

TAAG Genetics

**Food safety and quality reimaged,
from start to end.**

We are TAAG Genetics

TAAG Genetics is an international biotechnology company with more than 20 years of experience creating, developing and commercializing new technologies for DNA analysis (PCR and DNA sequencing) for the detection of microorganisms in both clinical and food samples.

Today, our team is made up of more than 400 collaborators.

LABORATORIES AROUND THE WORLD



Chicago area
USA



Mexico City
Mexico

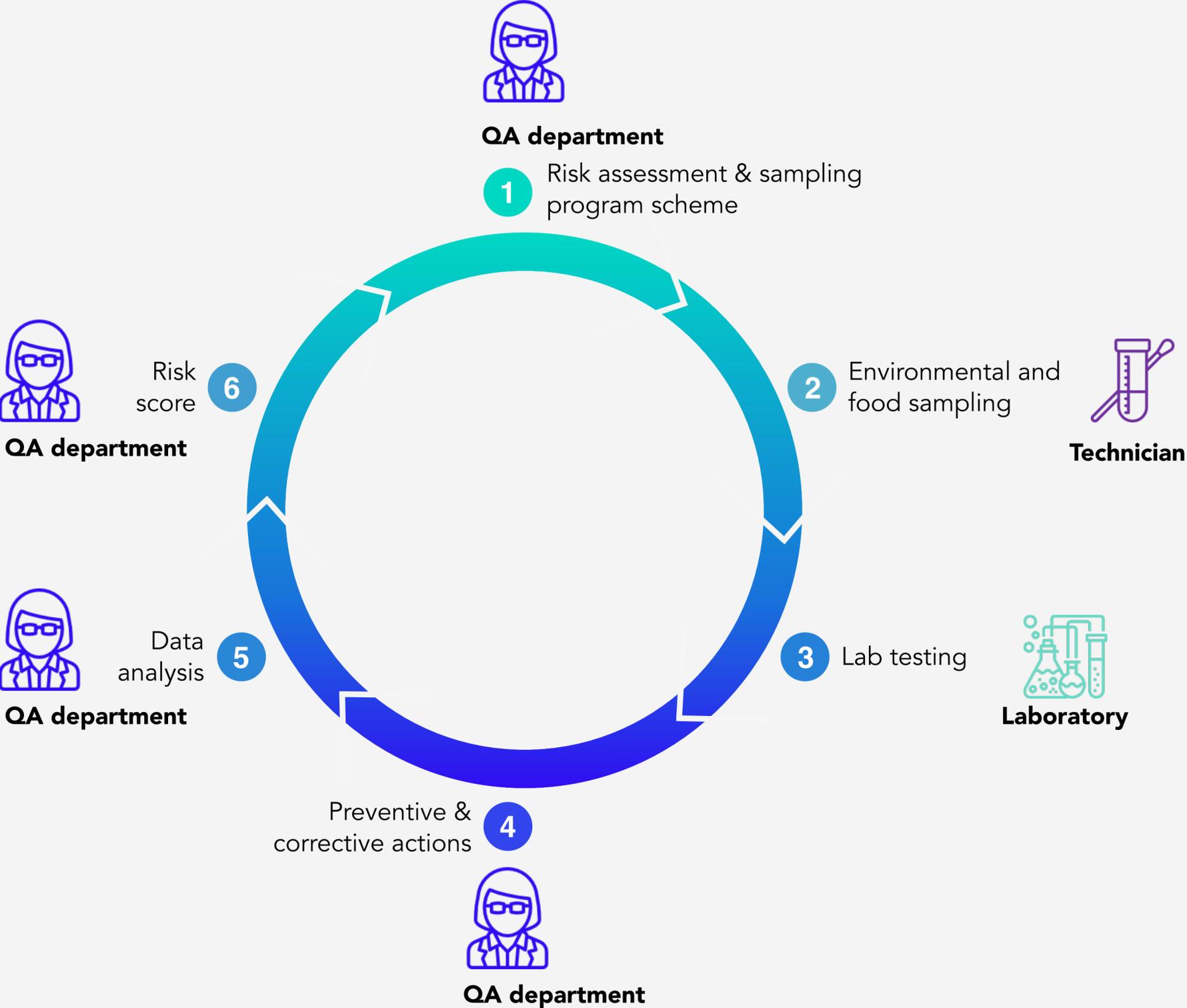


Santiago
Chile



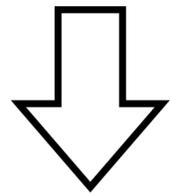
Brussels
Belgium
(soon)

This is how a proactive and preventive microbial food safety chain should be.

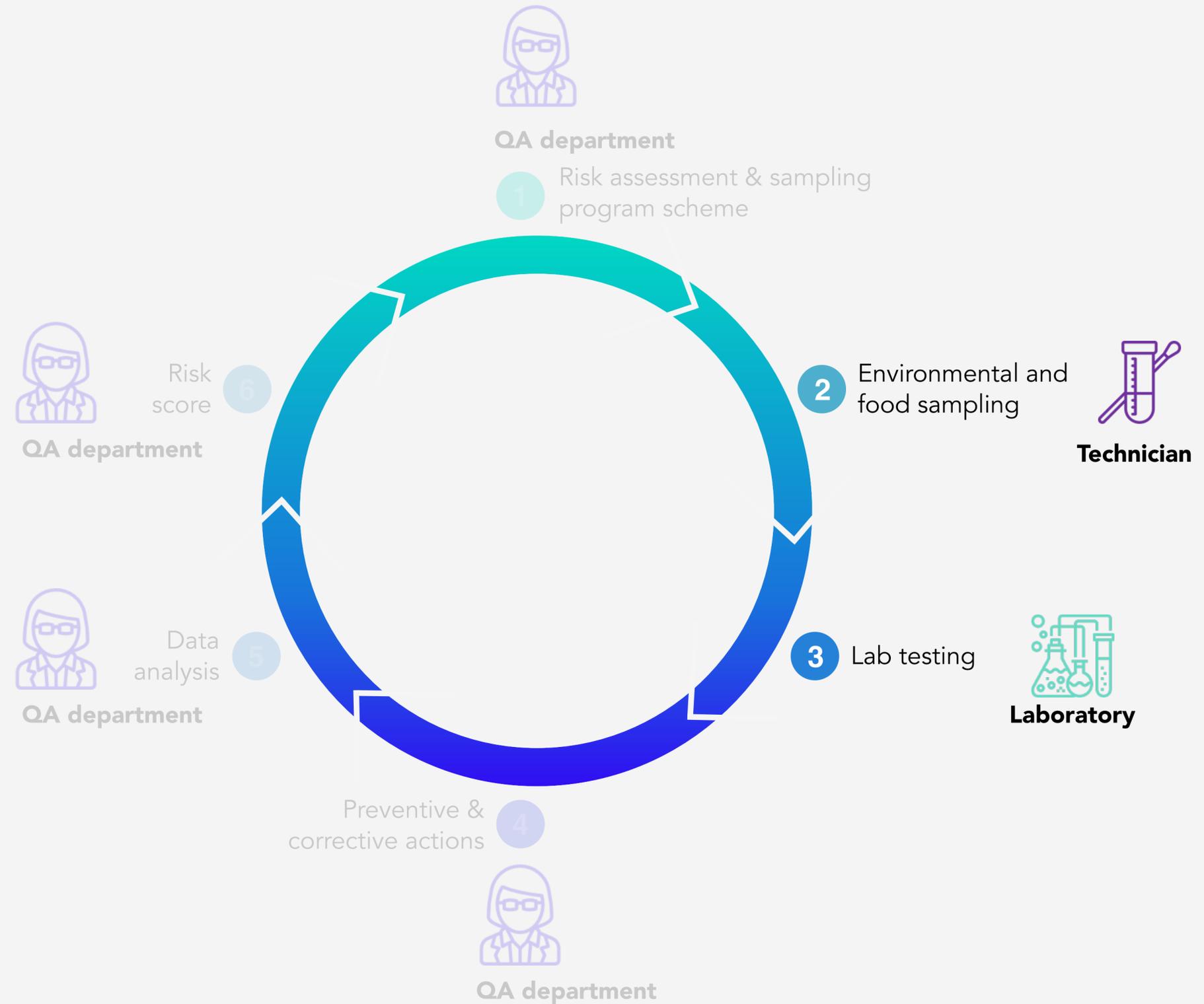


Limitations of most food safety microbiological programs.

1. There is not a rational or scientific design in the microbiological program;
2. The microbiological program is static, non-evolving or evolving very slowly;
3. Currently, there is no food risk indicator that allow evaluate the effectiveness of the microbiological program.

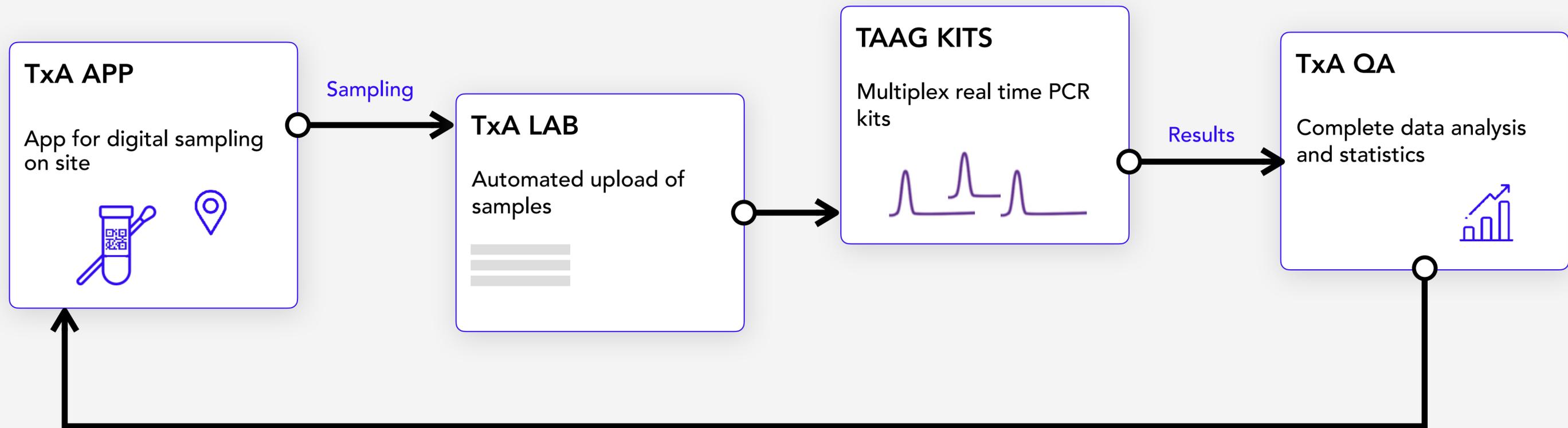


Microbiological program has little value



Genetics and artificial intelligence software applied to maximize food quality and safety

Designed to work seamlessly across all food safety lifecycle so you can be confident of delivering safe and quality food products.



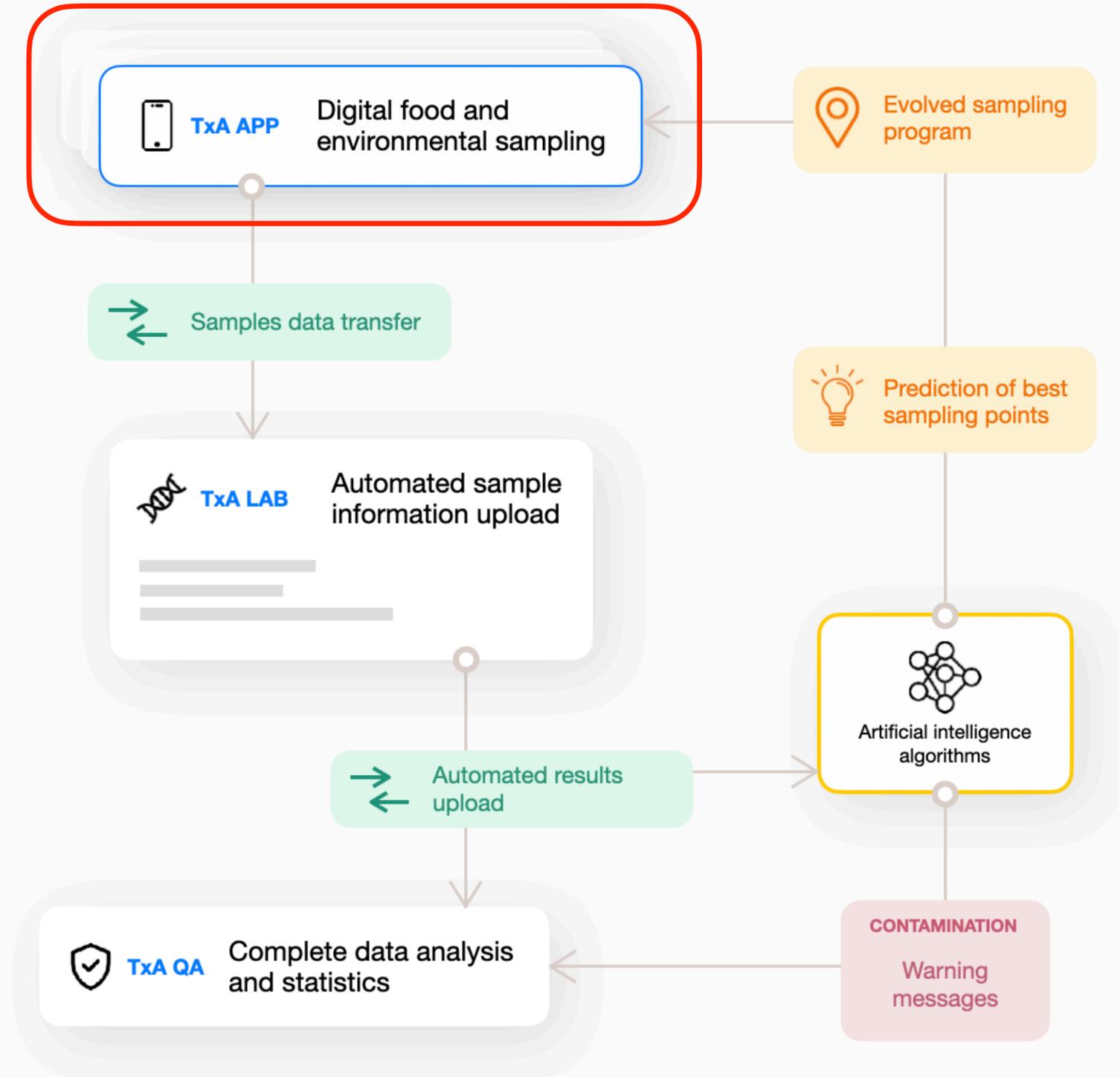
Big data analysis for looking for patterns and Ai to predict best next sampling points



Say hello to your new microbiology expert!

The TxA is a data-driven artificial intelligence platform that will help you implement a dynamic, preventive, and proactive microbiological program.

 Next slides will be about this platform

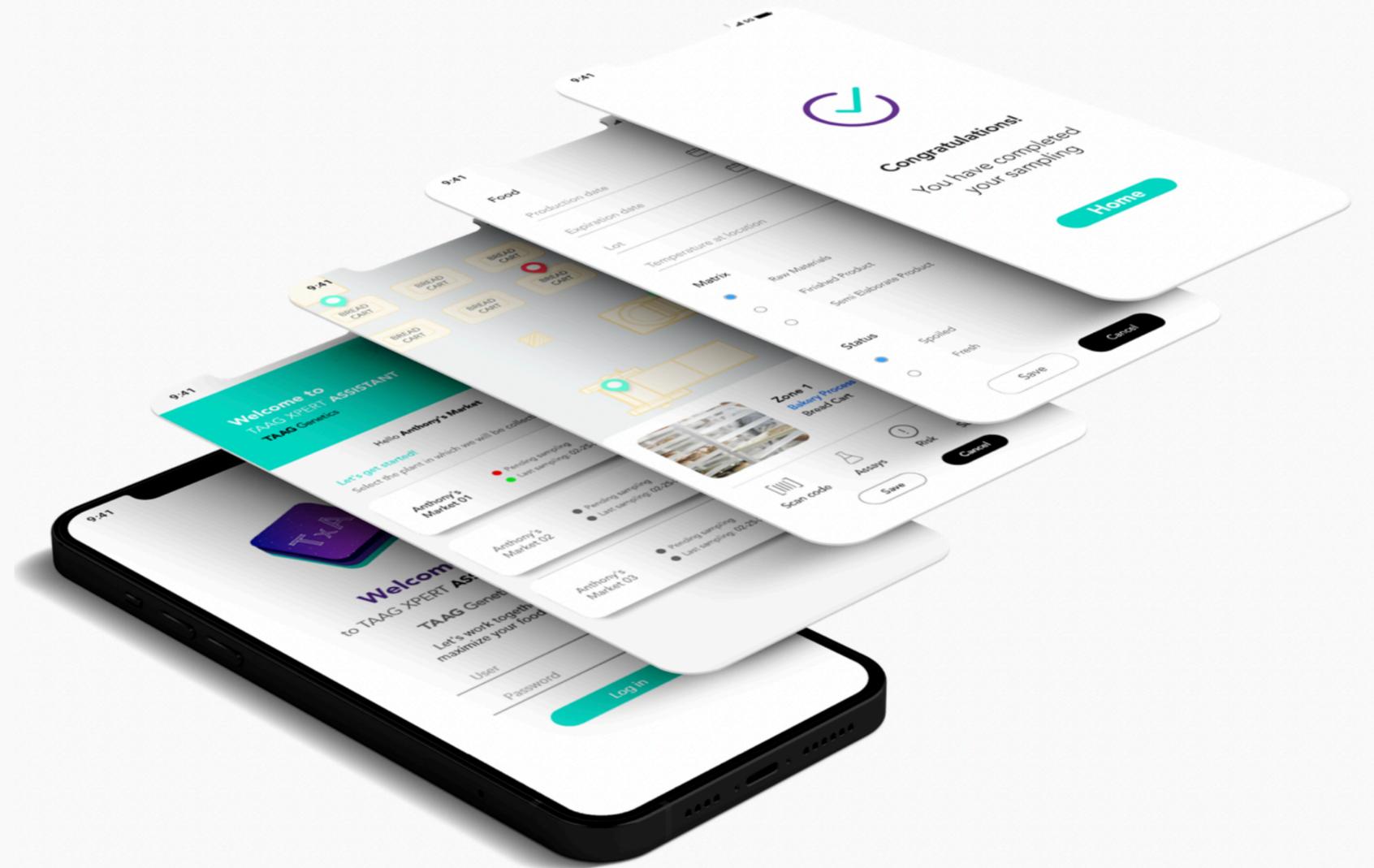




All information in one click

TxA app is a phone app that allows you to perform easy and digital sampling.

It's as simple as selecting your plant, choosing a point to sample, and adding relevant information you want to include. After you finish sampling, you will receive a detailed report of your sampling program.

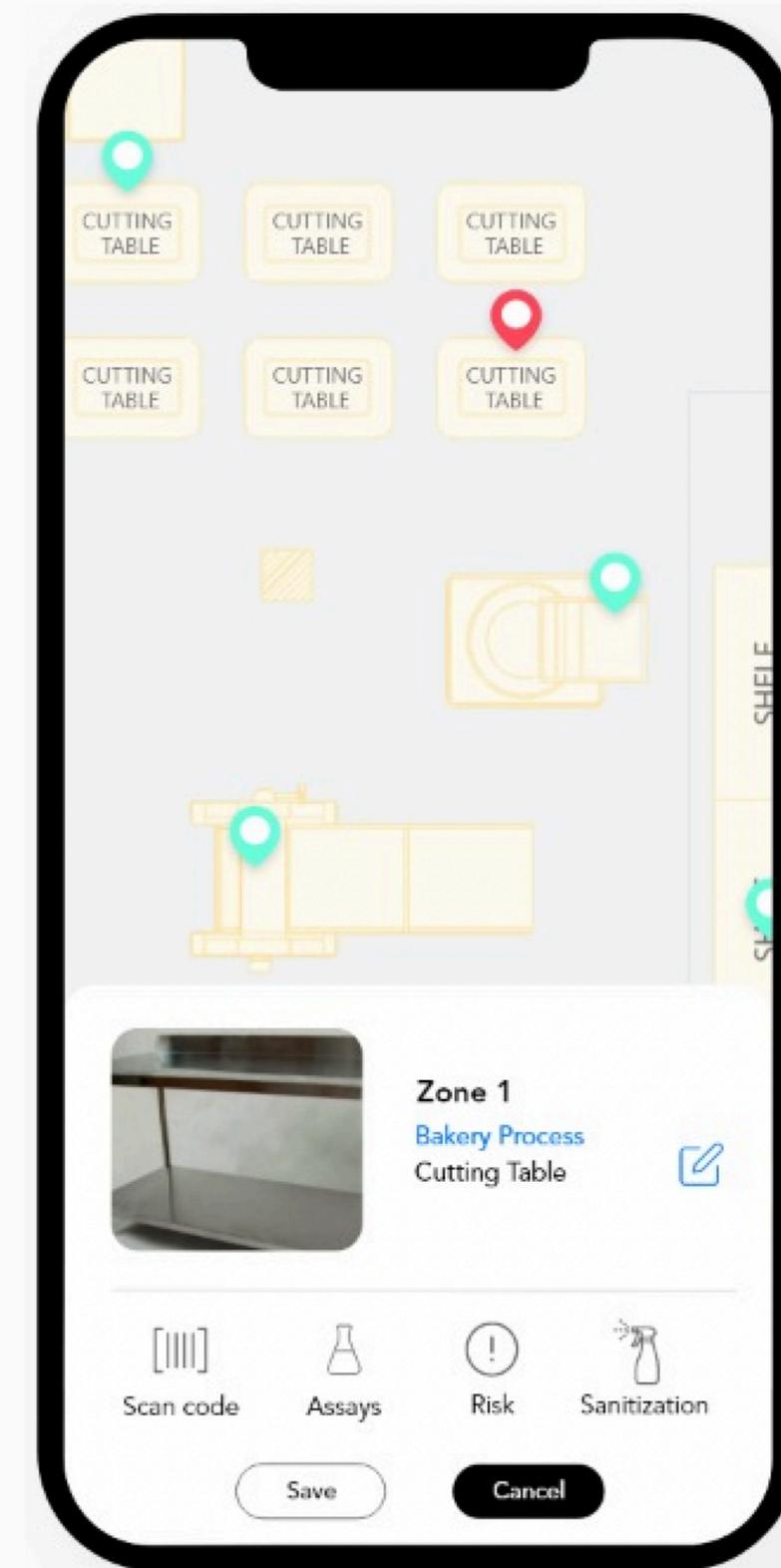




Ai applied to dynamic environmental sampling

An important feature of TxA App is the digitalization of your food plant. This will allow TxA algorithms to determine contaminated points in your plant and, according to them, automatically define the best next sampling points to track down contamination sources.

Once you select the sampling point, you can add important information such as a picture from the site, laboratory analyses, sanitization status, and more.



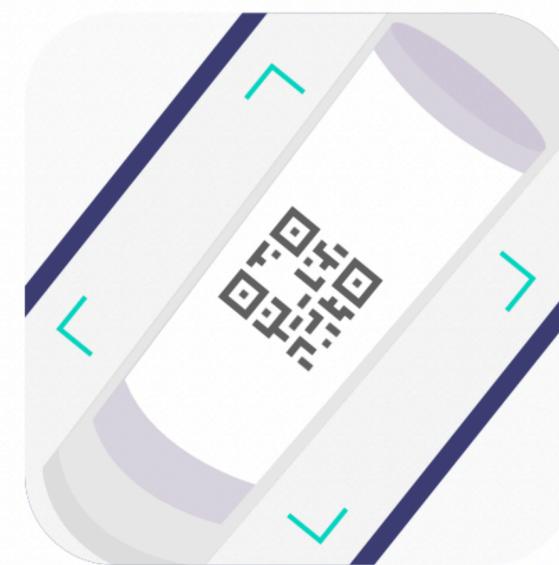


Ai applied to dynamic environmental sampling

Using our TAAG S11 NeutroSampling kit to perform environmental swabbing, you can automatically link all digital information with the sample by scanning the QR code printed on TAAG S11 NeutroSampling swabs.



Sample



Scan



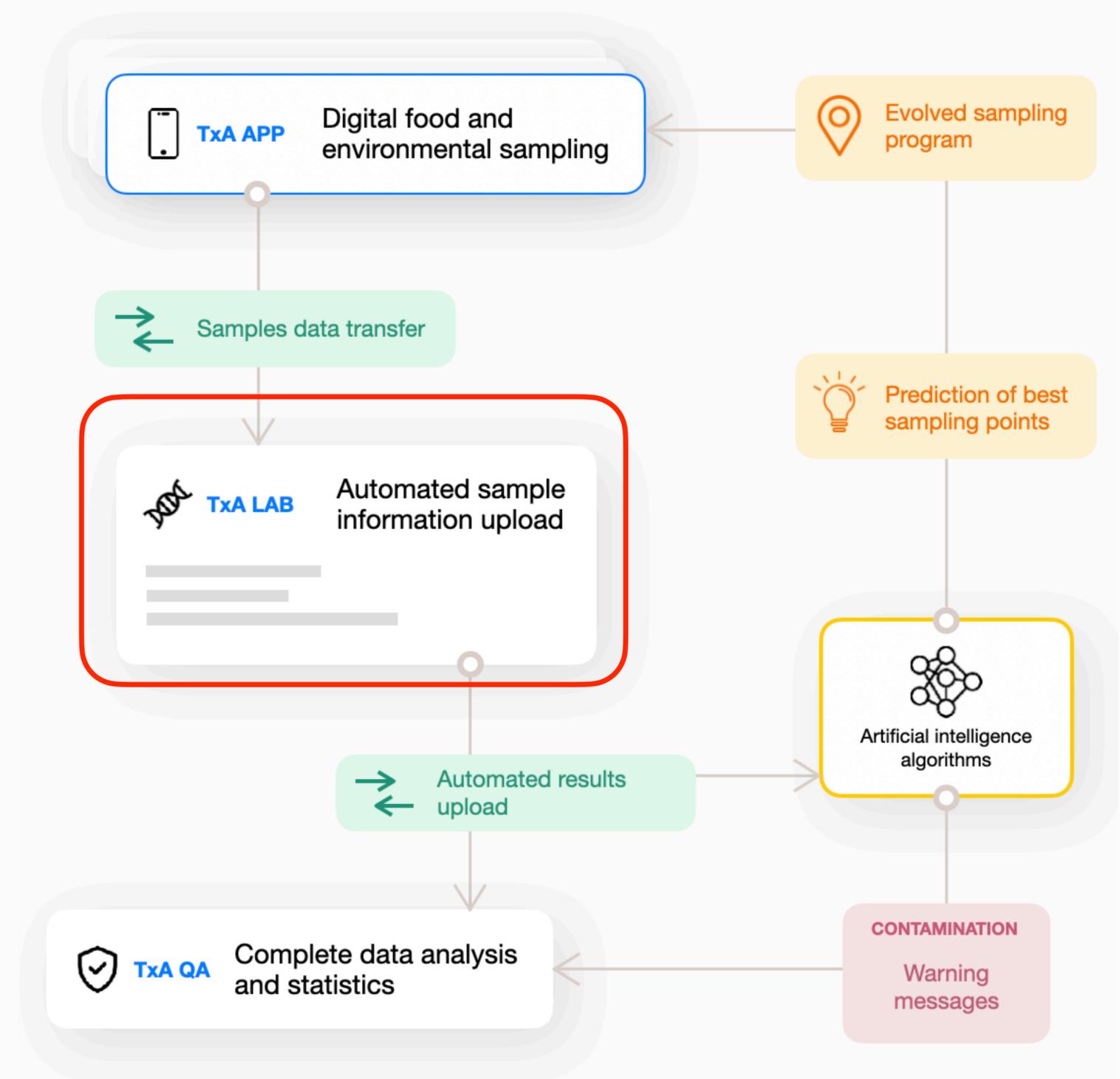
Connect



SOFTWARE

Say hello to your new microbiology expert!

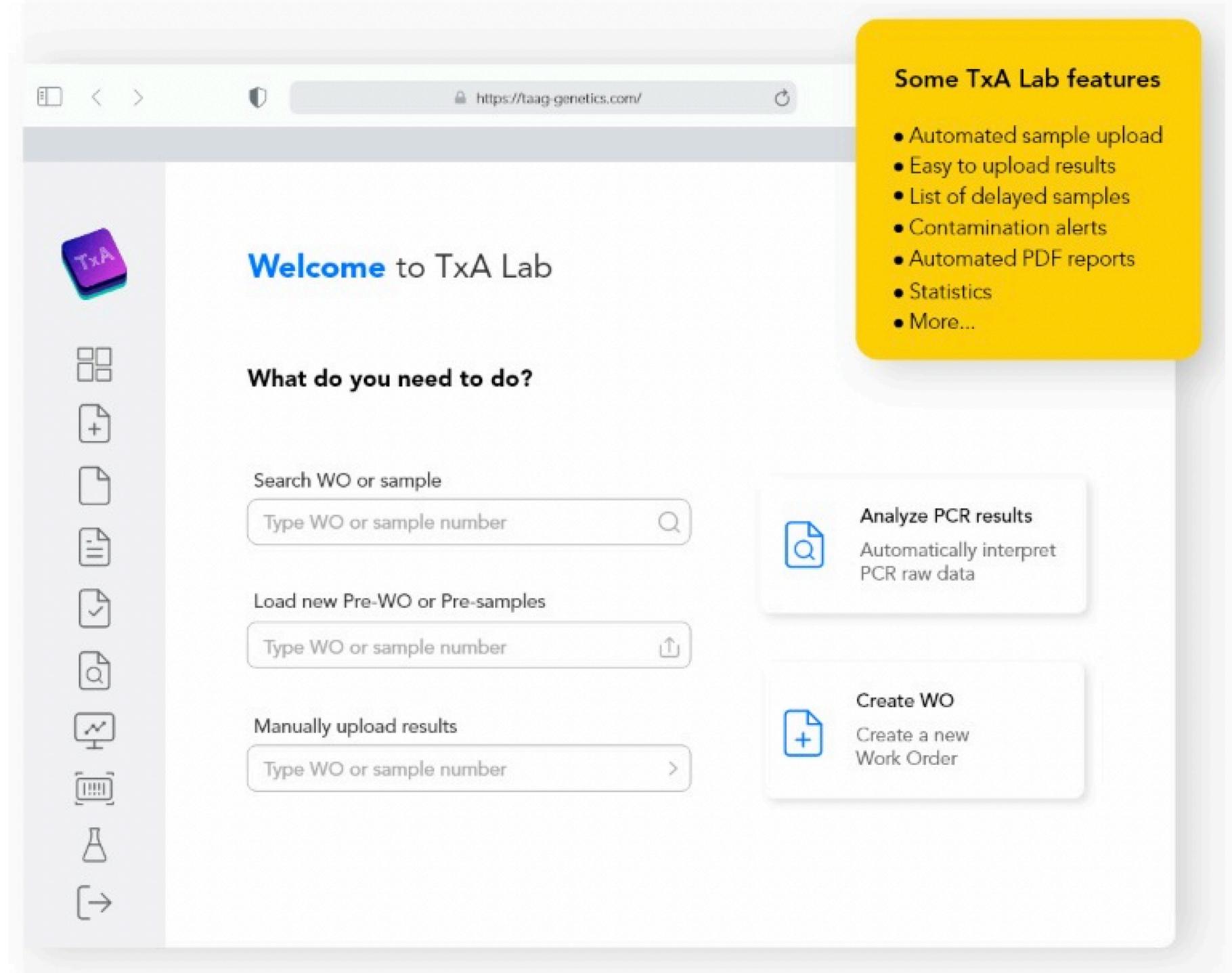
 Next slides will be about this platform





Advance laboratory management software

This platform links TxA app with your laboratory operations. Among its features, TAAG PCR kits' results are uploaded automatically and you will have full traceability, from sampling to results.



Some TxA Lab features

- Automated sample upload
- Easy to upload results
- List of delayed samples
- Contamination alerts
- Automated PDF reports
- Statistics
- More...



Analyze PCR results
Automatically interpret PCR raw data



Create WO
Create a new Work Order



Low cost pathogen PCR testing, finally!

Pathogen detection has never been easier! For the first time, your team can detect 4 pathogens doing only one single enrichment and one PCR reaction.

This means, 4 times bigger productivity and 4 times lower costs.



Salmonella spp



Listeria monocytogenes



E. coli
O157:H7



Campylobacter spp



Listeria spp



E. coli



S. aureus



C. sakazakii



Campylobacter species



Our kits

Our Pathogen PCR kits have been designed to be easy and intuitive, and include everything you need to upgrade your microbiology laboratory quickly and effectively. Besides, our kits include positive, negative, and internal controls. This way, you can be sure your results are 100% reliable.

CE-IVD certified
Manufactured under ISO 13485





Our kits

All of our Pathogen PCR kits can be found in a ready-to-use SPID format that can be easily implemented in low-complexity laboratories, since reagents are pre-loaded in PCR strips or plates, allowing you to optimize your workflow without tedious operation times and without complex equipment or highly trained personnel.

Simply load your DNA, take your strips or plate to the PCR equipment... and you're ready!

CE-IVD certified

Manufactured under ISO 13485





TAAG Multiplex PCR technology

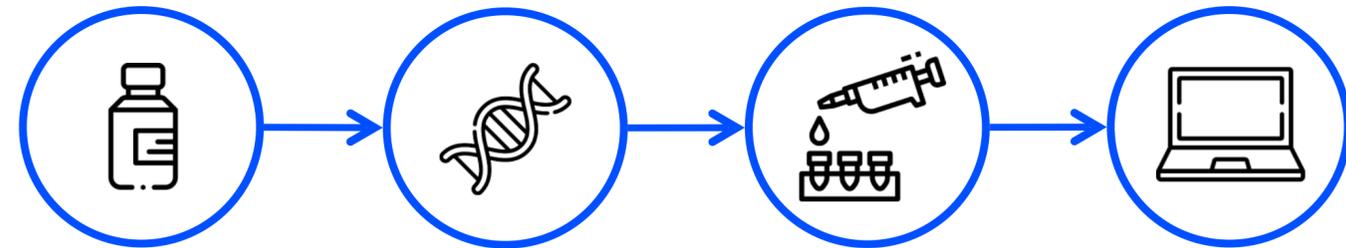


AOAC Validated

Main features of TAAG Technology:

1. Multiplex Real time PCR kit for simultaneous detection and identification of Salmonella spp, Listeria monocytogenes, E. coli and S. aureus.
2. All PCR reactions include an internal control to assure accurate results.
3. All reagents in format ready to use.
4. Using the TxA Xpert Assistant, automated interpretation of results.

96 SAMPLES



24 hrs.
1 enrichment

60 min.
1 DNA
extraction

100 min.
1 PCR

4 Results/sample
384 results

Over 2,000,000 samples have been analyzed using TAAG Technology. Our technology is used by several Fortune 100 companies.



TAAG Multiplex PCR technology



100% inclusivity

- 66 strains of *Listeria monocytogenes*
- 184 strains of *Salmonella*
- 50 strains of *S. aureus*
- 50 strains of *E. coli*

100% exclusivity

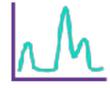
- 77 different strains

100% sensitivity and specificity (without confirmation)



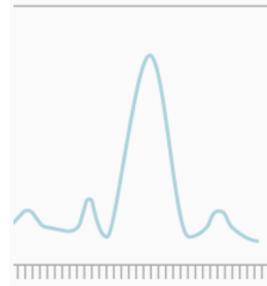
The TAAG F41 VIP assay is a simple method to perform providing accurate presumptive results in 24 hours from sample enrichment. The rapid method offers considerable cost and time savings compared to the ISO 11290-1:2017, ISO 6579:2017, ISO 6888-3:2003, and ISO 7251:2005 reference methods. The user manual is simple and easy enough to follow while the instrument software only requires a few simple steps to operate. Sample analysis is simple enough that a technician of any training level could conduct the assay and obtain accurate results. The method shows good specificity for all target strains tested and did not cross-react with any of the non-target strains tested



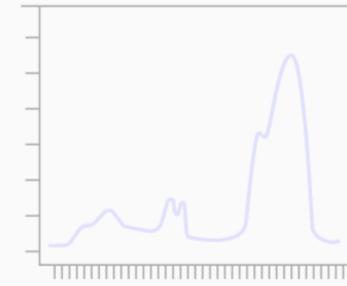


Rapidly detect and identify over 50 spoiler microorganisms in one single PCR reaction

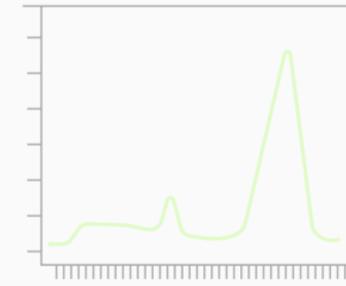
Lactobacillus plantarum



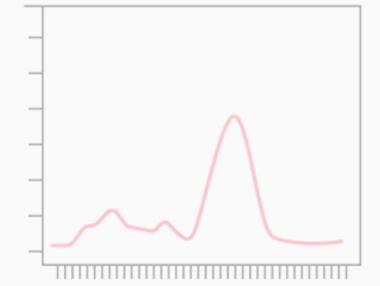
Aspergillus niger



Talaromyces funiculosus



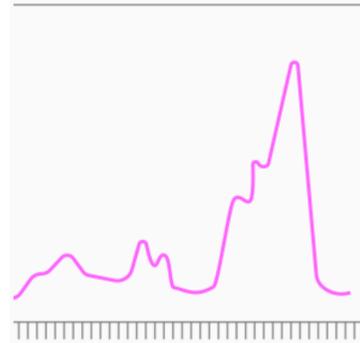
Acetobacter aceti



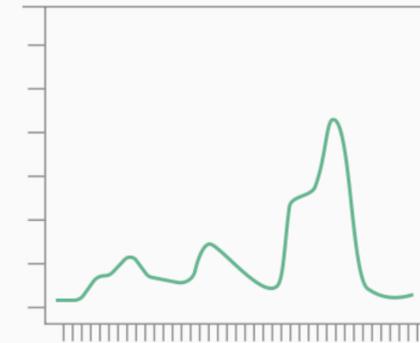
Leuconostoc



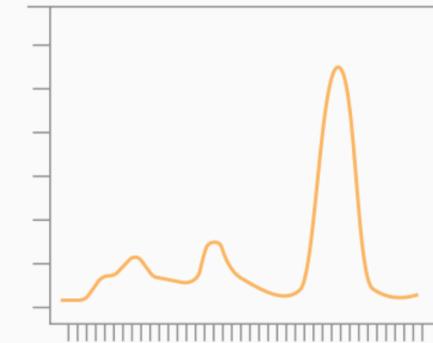
Lactobacillus plantarum



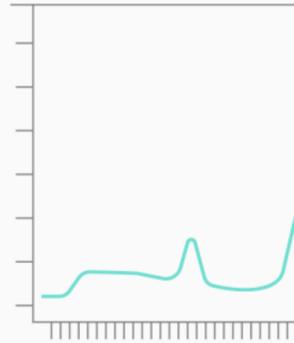
Asaia bogorensis



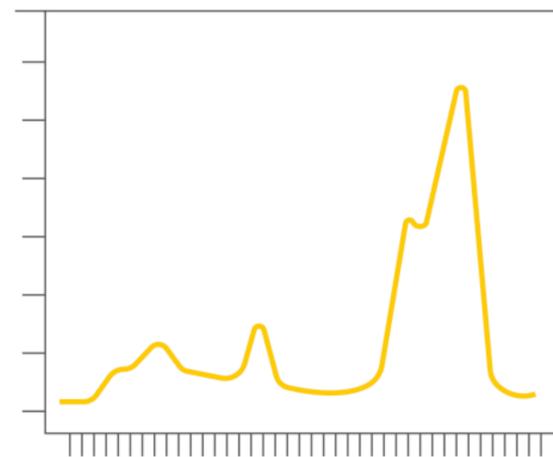
Penicillium citrinum



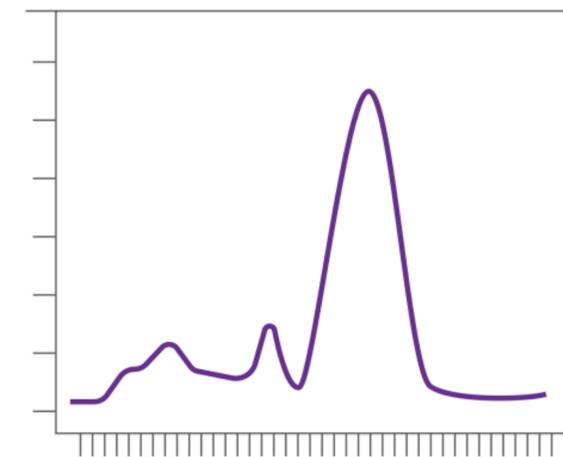
Alicyclobacillus acidophilus



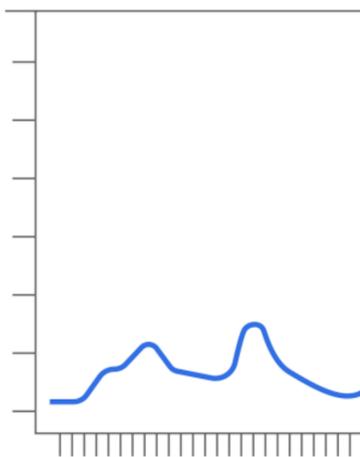
Zygosaccharomyces bailii



Pseudomonas aeruginosa



Fusarium oxysporum



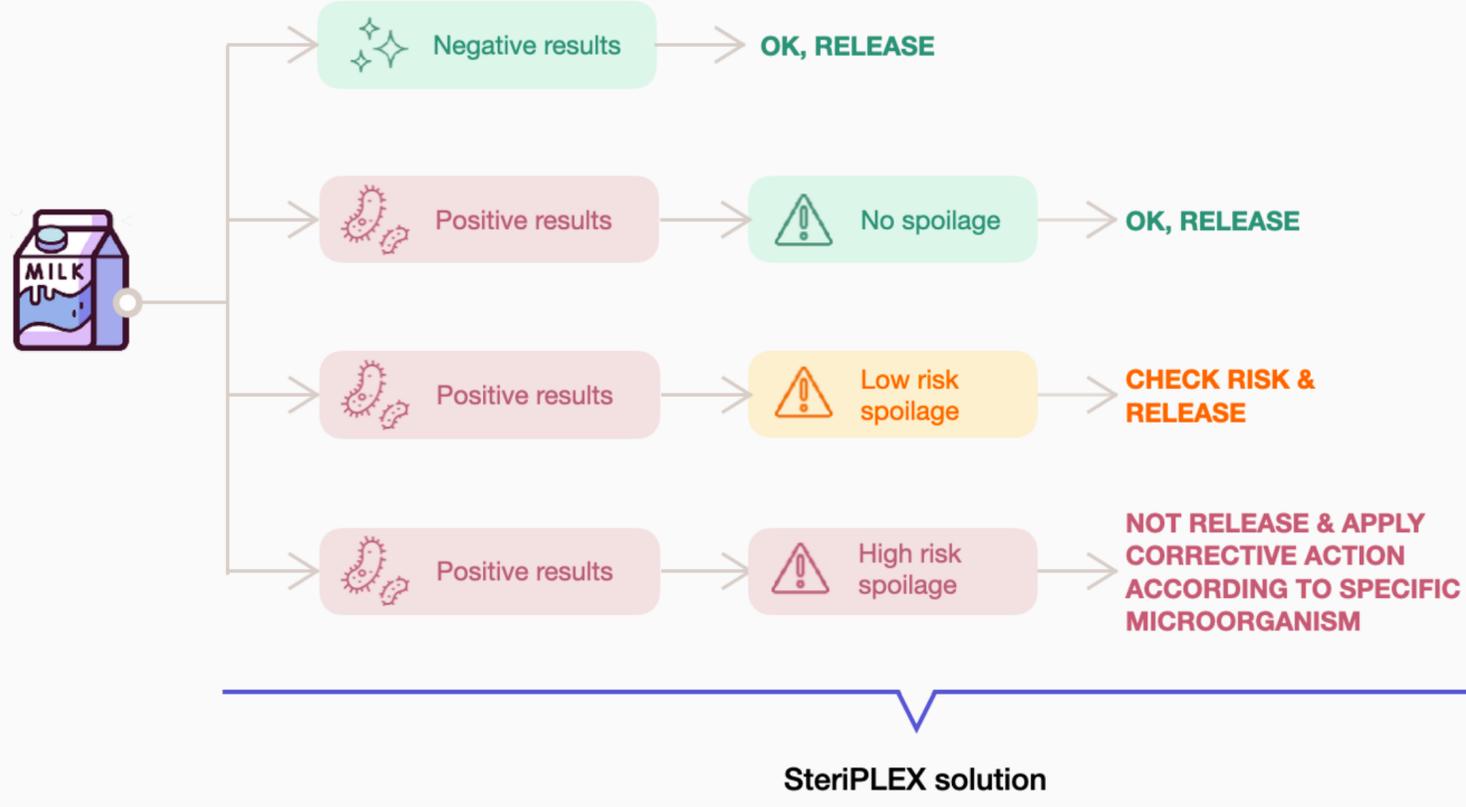


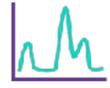
Detect and identify the specific microorganisms that can spoil your products

Using our TAAG SP laboratory test, you can rapidly identify specific microorganisms in your sample, thus being able to answer a fundamental question:

My sample is positive for microorganisms, but does it have any spoilage microorganism?.

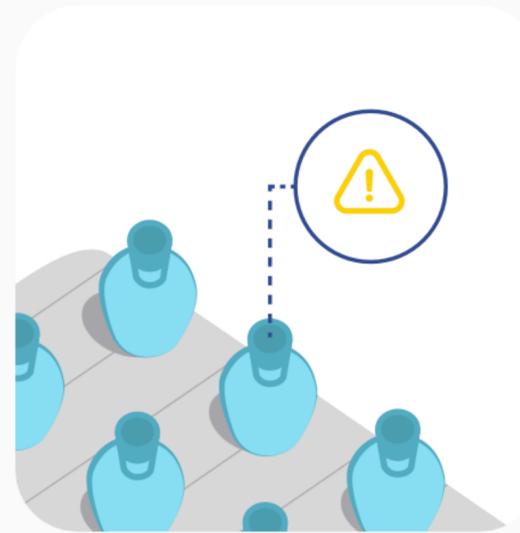
SteriPLEX kits allows a better spoilage strategy





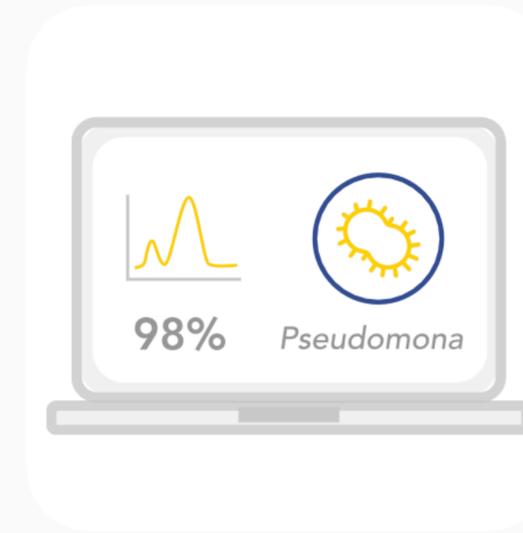
Avoid spoilage by tracking contamination

TAAG SP systems let you know exactly which microorganism is causing problems with complete traceability, so you can plan strategic corrective actions to reduce losses and optimize your production.



Detection

Detect spoilage microorganisms that may be present in your food or beverage samples.



Identification

Automatic raw data analysis powered by AI for identification of microorganisms



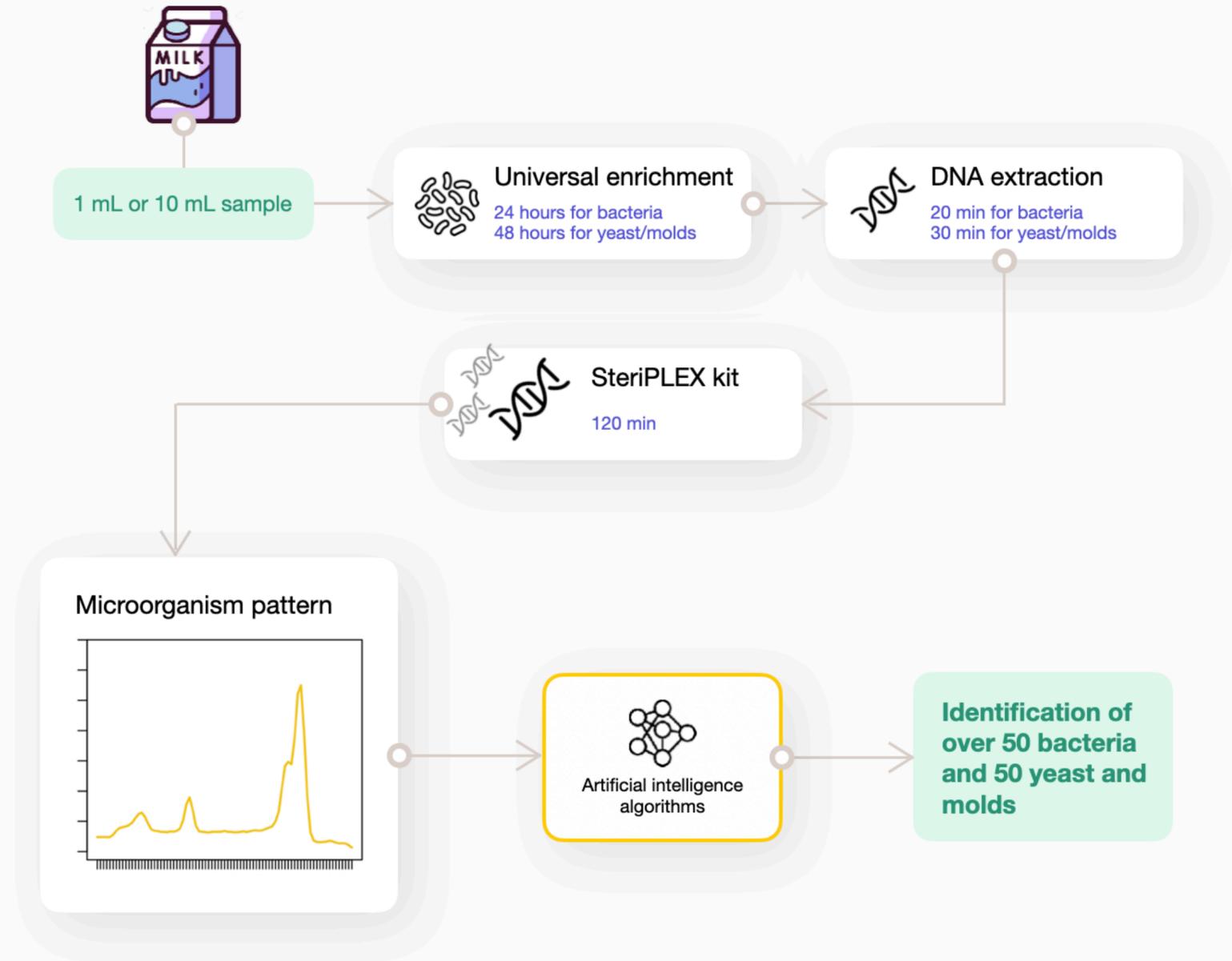
Traceability

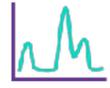
Full traceability of microbial dynamics to identify root sources of contamination



One simple, but powerful, protocol to avoid spoilage of your products

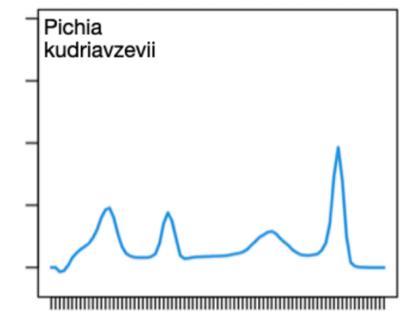
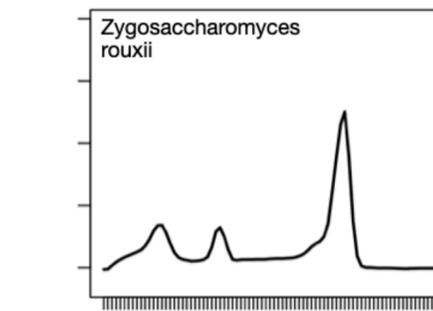
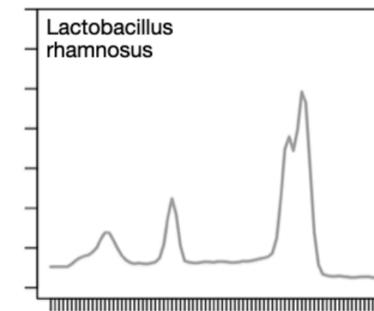
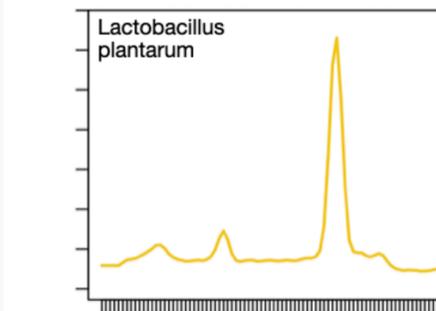
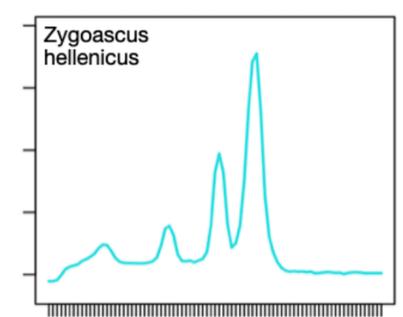
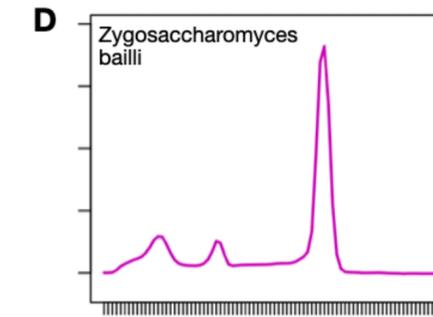
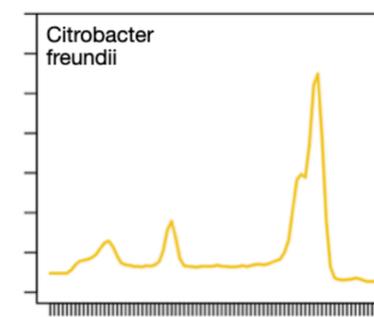
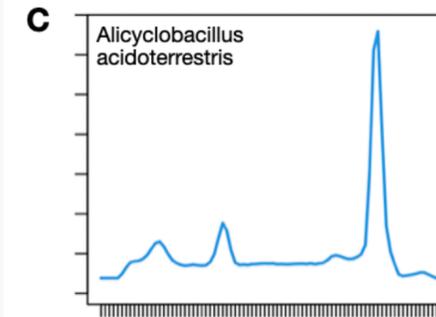
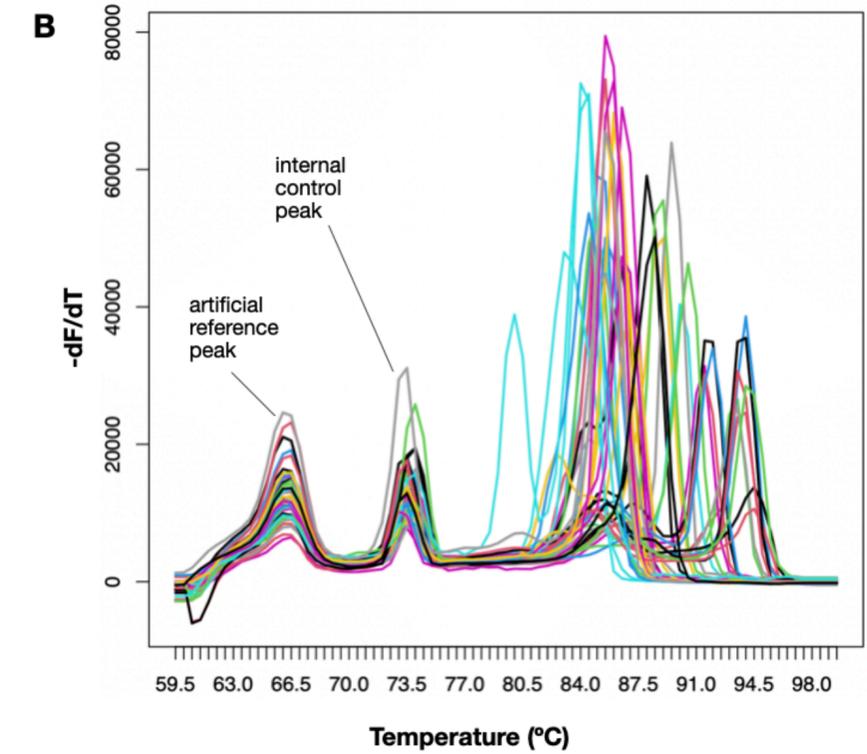
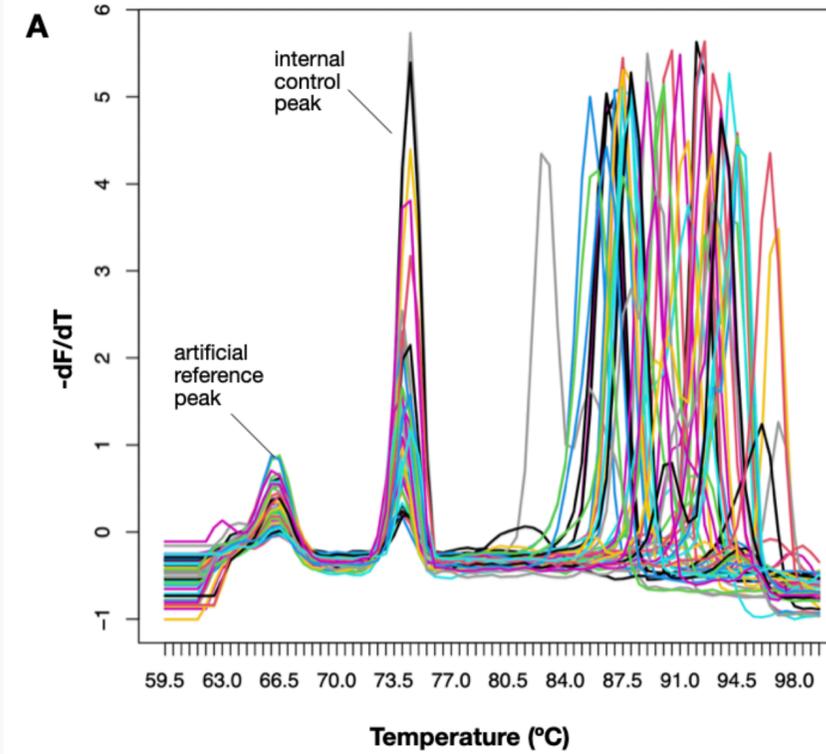
Avoid spoilage of products by detecting and identifying over 50 bacteria in less than 28 hours and over 50 yeast and molds in less than 52 hours. It's simple!, you only need one thermoblock, one PCR equipment, one laptop and our SteriPLEX kits to turn your traditional laboratory into an advanced molecular microbiology laboratory.





An ever learning and always growing system to maximize food quality

You will always be up-to-date about the potential spoilage microorganisms. TAAG SP is continuously updated since we are constantly isolating or acquiring new spoilage microorganisms.





Automatic results interpretation and publication

Once the PCR is finished, the interpretation and publishing of results is done automatically by the TxA software.

Analyze your PCR results

Upload your PCR raw file for an automatic interpretation of results

1 Set up your analysis

Select your PCR test ▼

Select your PCR equipment ▼

Upload your PCR file 📁

2 Set up your samples

Enter samples manually

Analyze a work order

ⓘ Actions ▼

Run ID

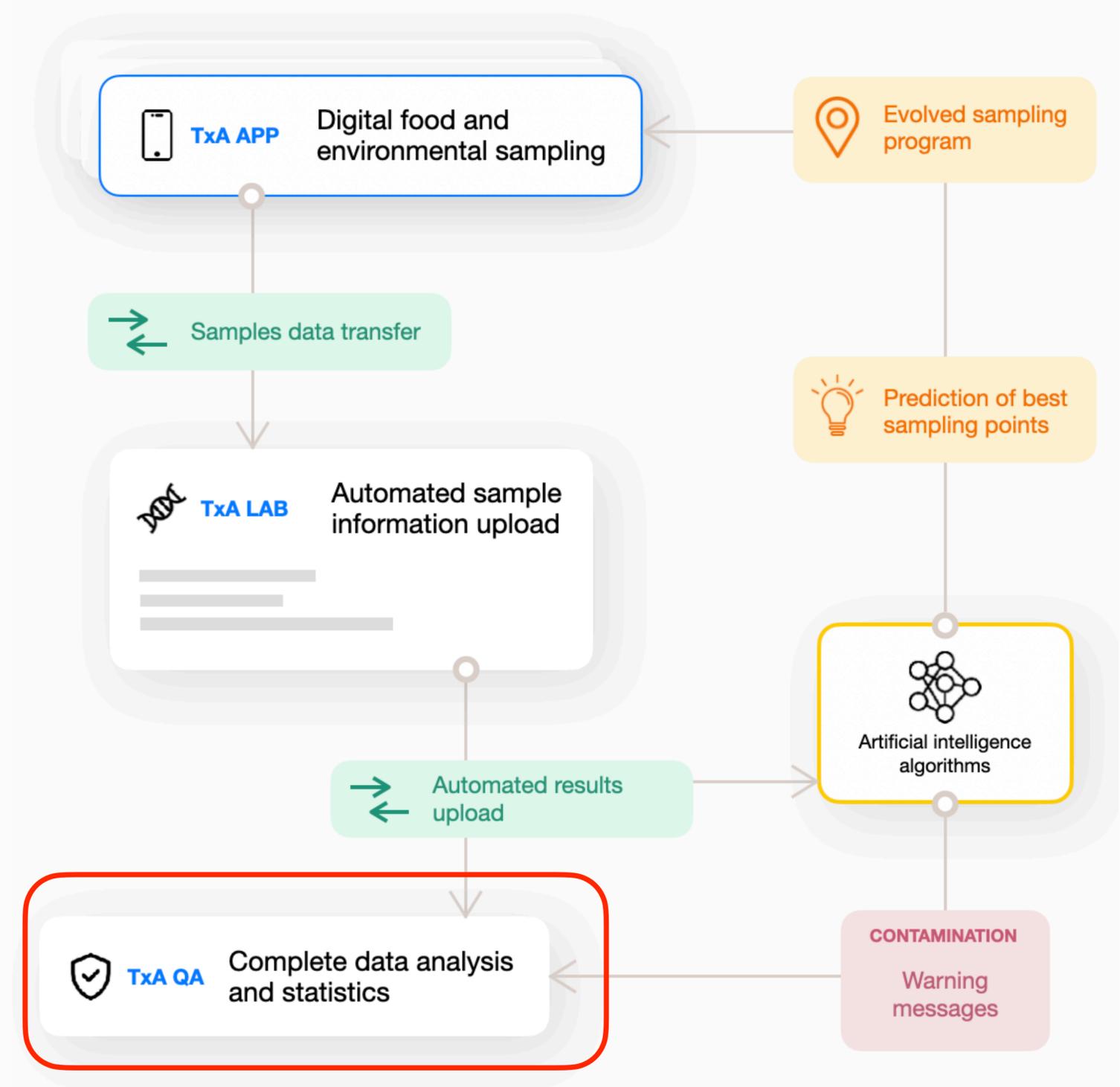
Well	Description	Matrix	Category	Sample status
<input checked="" type="checkbox"/> A1	<input type="text" value="Enter code"/>	<input type="text" value="Select matrix"/> ▼	<input type="text" value="Select category"/> ▼	<input type="text" value="Select status"/> ▼
<input type="checkbox"/> B1	<input type="text" value="Enter code"/>	<input type="text" value="Select matrix"/> ▼	<input type="text" value="Select category"/> ▼	<input type="text" value="Select status"/> ▼
<input type="checkbox"/> C1	<input type="text" value="Enter code"/>	<input type="text" value="Select matrix"/> ▼	<input type="text" value="Select category"/> ▼	<input type="text" value="Select status"/> ▼
<input type="checkbox"/> D1	<input type="text" value="Enter code"/>	<input type="text" value="Select matrix"/> ▼	<input type="text" value="Select category"/> ▼	<input type="text" value="Select status"/> ▼
<input type="checkbox"/> E1	<input type="text" value="Enter code"/>	<input type="text" value="Select matrix"/> ▼	<input type="text" value="Select category"/> ▼	<input type="text" value="Select status"/> ▼
<input type="checkbox"/> F1	<input type="text" value="Enter code"/>	<input type="text" value="Select matrix"/> ▼	<input type="text" value="Select category"/> ▼	<input type="text" value="Select status"/> ▼
<input type="checkbox"/> G1	<input type="text" value="Enter code"/>	<input type="text" value="Select matrix"/> ▼	<input type="text" value="Select category"/> ▼	<input type="text" value="Select status"/> ▼
<input type="checkbox"/> H1	<input type="text" value="Enter code"/>	<input type="text" value="Select matrix"/> ▼	<input type="text" value="Select category"/> ▼	<input type="text" value="Select status"/> ▼

Analyze Results



Say hello to your new microbiology expert!

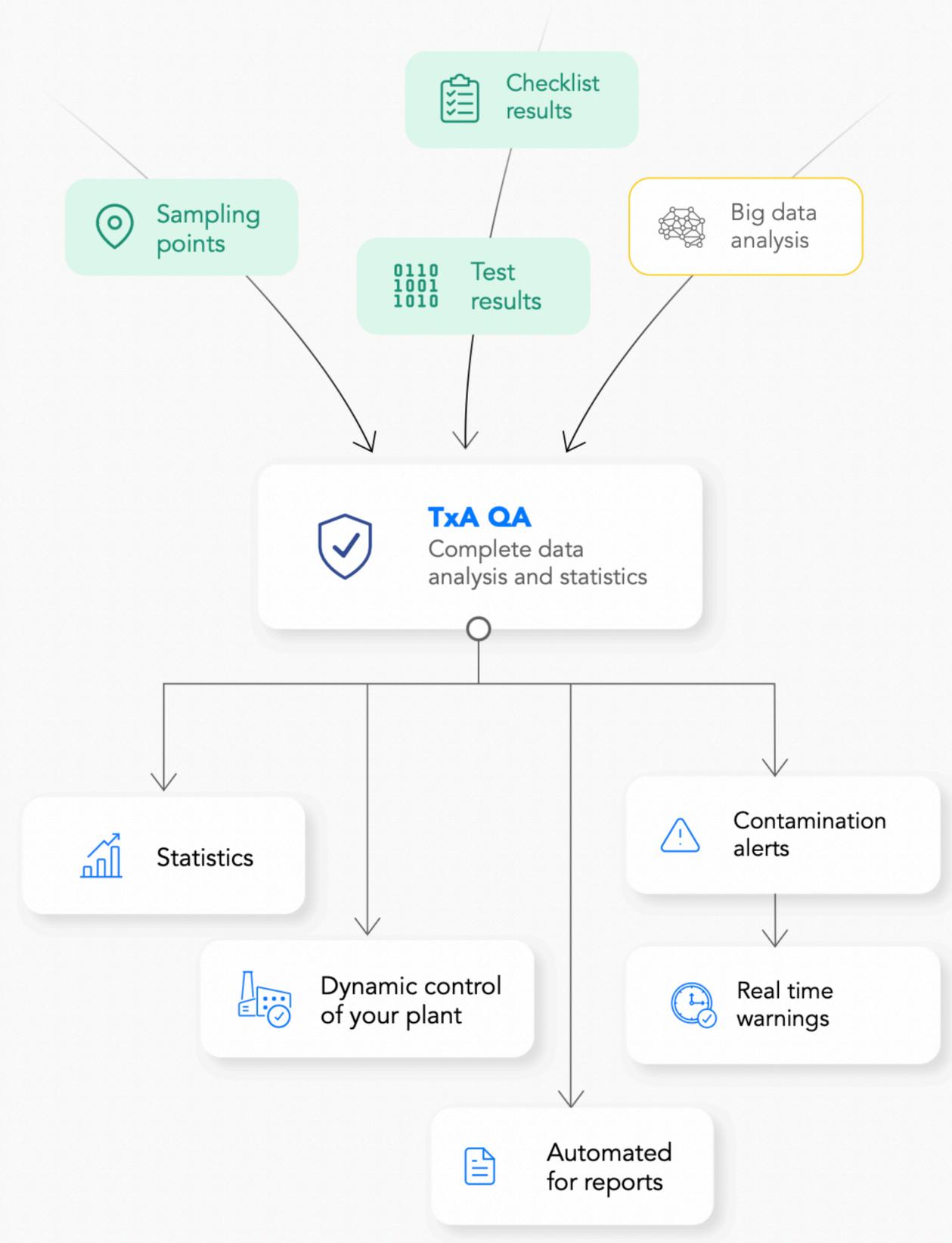
 Next slides will be about this platform





In-depth analysis to maximize food quality and safety

This platform is all about microbiological food safety management. Here you can easily analyze your laboratory results, statistics, warnings, smart and dynamic corrective action proposals, and much more.





SOFTWARE

A new and better way of "seeing" microbiology

You will see all relevant information about your environmental monitoring plan on your food plant layout in a comprehensive and intuitive way.

The screenshot displays the TAAG Genetics software interface. At the top, the browser address bar shows 'https://taag-genetics.com/'. The main area features a food plant layout with various sampling points. A detailed popup window is open for a 'Cutting Table' in 'ZONE 1'. The popup contains the following information:

- Sample ID:** 2223
- WO:** 13131
- Date:** 05-12-21
- Sampling Code:** 0303456
- Last Sampling Date:** 05-12-21
- Last Result Date:** 06-12-21
- Zone:** Zone 1
- Location:** Anthony's Market St. Charles
- Area:** Bakery Process
- Condition:** Pre-sanitization
- Risk Level:** Difficult access point, corners and joints

Below the popup, a table shows the 'Last positive result':

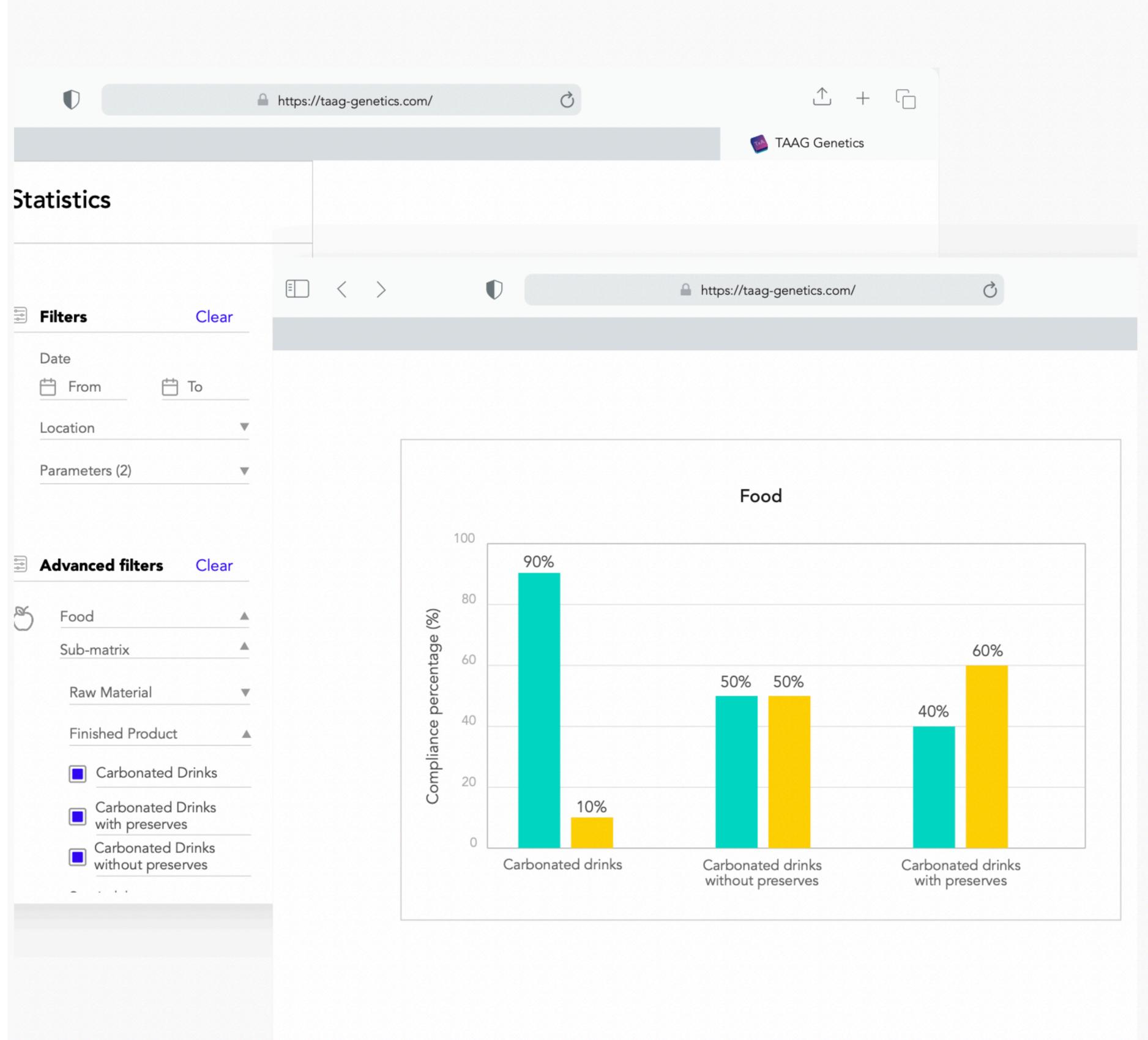
Date	Assay	Result
06-12-21	TAAG F41 VIP	<i>L. monocytogenes</i>

At the bottom of the popup, 'More samples collected at this point' are listed: Fermentation Chamber, Bread Cart, and Refrigerate.



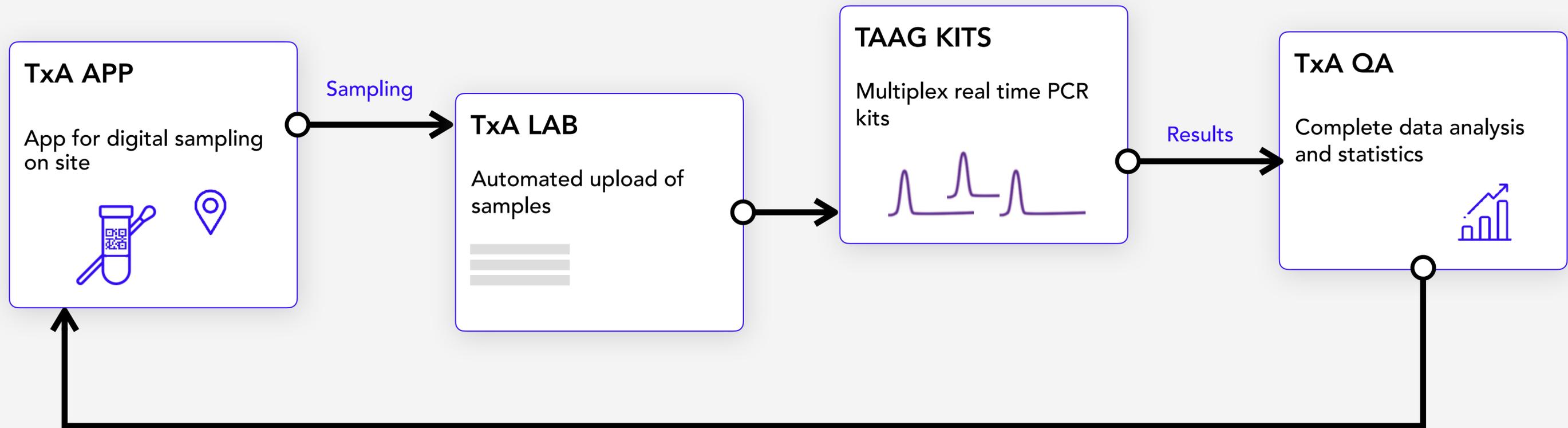
Real-time statistics of the microbiological status of your plant

You will be able to visualize all your microbiological data in an easy way, so you can decide your next goals, or the best way to tackle any contamination problem that may be deviating your results.



All connected for easy and efficient operation.

Designed to work seamlessly across all food safety lifecycle so you can be confident of delivering safe and quality products.



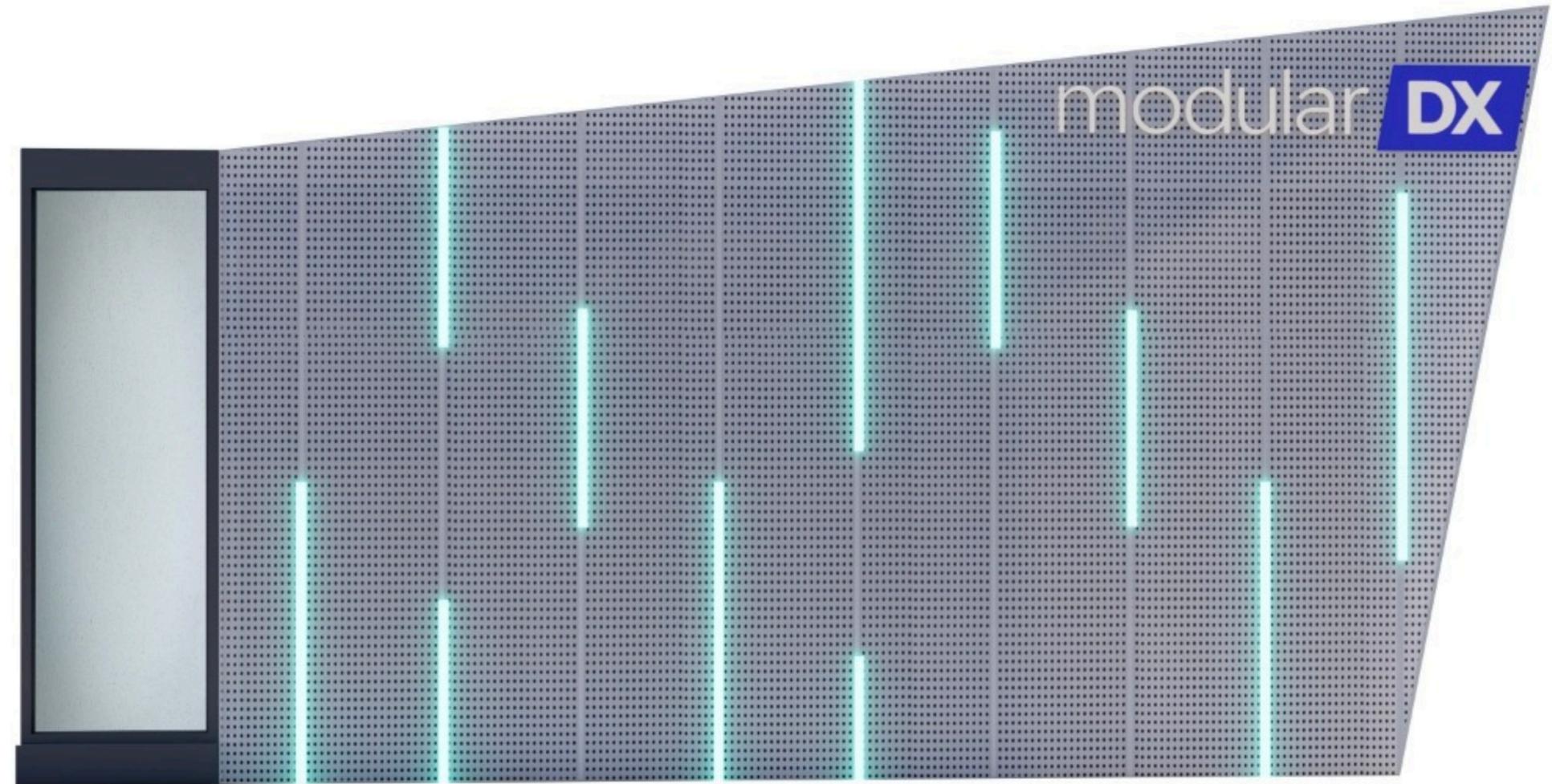
Big data analysis for looking for patterns and Ai to predict best next sampling points

TAAG technology implementation



modularDX laboratory

You will be able to visualize all your microbiological data in an easy way, so you can decide your next goals, or the best way to tackle any contamination problem that may be deviating your results.



TAAG Genetics

modularDX laboratory

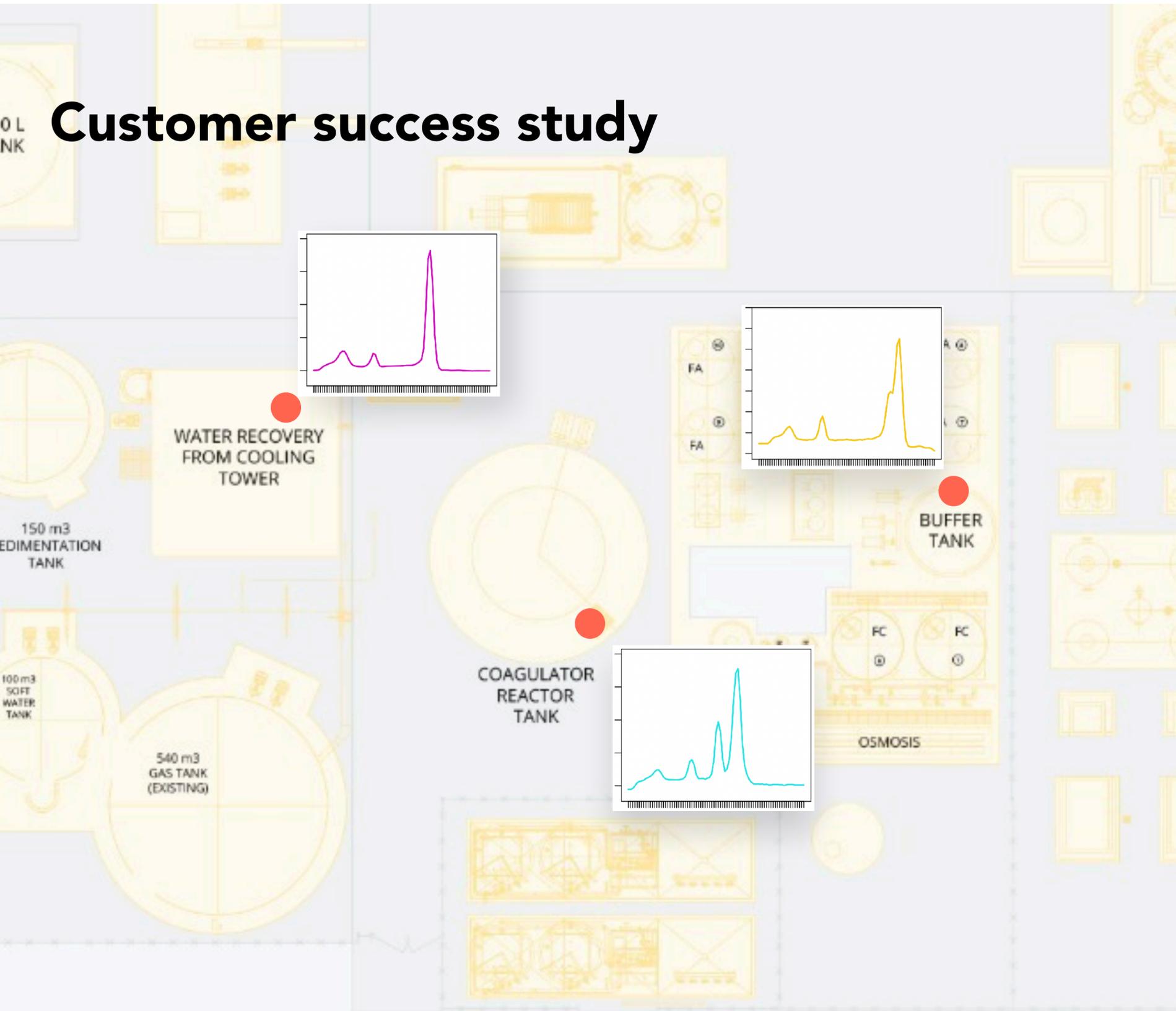


TAAG Genetics

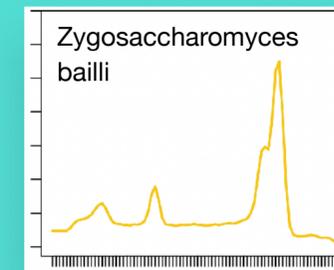
modularDX laboratory



Customer success study



How a Fortune 100 company solved spoilage problem using TAAG solution



Thanks!