

Pioneering AgriTech Company Tropic

Implements Achiever LIMS



Tropic

INTRODUCTION

Tropic, a pioneering gene-editing company, is dedicated to developing resilient agricultural crops through advanced biotechnological solutions.

The company's primary focus has been on modifying bananas to combat devastating plant diseases such as Black Sigatoka and TR4 Fusarium Wilt, both of which threaten the future health and supply of the crop. Tropic is also preparing to launch a revolutionary gene-edited banana that resists browning for hours after peeling.

Developed using the firm's proprietary GEiGS® technology, the non-browning banana stays visually fresh and yellow for up to six hours—dramatically extending shelf life and reducing food waste across the supply chain. This innovation addresses both the cosmetic standards imposed by global retailers and the environmental burden of discarded produce.

As Tropic matures from an early-stage venture to a commercial entity, the need for a robust laboratory data management system (LIMS) became paramount. This case study explores how Tropic implemented Interactive Software's Achiever LIMS to enhance data traceability, regulatory compliance, and operational efficiency.

CHALLENGES FACED BY TROPIC

As a young start-up, Tropic initially relied on Excel® spreadsheets and other, task-specific data management practices.

As the business has grown quickly into a commercial entity, the need for data traceability has become synonymous with the company's success. Gene-edited crops must undergo rigorous testing to meet regulatory standards and ensure public safety. Detailed traceability was required to demonstrate the development journey of each plant from cell transformation to a fully developed banana plant. As an ETS-certified company, Tropic needed a system that met stringent data traceability and reporting requirements.



Tropic use gene-editing to help combat plant diseases



As Tropic neared commercialisation and the volume of data produced increased, it made spreadsheet-based management inefficient and heightened the risk of human error during input. The company required a system that allowed scalability and centralisation. Data needed to be centralised in a single system to improve accessibility and reduce duplication of effort. The company also needed a secure, structured way to document and protect its intellectual property, particularly given the innovative nature of its genetic modifications.

An earlier attempt at implementing a LIMS had failed due to the premature adoption of the system and the selection of an unsuitable provider, leading to financial and time losses. Lessons learned from this experience underscored the importance of selecting the right vendor and system to support Tropic's unique needs.

WHY TROPIC CHOSE ACHIEVER LIMS

Tropic undertook a thorough six-month evaluation process, starting with a wide range of potential LIMS providers before gradually narrowing the selection down to two finalists.

Ultimately, they chose Achiever LIMS based on several key considerations.

One of the most important factors was the flexibility and adaptability of the system. Tropic was particularly impressed by Interactive Software's (ISL's) structured approach and its ability to adapt to their unique requirements. Interactive Software have a strong market presence in sectors including biobanking and clinical research which are heavily regulated, hence the team had a particular understanding of the challenges facing Tropic and its work in gene editing. Achiever LIMS provided a structured yet straightforward framework that was well-suited to the regulated nature of Tropic's work. The system's user-friendly interface and structured data management capabilities made it an ideal choice, particularly as the company transitioned from Excel®-based processes.

Another crucial element in the decision was Interactive Software's strong vendor partnership approach. In selecting the right vendor, Tropic prioritised collaboration and engagement. The team at ISL demonstrated a clear commitment to working closely with them, ensuring that the system could be tailored to suit their specific workflows and data management needs.

Finally, Tropic opted for a cloud-based solution through a Software-as-a-Service (SaaS) model. This allowed them to share the scalability challenge with ISL rather than investing in their own physical infrastructure. The decision not only ensured cost savings but also provided the flexibility needed for future growth and expansion.

IMPLEMENTATION PROCESS

The implementation process of Achiever LIMS at Tropic is being carried out in multiple phases, beginning with planning and selection. The contract negotiation phase ensured that both parties were aligned on expectation. Discussions and preparations for implementation started early in the development process to ensure that the project began quickly and without hinderance.

The next phase involved data migration and system deployment. One of the biggest challenges was cleansing and structuring the data to ensure accuracy and integrity before migrating it into Achiever LIMS. Through this process, Tropic identified several data inconsistencies and errors, highlighting the necessity of a centralised system. The deployment was carried out in stages, allowing for a structured and gradual transition.

Training and user adoption were critical to the success of the implementation. Initial training sessions focused on key users, who then shared their knowledge with their respective teams. In addition, technical training was provided to system administrators, enabling Tropic to manage the system internally.

The flexibility of Achiever LIMS allowed the team to quickly adapt and take full ownership of the system, ensuring a smooth transition and effective long-term use.



BENEFITS AND IMPACT

Within two months of going live, Tropic observed significant data management improvements:

- **Enhanced data integrity and traceability:** Manual data entry errors were reduced, improving the accuracy of critical research and regulatory data. Researchers can now trace plant development seamlessly from cell transformation to final product.
- **Operational efficiency and time savings:** Data input time was reduced by at least 50%, freeing up lab technicians to focus on scientific work rather than administrative tasks. Real-time data entry using iPads and tablets streamlined workflows.
- **Regulatory compliance confidence:** The structured data system provided Tropic with confidence in meeting regulatory requirements for product approval. Secure data management also supported intellectual property protection.
- **Improved decision-making and data access:** Previous Excel® files were consolidated, enabling quick search and retrieval of relevant data. In addition, the management had greater visibility into research and development progress, aiding strategic planning.



Tropic

“The collaboration between Tropic and Interactive Software has raised the bar for supplier excellence. From the outset, Interactive Software demonstrated a deep understanding of our scientific and operational requirements, delivering a Laboratory Information Management System that is robust, adaptable and scalable. Their professionalism, responsiveness, and commitment to co-creation enabled a seamless implementation that has significantly enhanced our data integrity, regulatory compliance, and research efficiency. This partnership has laid a strong foundation for continued innovation and growth.”

Dan Fox, VP Product Development, Tropic.

LOOKING TO THE FUTURE

With the successful implementation of Phase 1, Tropic is now looking ahead to further expanding and enhancing its use of Achiever LIMS. The next step, Phase 2, involves extending Achiever LIMS to the rice development pipeline. This expansion includes plans for a go-live date in March 2025 and the integration of genotyping data to streamline research and development processes.

Beyond this, future phases will focus on incorporating additional research functions. One key initiative is the integration of pathology data into the system, enabling more comprehensive product assessments. Tropic is also exploring the potential of using LIMS for discovery work, including the identification of new genes and transformation mechanisms.

Contact us to schedule a demo and see how we can help your laboratory thrive.



T: 0121 380 1010 E: enquiries@achieverlims.com

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