

18 years old and still going strong



The Justus-von-Liebig soil sampling laboratory in Bavaria has what is probably the oldest suite of Tecan instruments still in routine use – unless you can tell us otherwise! – and has been using it to test agricultural soil samples for almost twenty years.



The RSP MegaFlex has been a feature of the laboratory since 1992.

The Justus-von-Liebig soil sample laboratory in Rain am Lech, Bavaria, Germany, is part of Bodengesundheitsdienst GmbH, a subsidiary of Südzucker AG, and has been using Tecan's automation technology to aid ELISA analysis of soil samples since 1992. The system consists of an RSP MegaFlex liquid handling platform, with a linear rack and AXS software, in combination with an SLT photometer and SLT washer. "We installed the system in the soil laboratory in May 1992," remembers Ralf Rändler, a BioPharma sales manager at Tecan. "It was put into routine use immediately, and is still running reliably today." Dr Konstantin Nowikow, head of the soil sampling laboratory, added: "Although our facility is a bit dated – it is even controlled using DOS-commands – it has been running without any problems for almost twenty years."

The Tecan system was originally used for the soil analysis on Rhizomania viruses, which are responsible for widespread disease in sugar beet crops and can cause dramatic reductions in crop yield, often by more than 50%. Although Rhizomania-tolerant sugar beet varieties were available at the time, these were significantly more expensive than intolerant plants, and gave lower yields. It was therefore cost-effective to test soils for presence of the pathogen before planting, only using tolerant varieties if the results were positive for Rhizomania.

"With a throughput of around 5,000 soil samples a year, the Tecan instrument was used to process over 40,000 samples for the presence of the virus," continued Dr Nowikow. "Automation allowed us to significantly increase the productivity of our Rhizomania analysis, saving on staff time and reducing the need for laborious pipetting. The need for Rhizomania analysis ended in 2000 as high yield, Rhizomania-

tolerant plants became readily available at a cost comparable to non-tolerant varieties. However, this did not mean the end for the Tecan platform."

The system has been re-purposed to perform viral screening on behalf of the Bayerische Landesanstalt für Weinbau und Gartenbau (Bavarian Regional Office for Viticulture and Agriculture) in Veitshöchheim. "We now use the system to examine grape vine samples for viral infections using ELISA techniques, and these tests are particularly important for vine seed stocks," explained laboratory shift supervisor Alfred Rehberger.

Although the RSP set-up is still working reliably, Dr Nowikow and his team are planning on upgrading to the latest generation of Tecan liquid handling workstation, to expand the range of services the laboratory is able to offer. "We will go straight to Tecan when looking for a new automated platform, as we have always appreciated the level of service we receive. We plan to upgrade to a Freedom EVO® 100 workstation with a four-channel liquid handling arm, and this will give us the capacity to increase our services significantly."

Besides ELISA testing for viral screening, the Bodengesundheitsdienst GmbH offers a wide range of services, including PCR analyses for the detection of sugar beet nematodes and electro-ultrafiltration to determine the nutrient content of arable soils. The soil sampling laboratory currently processes around 60,000 samples each year, and upgrading to a Freedom EVO workstation will allow Dr Nowikow's team to increase this throughput dramatically.

To find out more about Tecan's Freedom EVO workstations, visit www.tecan.com/freedomevo



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