

01-03: Running a network of NIRS instruments for forages and other plant materials - Quality control

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Since 1998 VDLUFA (Association of German Agricultural Research and Experimental Stations) is running a network of NIRS instruments for the analysis of forages and other plant material. 60 instruments are located in the customers laboratories and distributed mainly throughout Europe. The main changes over the last 20 years are the multitude of new instruments brands and therefore software formats.

On the other hand harmonized methodology is the main emphasis of VDLUFA, which shall be proven by traditional quality control measures in form of proficiency tests.

We will report on our strategies in networking and observations from our quality control work throughout the past years regarding the analysis of especially forage maize for plant breeding and variety trials.

A NIRS network is here defined as a group of instrument running with a uniform calibration model for prediction. Instrument differences are accounted for and corrected by spectral standardization according to Shenk [1] and repeatability file [2].

Our observations show that reproducibility of NIRS measurements from a NIRS network do compare favorably with chemical analyses [3].

References

- [1] SHENK, J., 1990: 3rd Int Conf NIRS, 649.
- [2] WESTERHAUS, M., 1990: 3rd Int Conf NIRS, 671.
- [3] TILLMANN, P., 2017: Report for VDLUFA Proficiency Test Forage Maize.