

Department of
Agriculture and Food
Laboratories



CUSTOMER CASE STUDY:

The Irish Department of Agriculture Gains Improved Efficiencies and Strategic Information Management with Thermo Scientific Nautilus LIMS™

The agrifood sector remains one of Ireland's most important indigenous industries, accounting directly for over 8% of both GDP and employment, and exports of over €8.1 billion. The dispersed spread and composition of the agriculture sector, along with its use of local raw material and services, ensures that it continues to play an integral part in the viability of rural areas and the national economy. The Veterinary Laboratory Services that support the Irish Department of Agriculture are geographically spread throughout the country and as such, require timely and accurate flow of information and research results across all locations to fulfill the directives of the Department.

Profile

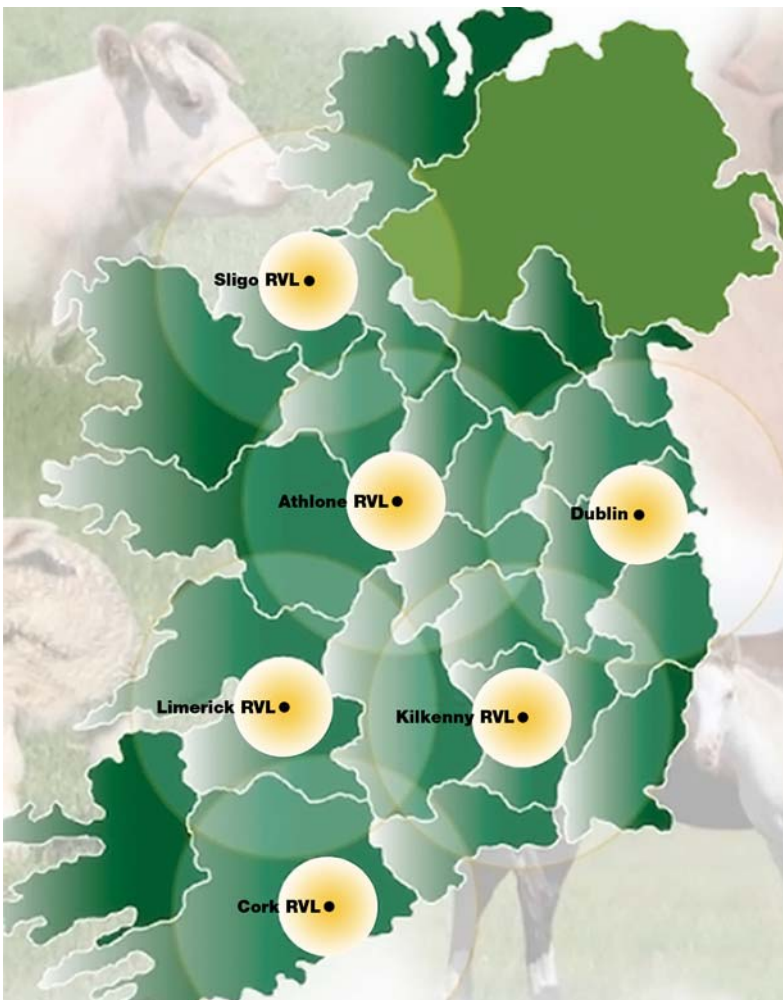
The Irish Department of Agriculture, Fisheries and Food, Veterinary Laboratory Service (VLS) comprises the Central Veterinary Research Laboratory (CVRL) and the Meat Control Laboratory at Backweston in Kildare; The Brucellosis Laboratory in Cork and six stand-alone multidisciplinary Regional Veterinary Laboratories located in Athlone, Cork, Dublin, Kilkenny, Limerick and Sligo. The objectives of the VLS are to implement the Department's policy with respect to animal health, welfare and veterinary public health through the following activities:

- providing the state veterinary service with technical support and diagnostic capability with respect to statutory and regulatory animal disease eradication and control programs
- providing an efficient laboratory diagnostic service to the livestock industry through practicing veterinary surgeons
- monitoring and collating information on diseases at the national level
- identifying diseases with zoonotic implications and collaborating with public health specialists and the Food Safety Authority
- initiating and carrying out research and development programs

Requirements

The Department of Agriculture and Food selected Thermo Scientific Nautilus LIMS™ for its laboratory services, covering pathology, histopathology, biochemistry, virology (general and poultry), bacteriology, mycobacteriology and parasitology in 2000. The business requirements identified for the LIMS were:

1. to improve the quality of information
2. to improve efficiency in the operations of the laboratories as a consequence of the LIMS
3. to improve communications between the departments
4. to generate epidemiology and disease surveillance information



5. to deliver more strategic information for management
6. to provide timely electronic reporting for veterinary practitioners, farmers, statutory agencies and the Department of Agriculture, Fisheries and Food

An additional requirement for the new LIMS was that it be a single installation supporting a number of geographically and functionally disparate sections in the VLS, which could provide consolidated data, and consistency in format for reporting and research.

Solution

Thermo Scientific Nautilus LIMS was selected for its ease of use and because it could be easily configured and managed by the laboratory staff, without the need for specialist training or additional work provided by either the vendor or VLS IT personnel. The Nautilus LIMS solution provided the Department of Agriculture and Food's Central Veterinary Laboratory Services with a full laboratory data recording, management, retrieval, and reporting system.

Nautilus LIMS is hosted on a central server located in Dublin and accessed by all of the laboratories through Citrix. It supports 98 concurrent users and is integrated to a wide variety of instruments, SAP and an Animal Health Tracking system. The instruments include: Plate Readers, Spectrometers, Clinical Instruments, Haematology Analyzers, Image Analyzers and Gene Sequencers.

The first phase of the project covered eight laboratories in the CVRL and one regional laboratory. A second phase realized a rollout of the system to the remaining four regional laboratories.

The LIMS was designed through intensive workshops that focused on sample login, test assignment, result entry, approval and reporting. Instrument integration was done as a parallel systems task.

Recently, the installed Nautilus LIMS at the Department of Agriculture has been extended to cover a number of new animal disease surveillance programs under national and EU guidelines. These include Bovine Tuberculosis, Sheep Scrapie, Wild Birds Epidemiology and Class A Animal Diseases.

Benefits

Since its implementation, the Nautilus LIMS has operated efficiently and has proven a significant benefit to the Department of Agriculture. At sample intake, the LIMS has improved the efficiency and security of data entry and has greatly assisted sample identification and tracking by printed and automated label generation. As all laboratory data is now recorded on a single electronic database, the LIMS has provided the Laboratory Services with a means to retrieve, analyze and report data in a way that would never have been possible with the previous paper-based system.

Another key benefit of the system that meets one of the initial requirements of the Department of Agriculture is the electronic transfer of results to third parties and the fact that the LIMS provides a database for national animal disease surveillance.

Pathogenic agents detected in samples submitted to the six RVLs for calf enteritis tests in 2006.

	Number tested	Number positive	Percent positive
Rotavirus	2969	768	25.9 %
Cryptosporidium	2973	771	25.9 %
Coronavirus	2941	74	2.5 %
Escherichia coli K99	2241	27	1.2 %
Salmonella species	2983	109	3.7 %

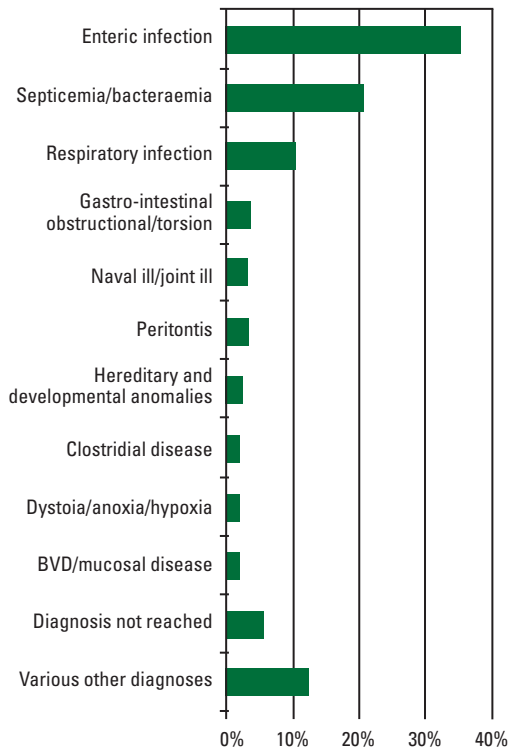
Probably the greatest benefit arising from the LIMS has been the large reduction in the amount of information transcription in individual laboratories, the sharing of information between sections and the traceability of samples this has provided. Nautilus LIMS has made a great impact on standardizing the information recorded. This has facilitated both section specific and system wide searches for information, streamlined sample login procedures and facilitated cross training because the system is very similar between laboratories. The LIMS has also been integrated with SAP, removing a large burden from the laboratory and administration staff in generating monthly invoices.



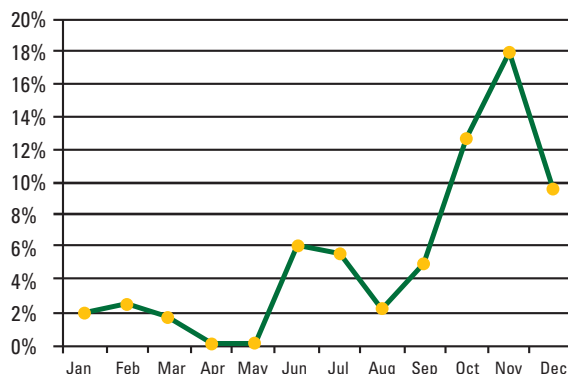
The specific benefits of Thermo Scientific Nautilus LIMS to the Department of Agriculture VLS are:

1. A very large reduction in the amount of information transcription in individual laboratories and associated paperwork. It is estimated at an 80% reduction.
2. Sharing of information between sections and the tracking of samples/tests both internally and those sent between sections.

3. Easy generation of reports by end-users.
4. Standardization of information recorded has enabled querying of the database of national trends and characteristics in animal diseases – these are published annually. On a monthly basis, recent findings in each of the RVL's is consolidated in a single report that may be downloaded from the Departments website.
5. Integration of Nautilus to AHCS, the animal health tracking system, has been essential to the national surveillance program associated with TB test.
6. Integration of Nautilus to SAP has automated and centralised monthly invoicing of tests to practitioners, a previously cumbersome and time-consuming task which involved admin input from each of the sections.



Most commonly diagnosed causes of mortality in calves from birth to one month of age (n=764).



Salmonella Dublin positive abortion cases as a percentage of all abortion cases submitted for each month.



Partnering with Thermo Fisher Scientific

Thermo Fisher Scientific is the worldwide leader in laboratory software and related services, providing enterprise-wide, multi-laboratory solutions that are relied on at 18 out of the top 20 global pharmaceutical companies. To support our Thermo Scientific informatics installations, we provide implementation, validation, training, maintenance and support from the industry's largest worldwide informatics services network.

Nautilus LIMS for drug discovery and R&D is part of our comprehensive portfolio of Thermo Scientific software solutions for the pharmaceutical industry, including Galileo LIMS™, for *in vitro* ADME studies in early stage drug discovery and development; Watson LIMS™, the industry leader in bioanalytical laboratories; Darwin LIMS™ for pharmaceutical manufacturing R&D and QA/QC; and Atlas CDS™, a chromatography data system that integrates seamlessly with Thermo Scientific LIMS.

Thermo Scientific Informatics is committed to providing our customers with the best in product and services.

Through our Global Partner Alliance, and partnership with companies like Orbis Information Systems in Ireland, we deliver award winning best-in-class informatics solutions to laboratories around the world.



Orbis Information Systems (www.orbis-is.com) is a solutions specialist for laboratory informatics and manufacturing. Orbis

works exclusively with Thermo Scientific LIMS products in Ireland and its services include LIMS justification and cost benefit analysis, design, implementation and support. Orbis also provides LIMS integration solutions for instrumentation, CDS, business and manufacturing systems. Orbis primed the DAF VLS contract and provided the implementation with the support of Thermo Scientific.

For More Information

Visit us on the web at www.thermo.com/informatics or call +1 866 463 6522 (US) or +44 161 942 3000 (Intl).

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