

Matrix Gemini LIMS for Food & Beverage Labs



Today's food and beverage market faces increased scrutiny regarding ingredients, labeling, food safety, and quality control.....

Ensuring Food Safety

Legislation such as the U.S. Food Safety Modernization Act (FSMA) has forced food producers to conduct hazard analysis and implement preventative controls to ensure food quality. A laboratory information management system (LIMS) is critical to manage the records of sampling and test results.

Each food and beverage laboratory has its own unique processes and requirements. Matrix Gemini LIMS provides great flexibility to meet these unique needs. Not only does it support strong functionality for many different types of analysis and quality control, it also offers flexible searching, trending, and reporting capabilities. Autoscribe Informatics Matrix Gemini LIMS provides a tailor-made information management system that can adjust to changing needs without the risks and delays involved in custom-programming a system.

Key Features:

- Configurability – every food production environment is different
- Multiple ways of setting limits, particularly rule-based (customer specific)
- Invoicing enables billing to 3rd parties
- Full traceability ensures a complete product audit trail and of system/test changes
- Stability Study capability prompts 'pull' tests when needed
- Aids compliance with FDA regulations, GMP, GLP, ISO 17025

Sample Login

Because any information system can only be as good as the information stored within it, Matrix Gemini LIMS supports a variety of ways to ensure that samples registered to the LIMS contain the data needed to properly manage, analyze, and report them. Samples can be uploaded from external sources, scheduled according to a pre-defined template, registered with a spreadsheet style interface, or on a one-by-one basis.

For each type of workflow, required fields can be defined and data types set to capture the information needed. Registration screens can be made to look like associated paper forms, simplifying data entry and reducing errors. Each sample and sub-sample is uniquely identified according to the protocols established by the system administrator.

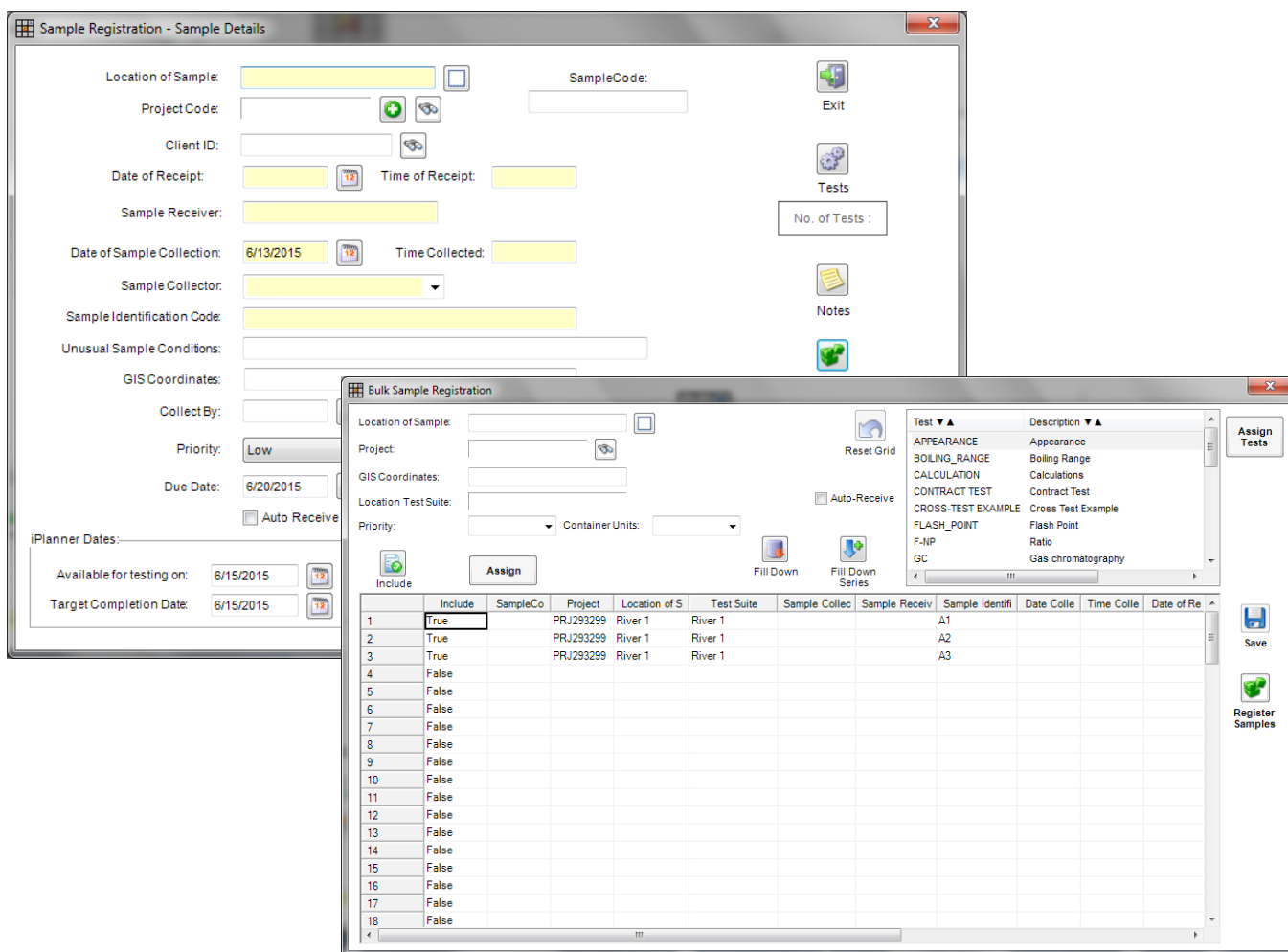


Fig 1 & 2: Example individual and bulk sample registration screens

During sample registration the test methods to be performed can be automatically assigned to the sample. This is typically based on the sample type or perhaps the sample matrix. Each sample can have many different types of notes used for recording details about sample collection, sample receipt, preparation, etc. Additionally, at the time of sample login,

labels can be printed with barcodes (1D or 2D) and files can be imported and stored in the LIMS to be associated with the logged in sample. This can include data such as photographs, copies of documents, etc.

Testing

Food and beverage Laboratories ensure products are safe to consume. They perform a wide range of quality control tests for microbiology, chemical analysis, visual appearance and nutritional value.

Test results may be manually entered, either per individual sample or for multiple samples simultaneously via a multi-

sample results entry screen. Alternatively test instruments can be hooked up to automatically populate Matrix Gemini LIMS test results screens.

Once entered the test results may be validated and approved by appropriately authorized personnel.

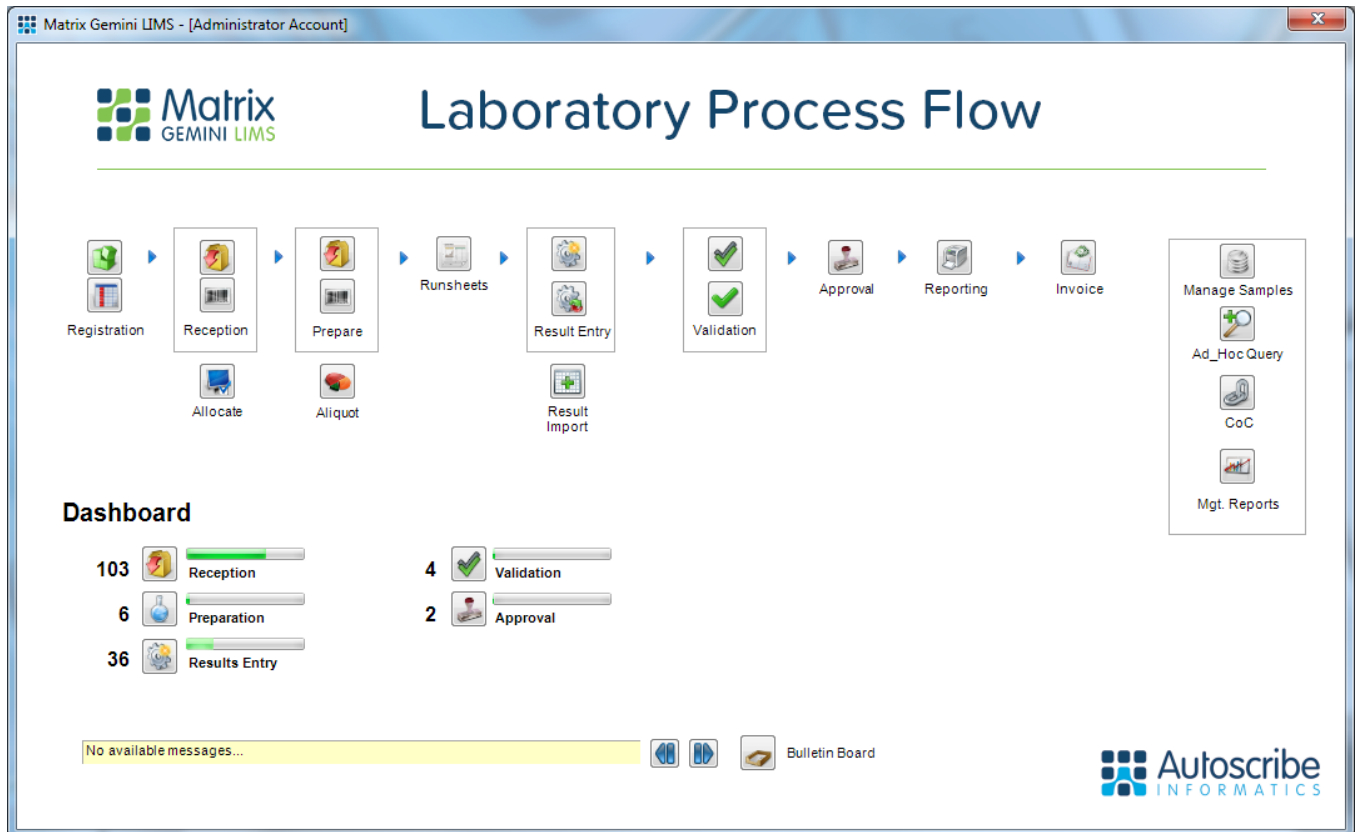


Fig 2: Example Laboratory Work Flow for the Food & Beverage Industry

System Interfaces

One common requirement for food and beverage laboratories is the need to interface with various external systems, such as Enterprise Resource Planning and Shipping. Matrix Gemini's open, yet secure architecture makes it possible to design robust one or two-way interfaces between the LIMS and other systems. Tables/views of data in external systems can be made available within Matrix for association with samples without the need to manage the data in more than one system. The Matrix API can select, parse, and import desired

records into the LIMS. And using Crystal Reports, Matrix is able to generate export files of many types for analysis and review in different systems.

Matrix Gemini LIMS has powerful and very easy to use Configuration Tools which have always been at the heart of the Matrix success story. Usable by non-programmers, these unique tools enable changes to work flows and screens to suit each individual food and beverage laboratory.

Quality Control

Laboratories in the food and beverage sector often have multiple specifications to manage for different customers and products. Matrix Gemini LIMS provides the ability to manage such specifications and product limits and to set triggers to direct what actions should be taken in the event that test results did not meet a given specification.

Matrix supports many different kinds of QC samples and tests: Duplicates, Replicates, Spikes, Spike Duplicates, Controls, Control Duplicates. When grouping samples for analysis,

the selected QC tests can be placed within the run at the desired locations. Results from these QC tests can be used for calculating final results on samples, such as correcting for recovery and relative percent difference.

Matrix includes capabilities for control and trend charts, with automatically calculated values for Standard Deviation and flags for data points which signal the need for further investigation into the quality of the results.

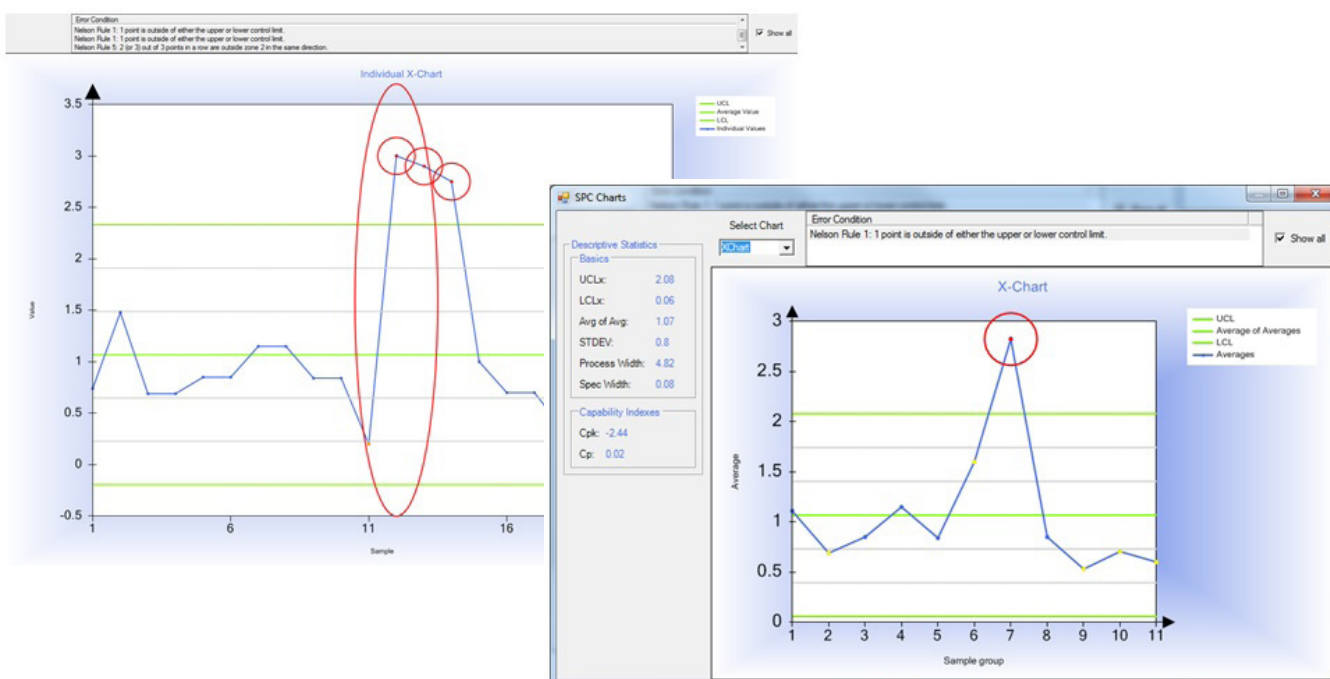


Fig 3 & 4: Examples of Statistical Process Control Charts

Reporting options

While a LIMS is primarily designed to support the laboratory's accurate and efficient processing of samples, its capabilities to support the information needs of the rest of the business are just as critical to the organization's overall success.

Matrix Gemini LIMS includes significant on-screen capabilities for charting and dashboards as tools for management that quickly provide the status and number of samples in the

laboratory, turn around time, and other key performance indicators.

Management reports provide status updates and ensure smooth running of the lab while test certificates may be created and emailed to customers on completion and approval of sample testing.

Unique Matrix Configuration Tools

Autoscribe Informatics unique Matrix Configuration Tools guarantee a truly flexible LIMS. They ensure that every LIMS we implement matches the customer's specific requirements, at a fraction of the cost of our competitors.

The built-in Matrix Configuration Tools allow the setup and modification of work flows and screens without the need for programming or esoteric scripting languages, as used in other LIMS solutions. It's perfect for today's fast-paced, ever changing world. Please see our website or ask for further details.

About Autoscribe Informatics

Autoscribe Informatics offers industry leading configurable future-proof database management applications. Solutions include Laboratory Information Management Systems (LIMS) and Quality Management Systems that are configured to match user requirements.

Autoscribe has offices in the UK and USA, with distributors around the world.

Our worldwide team of LIMS, scientific and business software professionals are passionate about delivering solutions that meet the evolving needs of our customers. We leverage our highly configurable solutions and our 30+ years of experience to help our customers automate their processes to work more efficiently, provide real cost savings and meet regulatory compliance needs.

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