



Procedure for Standardisation of a DA 1650.

Introduction: What is Standardisation and why do we do it?

Standardisation of all instruments which are Full Members of the UK Grain Testing Network is a vital part of maintaining the network. Without it, individual instruments will drift away from the rest of the population and over time this will result in inaccurate results across the industry.

Prior to each harvest a set of standardisation samples is sent out to all full members of the network. Everyone receives an identical set of samples and is asked to scan them at the same time; this is to minimize any differences in scans due to sample ageing. We strongly recommend that scans are carried out after your annual service rather than before as servicing may introduce biases which standardisation should correct.

The scans are used to adjust every instrument in the network to read as closely as possible to the sub-master instrument at Sharnbrook Grain. At the same time, the sub-master results are compared with the reference analyses and the committee and Foss together decide on whether any changes to calibrations are required to ensure the best agreement between reference and NIR results.

If Foss do not receive standardisation scans from you then your instrument cannot be adjusted to bring it into line with the sub-master, it cannot have any new calibration biases applied to it to keep it in agreement with the reference and it may result in your company being listed as not being up to date on the UKGTN website. With this in mind it is in your interest to ensure that you do everything you can to make sure that the scan collection exercise is carried out effectively on your instrument.

Scanning Samples:

Each year at standardisation time you will be sent TWO sets of standardisation samples and two emails containing details of when these should be scanned, and the file names you should use. The standardisation processes for Erucic acid and Oil & Moisture are separate processes so may not occur at the same time.

One set of samples is used to standardise for Erucic acid. The other is used for Oil & Moisture and may be shared with other NIR instruments that you have in the Network for Oil and Moisture determination on OSR.

Arrange the samples in numerical and contact Sciantec immediately if any are missing or damaged so that we can send replacements in time to meet the upload deadline.

Carry out the scan collection as follows:

1. Run samples in numerical order.
2. Analyse the samples as you would any other sample but note the following :
 - a. It is very important to key in the exact sample ID written on the bag so it is clear which scans go with which samples once the data is uploaded.
 - b. **Samples should be scanned twice with the cup repacked between scans**. Use exactly the same sample ID for both scans. Obtaining duplicate scans will improve the effectiveness of the standardisation process.
3. Once scanning is complete, ensure all the bags are sealed and placed back into their box then store this in a cool, dark location in case rescanning is required in the future.

Uploading Scans:

When all samples have been run and the scans are ready for collection, you need to manually synchronise your instrument. To do this click on the care menu button, click Mosaic Synchronisation and click synchronise. The DA1650 will then start uploading scans and once completed you will receive a message saying Mosaic Synchronisation successful. If your upload is unsuccessful or fails contact Foss for support.

Follow Up:

Once the agreed scan upload date has passed, Foss provides a list to the Grain Network of all instruments which have not uploaded. We then attempt to contact users of these instruments to find out why, and to encourage and assist them to do whatever is required to get the scans to Foss.

The scans are then sent to the calibration centre for processing. At this point Foss may ask that some samples be scanned again if the scans seem unusual. The main reasons for this are usually running the samples in the wrong order, giving them the wrong file names or missing out individual samples. Again we will attempt to contact users to ask for rescans. These need to be carried out quickly if the data is to be used.

Once the data is processed, each instrument can be biased to match the results from the sub-master and any calibration biases added. New calibrations are produced approximately 4 weeks after scan upload.

Calibration Download:

You will receive an email in advance of calibration download to give you notice to connect up your instrument. You will then receive new calibrations automatically, usually overnight.

Once again, Foss provides a list to the Grain Network of all instruments which have not picked new calibrations up and we contact users to try and help remedy this.

Following calibration download all instruments should read within tolerance of the sub-master instrument. Performance of this instrument is monitored throughout harvest using new crop samples and if further bias corrections are required the calibration download procedure is repeated.

To ensure no gross errors have been introduced during standardisation and calibration download we run a 'quick check' in place of a June Ring check round to compare results before and after standardisation on the May ring check samples. This is currently only undertaken for Oil and Moisture standardisation as the last Erucic samples are from November.