AGROSAVIA boosts the agricultural sector by creating efficient crops with SampleManager LIMS software in Colombia

AGROSAVIA (Colombian Corporation for Agricultural Research) is a public organization that works independently from the Colombian government, using research to drive scientific knowledge and development of agricultural technology in Colombia. Its mission is to contribute to technical change and improve productivity and competitiveness of the Colombian agricultural sector. This network of laboratories has one of the most comprehensive modern infrastructures in the country with several locations throughout Bogota.

Recently, AGROSAVIA teamed up with the government of Colombia through the agency Ministry of Information Technologies and Communications (Ministerio de Tecnologías de la Información y Comunicaciones) and began an initiative to optimize the soil analysis process. This initiative would give farmers scientific information that could greatly impact their production and drive industry development and growth. The project provides farmers with data-driven recommendations for crop fertilization before the planting season. To execute this ambitious project, AGROSAVIA implemented Thermo Scientific™ SampleManager LIMS™ software to managing their network of laboratories, centralize the soil data and make it accessible to the farming community.

The LIMS leading the automation of the soil analysis process

To ensure the project moved as quickly as possible, the AGROSAVIA team chose to implement SampleManager LIMS software in the main laboratory in Tibaitata, municipality of Mosquera. These laboratories are part of the larger laboratory network and the long-term plan is to deploy the system to all of the laboratories that will eventually implement it.
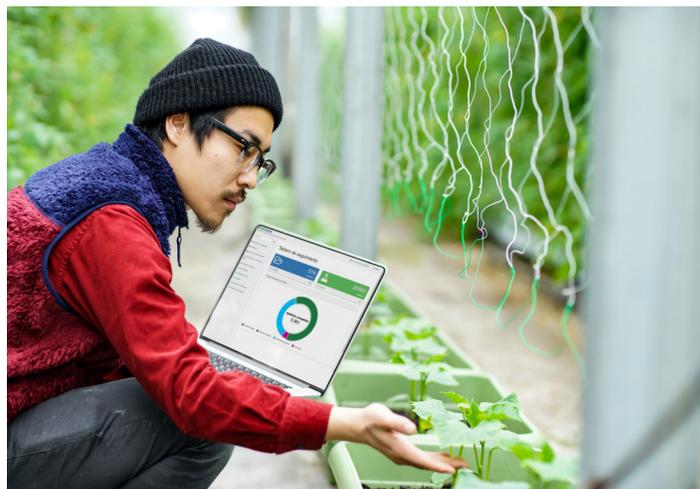
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AGROSAVIA was manually processing approximately 15,000 samples a year, requiring extensive review time and oversight. Before the LIMS, the laboratory process would take up to 8 hours a week using Microsoft® Excel, going through each step with a designated analyst capturing the data. By implementing SampleManager LIMS software, the productivity in the lab improved significantly. It allowed one person assigned to the analysis to log into the system, download the project and run the analysis. Processing time was reduced from hours to minutes, enabling better use of resources by streamlining the lab process and workflows. The LIMS automates data processing significantly decreasing the time spent in monitoring the integrity of the samples and ensuring the accuracy of results.

SampleManager LIMS software also provides data traceability and automation. The instruments in the laboratory are integrated with the LIMS, enabling automatic data transfer and eliminating paper documentation and the use of Excel to record information.

One of the reasons AGROSAVIA chose SampleManager LIMS software was its flexibility. They wanted to have one single solution to connect not only the instruments in the lab but all the labs across the enterprise. "AGROSAVIA was looking for a single solution from a company they could trust that could cover all our laboratories each with their own specialized testing," said Rafael Pedraza, Soil Lab Manager and LIMS project lead.
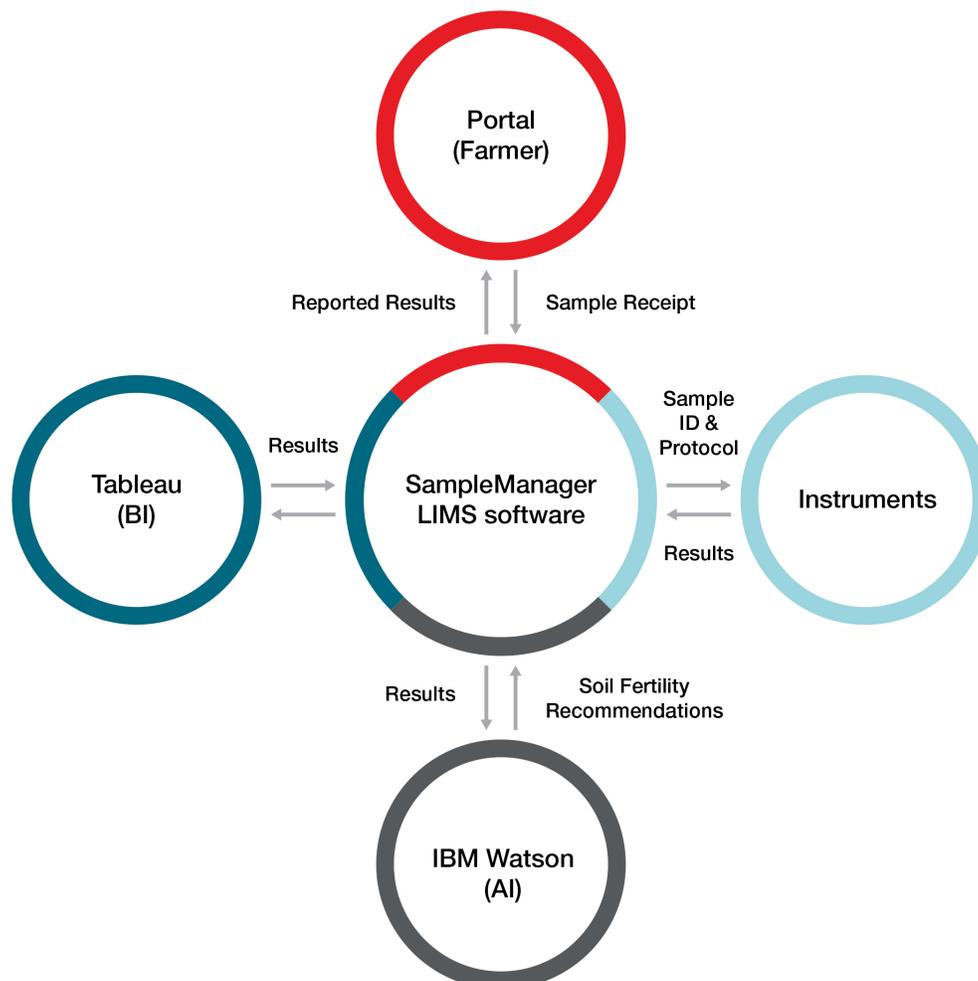
Portal
(Farmer)

Reported Results   Sample Receipt

Tableau
(BI)

Results

SampleManager
LIMS software

Sample
ID &
Protocol

Instruments

Results

Results   Soil Fertility
Recommendations

IBM Watson
(AI)

thermo scientific

> "In a short time, the organization saw that this is a project that it must continue supporting if it wants to use the laboratories to their maximum potential."

– Angelica Pichicamata, Lab Director, AGROSAVIA

Data traceability and A.I. with the creation of a web portal

A critical component of the LIMS project was connecting SampleManager LIMS software with business intelligence platforms like Tableau™ and IBM Watson™ for AI. This connectivity enables the systems to share the latest data. With access to the latest data captured in SampleManager LIMS, business intelligence platform algorithms help AGROSAVIA's customers understand soil conditions and formulate appropriate plans for fertilization. To help AGROSAVIA's customers (farmers) access this data, an intuitive new portal was developed. The portal provides farmers with the data they need to successfully grow their crops.

SampleManager LIMS software already had a contract module allowing AGROSAVIA to create a quotation for the services to be performed and to send the quotation to the client for approval. Once approved, the business development area authorizes a Statement of Work (SOW) to be generated. From there, the lab is able to receive samples for the job.

The samples are received via direct delivery or through special delivery process. Once registered, farmers can track the sample through every step of the process. The system alerts them when results are available and they can download the results using the portal. This automated process gives the farmers the data they need to improve their crop fertilization improving crop production and profitability.

Implementation and training

Thermo Fisher's implementation team worked with the project managers at AGROSAVIA to help them to easily assimilate to the workflows. When the system was implemented and ready to use, the main users were already familiar with it and were able to train the rest of the personnel because they were trained throughout the implementation process. "In a short time, the organization saw that this is a project that it must continue supporting if it wants to use the laboratories to their maximum potential," said Angelica Pichicamata, Lab Director, AGROSAVIA.

AGROSAVIA has one of the largest genetics laboratories in the country and Latin America. Knowing Thermo Fisher Scientific's reputation in the region and its ability to provide solutions specifically tailored to genetics workflows, made SampleManager LIMS software an easy choice for the company.

Find out more at **thermofisher.com/digitalscience**

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