

Case Study Bulmers Cider Mill

Sugar testing for cider production QA/QC

Accurate testing of sugar content in cider for Quality Control and Quality Assurance purposes is critical to ensuring conformity and consistency of final cider product, as well as delivering significant financial savings. As specialists in chemistry analysis for a broad spectrum of analytes, HORIBA Medical has placed the first ABX Pentra 400 bench top chemistry analyser into the UK Cider industry at the Bulmers Cider Mill in Hereford. This case study discusses how this fully automated chemistry analyser is now providing routine sugar content testing at the site which is reliable, efficient and cost effective.

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Andrew Mills,
Senior Laboratory Technician,
Bulmers

Part of Scottish and Newcastle, and owned by Heineken, the Bulmers Cider Mill at Hereford routinely tests the sugar and tannin levels of its cider, apples and glucose syrups to Quality Control the end product and for the Quality Assurance of ingredients. Since the site produces a staggering 3.5 million hectolitres of cider per annum, accurate testing of sugar content is key to controlling the amount of sugar added and consequently saving tens of thousands of pounds.

The ABX Pentra 400 provides Bulmers with an optimal test repertoire of maltose, glucose, fructose, sucrose, sorbitol, as well as tannin. Their on-site analytical laboratory at Hereford processes approximately 90 samples per week using the ABX Pentra 400, with some samples requiring the complete testing profile, whilst others require specific or single tests. This compact bench top analyser is highly intuitive and can be flexibly operated as required by a number of different personnel during the week, so providing extremely simple, cost effective and rapid analysis.

The ABX Pentra 400 was installed as a direct replacement for an aging COBAS Mira chemistry analyser. "We'd always been very happy with the Mira's reliability and results produced using its spectrophotometry-based automated technology, so we sought a like for like replacement," explained Andrew Mills, Senior Laboratory Technician at Bulmers. "The ABX Pentra 400 was a natural progression since it uses the same enzymatic methodology and



The ABX Pentra 400 benchtop chemistry analyser in the Bulmers Cider Mill analytical laboratory provides user friendly sugar content testing for cider production

consumables and also provides an optimal test repertoire. In addition, since HORIBA Medical had been supporting us in our use of the Mira over the years, we knew them to be a professional and reliable company to work and consult with." Such is the flexibility of the ABX Pentra 400, Bulmers also selected the analyser for potential additions to its test repertoire in the future. "We would like to be able to run as many different analytes as possible on our new analyser and we are already looking into its use for water testing," said Andrew Mills. HPLC (High-Performance Liquid Chromatography) has been used traditionally for sugar testing in the cider industry, however, it requires extensive sample preparation and time-consuming decontamination of columns between samples. In addition, since HPLC utilises

carcinogenic organic solvents, this is far from ideal in a food and beverage production environment such as Bulmers. Consequently, the complete removal of HPLC solvents from a laboratory would address Health and Safety requirements for disposal and storage, whilst also saving on valuable laboratory space.

"The ABX Pentra 400 is a very useful tool to have in our laboratory due to its versatility and flexibility, it provides us with a user friendly automated walk-away facility, covering our complete testing profile," added Andrew Mills. "The system is very easy to use, producing consistent and precise results which are in line with known calibration standards, so ensuring that we can achieve highly reliable Quality Control and Quality Assurance data for our essential sugar testing requirements."

Analysis **Anywhere**

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