



## Sample Tracking System

Supporting and developing an agrochemical product in the field generates a large volume of plant samples that must be dealt with efficiently. Fungi are a particular problem for growers and a rapid response to infection incidents is key to supporting and developing product sales.

### Business Problem

For one application new PCR analysis equipment was used to carry out high throughput screening of fungi taken from infected field samples. Using the PCR technique a picture of the genetic makeup of fungi can be monitored.



**ABI PRISM 7900 HTM**

PCR introduced a step change in the screening capacity so an automated sample tracking and data handling system was required.

### Tessella Solution

A Rapid Application Development (RAD) approach was used to specify and implement the Sample Tracking System. This meant that the users had immediate input into the user interface design. This resulted in the system being as streamlined as possible, giving the scientists more time to focus on the core problem.

Batches of leaf samples infected with fungi are received from the field in bags or barcoded vessels. Batch and sample details are entered into the system and the barcoded vessels are logged.

Samples may go through a number of intermediate processing steps before PCR analysis e.g. loading 96-well plates from a set of eppendorfs.

The system allows scientists to track the location and state of their samples through all stages of processing. Vessel barcodes are used to uniquely identify samples and sub-samples.



384-well plate PCR data is imported from the ABI PRISM 7900HT. The system checks the consistency of sample replicates and highlights anomalies. The scientist can flag and exclude erroneous or invalid results.

The complete history of any sample can be displayed in a tree hierarchy. This shows all related sub-samples, their vessel barcodes and processed states.

### Benefits

The close involvement of users during the RAD process meant that the system worked how they expected it to and no post-deployment modifications were required.

The automation provided by the system removes the possibility of errors that arise in manual data transcription. Without the high volume sample and data management provided by the system the PCR equipment would have been under utilized and far fewer field samples could have been processed.

The greatest benefit to the business is the enhanced level of support that can be given for products to protect and enhance sales.

**Tessella plc** 26 The Quadrant, Abingdon Science Park, Abingdon, Oxfordshire OX14 3YS, UK  
T: +44 (0)1235 555511 | F: +44 (0)1235 553301 | E: [info@tessella.com](mailto:info@tessella.com)

**Tessella Inc** 233 Needham Street, Suite 300, Newton, MA 02464, USA  
T: 1 617 454 1220 | F: 1 617 454 1001 | E: [info@tessella.com](mailto:info@tessella.com)

**Tessella – successfully delivering IT and consulting services to world leaders in R&D, science and engineering.**

For decades, Tessella has been successfully delivering IT and consulting services to world leaders in R&D, science, and engineering. Through the application of scientific methods and rigorous quality procedures, we enable clients in life sciences, energy, the public sector, and consumer industries to achieve a wide range of objectives, including, forecasting floods, developing fusion power, enhancing military sensor capability, increasing drug discovery and development efficiency, and reducing risk to health and the environment in the extraction and production of oil and gas. With offices in Europe and North America, global companies rely on Tessella for business critical assignments.

Copyright © Tessella plc 2009, all trademarks acknowledged.

