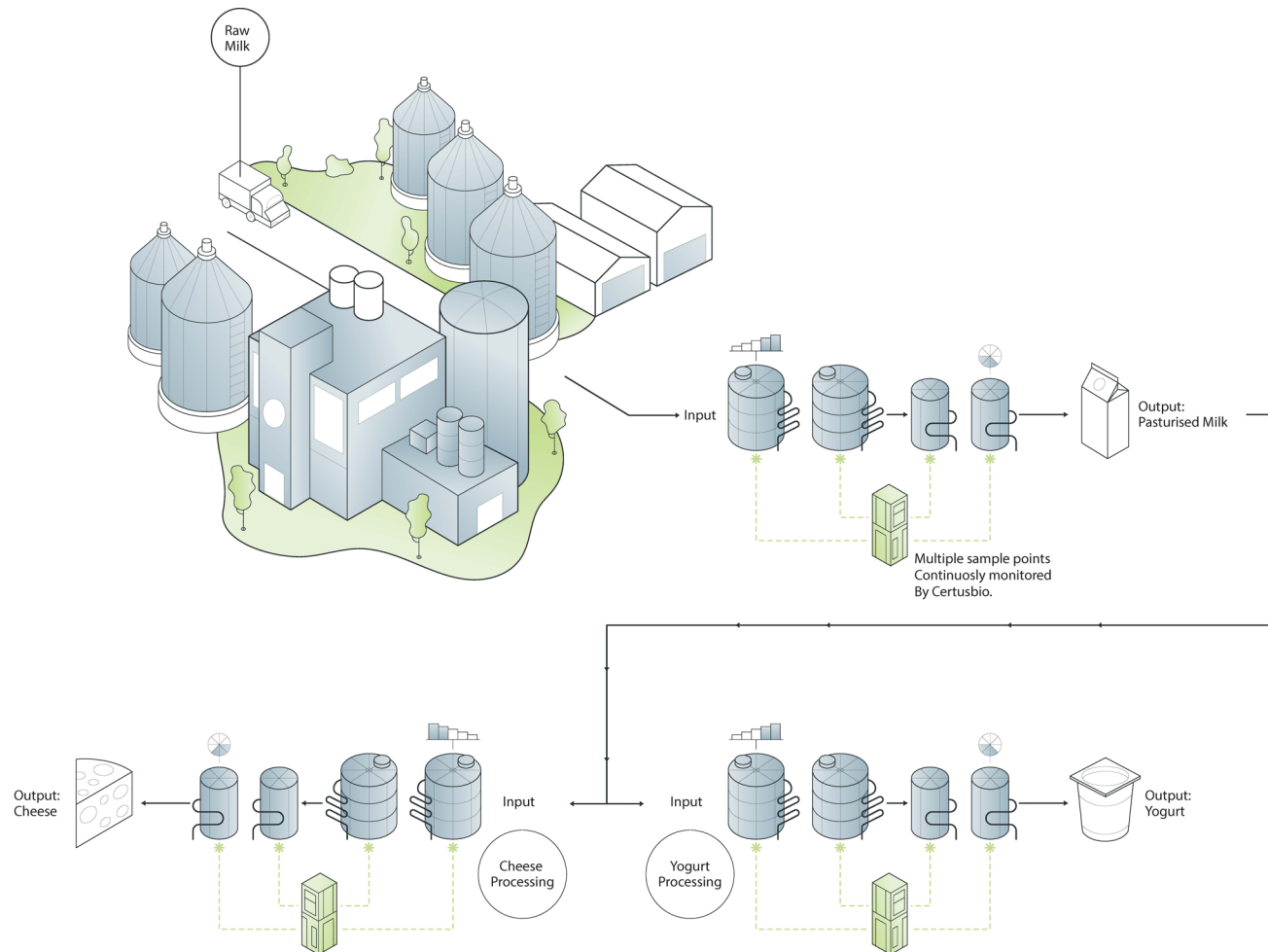
Easy to operate - doesn't require a technologist.



Self-calibrating and self-cleaning.



The Continuous Monitoring System

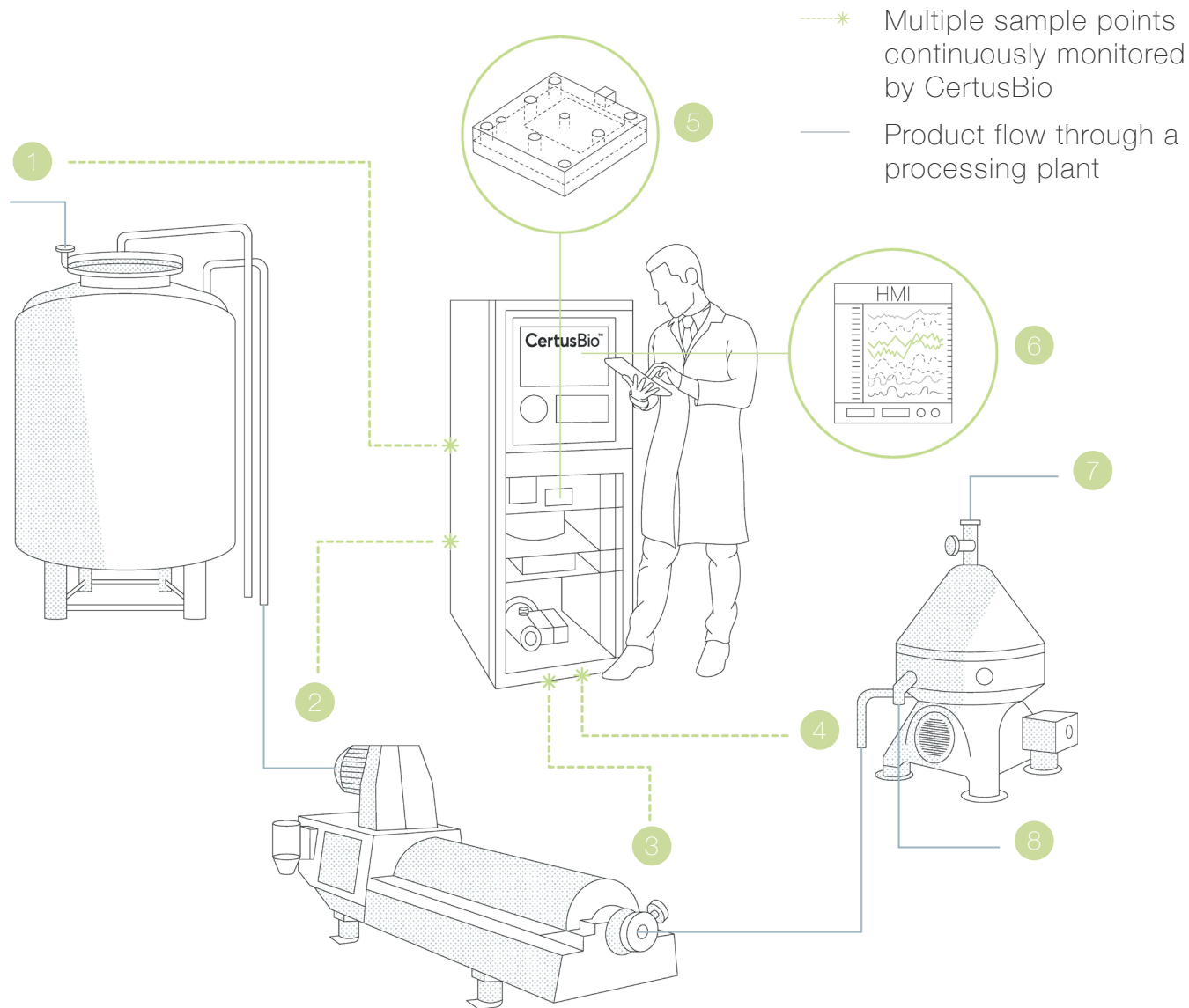


Our patent protected flow-cell technology allows for continuous biosensor measurements with no disruption to existing plant processes. The fully automated self-calibrating devices provide highly specific, interference-free continuous measurements.

The data is collected from multiple sample points across the processing plant, then collated on a dashboard. Actions can be created from measurements such as alerts and warnings for adverse events. Designed with simplicity in mind, our technology easily integrates with existing enterprise systems.



An Example System Installation



Key:

- 1 Inputs/raw materials
- 2 Example processing equipment e.g., Clarifier
- 3 Example processing equipment e.g., Waste tank
- 4 Example processing equipment e.g., Separator
- 5 Multiple targets continuously monitored in the flow-cell:
 - Carbohydrates:
 - Lactose
 - Proteins:
 - Casein
 - Alpha-lactalbumin
 - Beta-lactoglobulin
 - Lactoferrin
 - Bacteria:
 - Listeria
 - E. Coli
 - Salmonella
 - Campylobacter
- 6 Human-Machine Interface (HMI) showing graphical data to help decision making
- 7 Outputs / Products
- 8 Wastewater

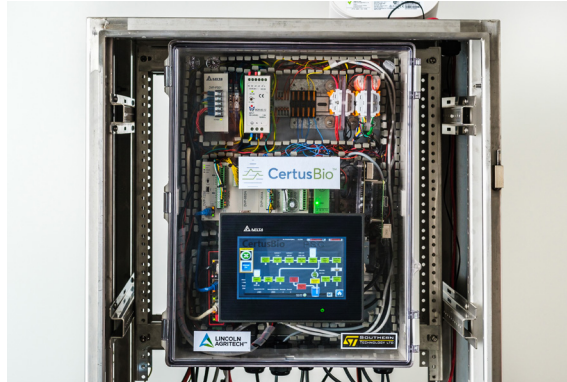


The Continuous Monitoring System



- 1 Human-Machine Interface
- 2 Patented Flow-Cell Technology
- 3 Sample Pre-Conditioning System
- 4 Sample Inputs and Consumables

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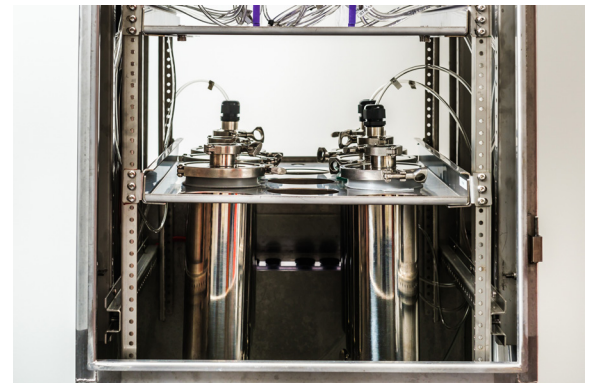
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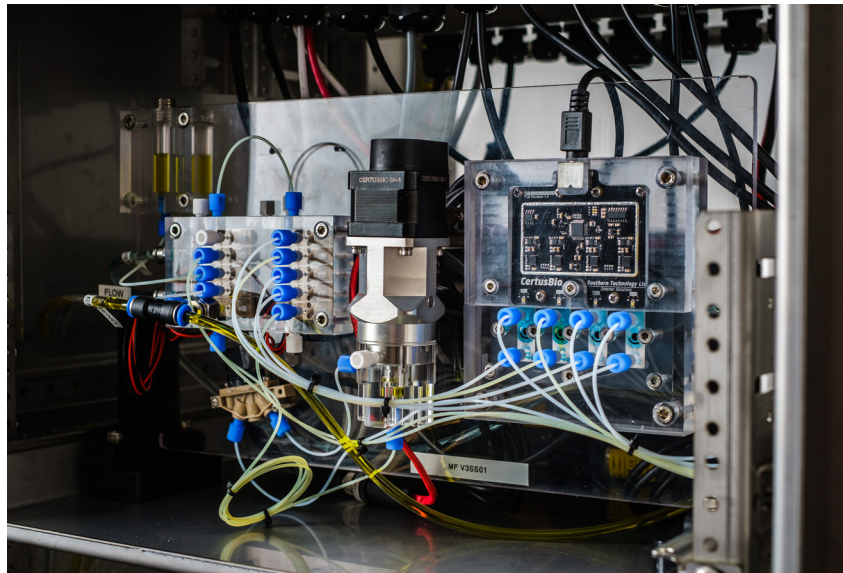
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Product Features and Benefits



Patented Flow-Cell Technology

Multiple Sample Port Device

The multiple sample port device allows for real-time mass balance monitoring (inputs, outputs, and waste monitoring simultaneously) and allows for tracing problems back to their source within a process.

Sample Pre-Conditioning System

The sample pre-conditioning ensures reproducible measurements in highly variable industrial processing streams.

Patent Pending Flow-Cell

The proprietary flow-cell technology allows for accurate measurements by ensuring a reproducible laminar flow of a food processing sample across the biosensor technology.

Biosensor Measurements

Biosensors are made using screen-printed electrodes that are designed to fit inside the flow-cell and make use of immobilised enzymes and antibodies that specifically detect a target substance and convert it into a measurable electrical signal.

CertusBio has over five years experience using a lactose specific enzyme which is capable of direct electron transfer. This feature simplifies the biosensor architecture and increases performance. Biosensors based on this enzyme technology are highly robust.

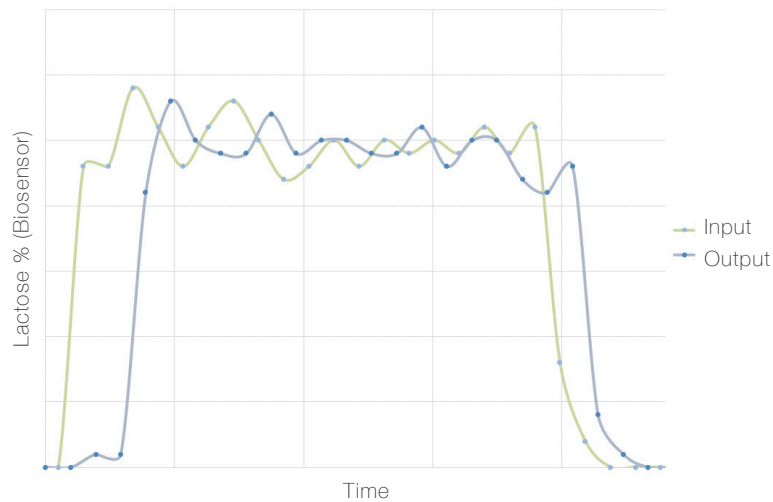
Our antibody-based sensors detect food processing targets such as specific proteins and bacteria. The immobilised antibody and target substance act like a lock & key and an electrical signal is produced when they combine. This allows the type and amount of protein or bacteria to be measured.



Performance Data

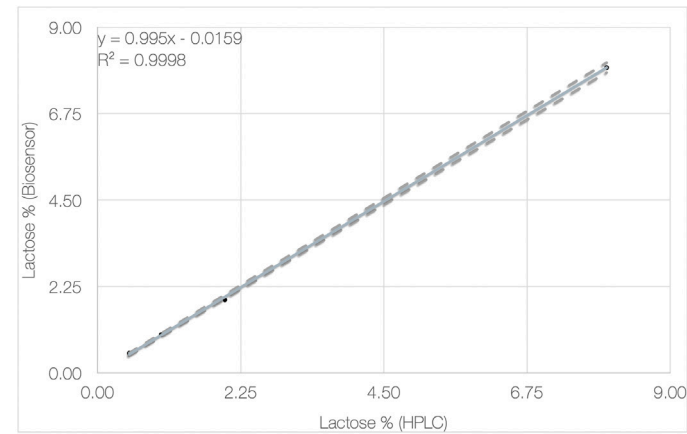
Taken from lab and on-site testing. Demonstrates accurate and robust lactose process monitoring for whey and milk products.

Process Monitoring



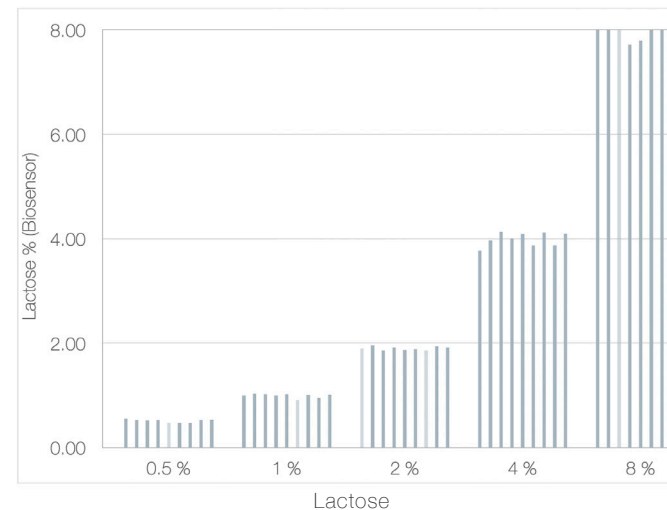
Continuous process monitoring during lactose production gives live mass balance measurements to allow processors to identify problems quickly and increase process efficiency.

Accuracy



High accuracy over a wide working range. Highly concentrated lactose samples are automatically diluted by the Sample Pre-Conditioning System to be within the working range of the biosensor.

Robustness



High precision with an RSD < 10% (lactose standard measurements using factory calibrated sensors).



The CertusBio Annual Plan

CertusBio's continuous monitoring technology is available on an annual lease plan with a single monthly fee. This includes the device, all consumables, process consultancy and maintenance:



Element	Description
Installation	Initial scoping session to determine monitoring requirements with the CertusBio team. System installation and commissioning by an engineer.
Device	The Continuous Monitoring System requires: <ul style="list-style-type: none">– Minimum footprint 60 x 75 x 230 cm (W x D x H)– Power supply, compressed air, water, waste, data and 4-20 mA electrical connections.
Consumables	A flow-cell containing biosensors capable of one-month continuous operation, calibration standards, and sample pre-conditioning buffer.
Process Consultancy / Data Analysis Advice	Process consultancy by an engineer including staff training on data analysis to centerline existing processes and expert advice on process optimisation.
Ongoing Maintenance	A technician will provide monthly service of the device to maximise performance and device up-time.



Plan Options

The CertusBio Plan has three options based on the number of sample points and target substances to be monitored within a process. These can be phased in over time.



Option	Number of sample points	Number of target substances	Pricing
Standard	Two	One	As all processing plants are unique pricing is determined based on monitoring requirements once the initial scoping session is complete.
Advanced	Four	Two	
Premium	Four	Four	

If additional sample points, target substances or multiple processes within a plant are required, we will tailor a solution for your specific needs.



Sign up for a zero risk 3-month pilot
and let CertusBio help you make your
measurable impact.



Contact Us

To learn more about making your
move to real-time monitoring.

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