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WATER ACTIVITY ANALYSER HELPS TO ASSURE QUALITY OF TREATED SEEDS

Elsoms Seeds has purchased an AquaLab Series 4TE water activity analyser from Labcell for measuring the relative humidity of treated seeds as part of a quality assurance process. Compared with the methods being used previously, the AquaLab is faster, more accurate, cleaner, easier to use, safer for operatives and the environment, requires smaller samples and employs a non-destructive process.

Small samples of seeds are removed from batches of horticultural and agricultural seeds that have been pelleted and film-coated. These are tested in the AquaLab, which is located in the seed treatment production area. Such are the production requirements that samples are tested several times per day, and seven operatives have been trained to use the analyser. Each test takes just five minutes and gives an accurate value for water activity (also known as Equilibrated Relative Humidity, or ERH). Integral temperature equilibration means that all tests can be performed at the same temperature to eliminate a potential source of measurement error and enable readings from Elsoms' AquaLab to be compared directly with those used by customers or suppliers. Up to 10,000 data points can be stored securely on the instrument, which has a measurement range of 0.030 to 1.000 a_w , an accuracy of +/- 0.003 a_w and a repeatability of +/-0.001 a_w . For every measurement and calibration, the instrument logs the date, time and user.

Some of the methods previously used by Elsoms required a sample to be heated. While this is not a problem with all seeds, those treated with insecticides can give off vapours that are potentially hazardous and unpleasant for operatives, as well as harmful to the environment. However, the AquaLab avoids these problems completely because it uses chilled-mirror dewpoint sensing technology.

Although it was purchased primarily for quality assurance purposes, the versatile AquaLab is also being used by Elsoms for assessing and developing new seed coatings.

Elsoms looked at other instruments before purchasing an AquaLab but the defining moment was when an AquaLab was seen being used by a Dutch supplier. The speed and ease of use led Elsoms to investigate further, whereupon Labcell provided advice and a demonstration. Ms Rae Cook, the company's Seed Technology Manager, explains: "Treated seeds need to have a relative humidity of 30 per cent, otherwise they can degrade in storage. We had been using laboratory tests that took four hours, so we were very impressed when we saw the AquaLab producing results in less than five minutes. What's more, the methods we were using were not as accurate, required bigger samples - that were also destroyed during the tests - and gave off hazardous vapours when pesticide-containing treatments were heated.

"Labcell was extremely helpful when we first enquired about the AquaLab, then came on site to install it and train the operators - though it is extremely easy to use, clean and calibrate. Since then we have had no problems with the analyser whatsoever. The only comment from operatives is that they wish we had purchased an AquaLab sooner!"

Elsoms Seeds has been supplying UK farmers and growers with seeds for over 150 years and is a market leader in seed treatments. Indeed, Ms Rae Cook was on the Working Group that developed the new standard for seed coatings, that has recently been published by ESA (European Seed Association) the ESTA (European Seed Treatment Assurance) scheme. The new standard calls for the use of control points within the seed treatment process, including moisture content, so the AquaLab will help Elsoms to comply with the standard in a simple, fast, reliable and cost-effective way.

A brochure for the AquaLab Series 4TE can be downloaded from the Labcell website at www.labcell.com, telephone 01420 568150 or email mail@labcell.com for more information.

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