Mise en œuvre de l'accréditation Iso17025 et (organisation d'essais inter-laboratoires dans le cadre d'essais NIR)

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We are lucky !

Belgian Standard

ISO 12099:2017
EN ISO 12099:2017
NBN EN ISO 12099:2017

NBN

Animal feeding stuffs, cereals and milled cereal products - Guidelines for the application of near infrared spectrometry (ISO 12099:2017)

Valid from 25-10-2017

Replaces NBN EN ISO 12099:2010

COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG
EUROPEAN COMMITTEE FOR STANDARDIZATION

ICS: 65.120

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ASTM INTERNATIONAL
Standards Worldwide

This international standard was developed in accordance with internationally recognized principles on standardization established in the Decision on Principles for the Development of International Standards, Guides and Recommendations issued by the World Trade Organization Technical Barriers to Trade (TBT) Committee.

Designation: E1655 – 05 (Reapproved 2012)

Standard Practices for Infrared Multivariate Quantitative Analysis[1]

This standard is issued under the fixed designation E1655; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon (ε) indicates an editorial change since the last revision or reapproval.

1. Scope

1.1 These practices cover a guide for the multivariate calibration of infrared spectrometers used in determining the physical or chemical characteristics of materials. These practices are applicable to analyses conducted in the near infrared (NIR) spectral region (roughly 780 to 2500 nm) through the mid infrared (MIR) spectral region (roughly 4000 to 400 cm^{-1}).

NOTE 1—While the practices described herein deal specifically with mid- and near-infrared analysis, much of the mathematical and procedural detail contained herein is also applicable for multivariate quantitative analysis done using other forms of spectroscopy. The user is cautioned that typical and best practices for multivariate quantitative analysis using other forms of spectroscopy may differ from practices described herein for mid- and near-infrared spectroscopies.

1.2 Procedures for collecting and treating data for developing IR calibrations are outlined. Definitions, terms, and calibration techniques are described. Criteria for validating the performance of the calibration model are described.

1.3 The implementation of these practices require that the IR spectrometer has been installed in compliance with the manufacturer's specifications. In addition, it assumes that, at the times of calibration and of validation, the analyzer is operating at the conditions specified by the manufacturer.

1.4 These practices cover techniques that are routinely applied in the near and mid infrared spectral regions for quantitative analysis. The practices outlined cover the general cases for coarse solids, fine ground solids, and liquids. All techniques covered require the use of a computer for data collection and analysis.

1.5 These practices provide a questionnaire against which multivariate calibrations can be examined to determine if they conform to the requirements defined herein.

1.6 For some multivariate spectroscopic analyses, interferences and matrix effects are sufficiently small that it is possible to calibrate using mixtures that contain substantially fewer chemical components than the samples that will ultimately be analyzed. While these surrogate methods generally make use of the multivariate mathematics described herein, they do not conform to procedures described herein, specifically with respect to the handling of outliers. Surrogate methods may indicate that they make use of the mathematics described herein, but they should not claim to follow the procedures described herein.

1.7 The values stated in SI units are to be regarded as standard. No other units of measurement are included in this standard.

1.8 *This standard does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.*

2. Referenced Documents

2.1 *ASTM Standards:*[2]

D1265 Practice for Sampling Liquefied Petroleum (LP) Gases, Manual Method
D4057 Practice for Manual Sampling of Petroleum and Petroleum Products
D4177 Practice for Automatic Sampling of Petroleum and Petroleum Products
D4855 Practice for Comparing Test Methods (Withdrawn 2008)[3]
D6122 Practice for Validation of the Performance of Multivariate Online, At-Line, and Laboratory Infrared Spectrophotometer Based Analyzer Systems
D6299 Practice for Applying Statistical Quality Assurance and Control Charting Techniques to Evaluate Analytical Measurement System Performance
D6300 Practice for Determination of Precision and Bias Data for Use in Test Methods for Petroleum Products and Lubricants
E131 Terminology Relating to Molecular Spectroscopy

[1] These practices are under the jurisdiction of ASTM Committee E13 on Molecular Spectroscopy and Separation Science and are the direct responsibility of Subcommittee E13.11 on Multivariate Analysis.
Current edition approved April 1, 2012. Published May 2012. Originally approved in 1997. Last previous edition approved in 2005 as E1655 – 05. DOI: 10.1520/E1655-05R12.

[2] For referenced ASTM standards, visit the ASTM website, www.astm.org, or contact ASTM Customer Service at service@astm.org. For *Annual Book of ASTM Standards* volume information, refer to the standard's Document Summary page on the ASTM website.
[3] The last approved version of this historical standard is referenced on www.astm.org.

USP U.S. Pharmacopeial Convention
Global Expertise
Trusted Standards
Improved Health

BRIEFING

Appendix XVIII: Guidance On Developing and Validating Non-Targeted Methods For Adulteration Detection. The USP Expert Panel on Non-Targeted Methods for Milk Ingredients (an Expert Panel to the Food Ingredients Expert Committee) proposes this new Appendix to the *Food Chemicals Codex* to provide guidance that reflects current scientific thinking on how to develop and validate non-targeted analytical methods. Non-targeted testing for potential adulterants in foods and food ingredients is becoming a more common approach to identifying products and determining whether or not more specific analytical testing for adulteration might be advised.

This guidance document is one in a series of documents that USP intends to offer to provide general information and assistance to the food industry. The document is intended to assist users in supply chain management by providing information that can generally be applied to testing and authentication of raw materials with a variety of analytical techniques. This document is not overly prescriptive by design to allow for differences in parameters such as testing techniques, data analysis, and ingredient variability that we would expect to exist within the food industry.

The proposal is targeted for publication in the *Third Supplement* to *FCC 10*.

This Appendix to the *Food Chemicals Codex* is intended to elaborate guidance frameworks and tools to assist users in the development and validation of non-targeted analytical methods to counter food fraud.

Add the following:

▲APPENDIX XVIII: GUIDANCE ON DEVELOPING AND VALIDATING NON-TARGETED METHODS FOR ADULTERATION DETECTION

CONTENTS

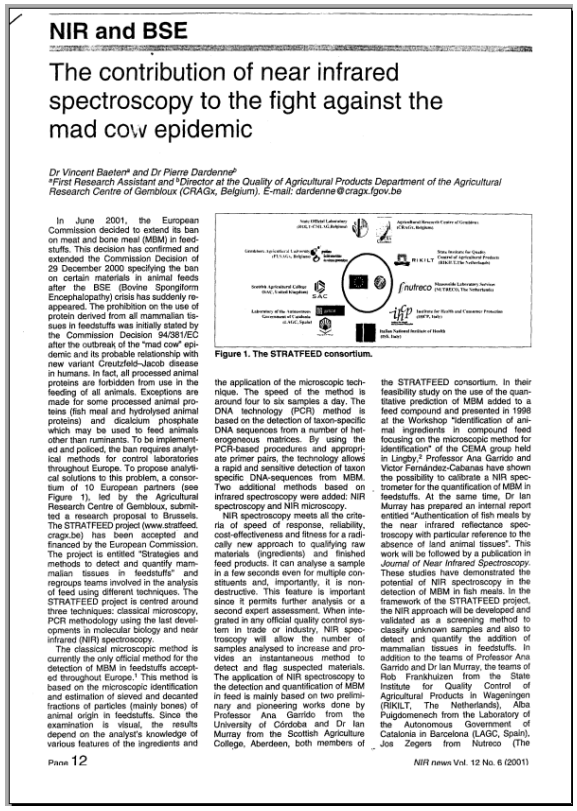
Historic Implementation of quality system at CRA-W

1998 NIR microscope au CRA-W (NIRM)

2001 Lancement du projet EU STRATFEED

2003 1st DG-Sanco PT

2004 1st Feed safety conference



NIR and BSE

The contribution of near infrared spectroscopy to the fight against the mad cow epidemic

Dr Vincent Baeten[a] and Dr Pierre Dardenne[b]
[a]First Research Assistant and [b]Director at the Quality of Agricultural Products Department of the Agricultural Research Centre of Gembloux (CRAGx, Belgium). E-mail: dardenne@cragx.fgov.be

In June 2001, the European Commission decided to extend its ban on meat and bone meal (MBM) in feedstuffs. This decision has confirmed and extended the Commission Decision of 29 December 2000 specifying the ban on certain materials in animal feeds after the BSE (Bovine Spongiform Encephalopathy) crisis has suddenly re-appeared. The prohibition on the use of protein derived from all mammalian tissues in feedstuffs was initially stated by the Commission Decision 94/381/EC after the outbreak of the "mad cow" epidemic and its probable relationship with new variant Creutzfeld–Jacob disease in humans. In fact, all processed animal proteins are forbidden from use in the feeding of all animals. Exceptions are made for some processed animal proteins (fish meal and hydrolysed animal proteins) and dicalcium phosphate which may be used to feed animals other than ruminants. To be implemented and policed, the ban requires analytical methods for control laboratories throughout Europe. To propose analytical solutions to this problem, a consortium of 10 European partners (see Figure 1), led by the Agricultural Research Centre of Gembloux, submitted a research proposal to Brussels. The STRATFEED project (www.stratfeed.cragx.be) has been accepted and financed by the European Commission. The project is entitled "Strategies and methods to detect and quantify mammalian tissues in feedstuffs" and regroups teams involved in the analysis of feed using different techniques. The STRATFEED project is centred around three techniques: classical microscopy, PCR methodology using the last developments in molecular biology and near infrared (NIR) spectroscopy.

The classical microscopic method is currently the only official method for the detection of MBM in feedstuffs accepted throughout Europe.[1] This method is based on the microscopic identification and estimation of sieved and decanted fractions of particles (mainly bones) of animal origin in feedstuffs. Since the examination is visual, the results depend on the analyst's knowledge of various features of the ingredients and the application of the microscopic technique. The speed of the method is around four to six samples a day. The DNA technology (PCR) method is based on the detection of taxon-specific DNA sequences from a number of heterogeneous matrices. By using the PCR-based procedures and appropriate primer pairs, the technology allows a rapid and sensitive detection of taxon specific DNA-sequences from MBM. Two additional methods based on infrared spectroscopy were added: NIR spectroscopy and NIR microscopy.

NIR spectroscopy meets all the criteria of speed of response, reliability, cost-effectiveness and fitness for a radically new approach to qualifying raw materials (ingredients) and finished feed products. It can analyse a sample in a few seconds even for multiple constituents and, importantly, it is non-destructive. This feature is important since it permits further analysis or a second expert assessment. When integrated in any official quality control system in trade or industry, NIR spectroscopy will allow the number of samples analysed to increase and provides an instantaneous method to detect and flag suspected materials. The application of NIR spectroscopy to the detection and quantification of MBM in feed is mainly based on two preliminary and pioneering works done by Professor Ana Garrido from the University of Córdoba and Dr Ian Murray from the Scottish Agriculture College, Aberdeen, both members of the STRATFEED consortium. In their feasibility study on the use of the quantitative prediction of MBM added to a feed compound and presented in 1998 at the Workshop "Identification of animal ingredients in compound feed focusing on the microscopic method for identification" of the CEMA group held in Lingby,[2] Professor Ana Garrido and Victor Fernández-Cabanas have shown the possibility to calibrate a NIR spectrometer for the quantification of MBM in feedstuffs. At the same time, Dr Ian Murray has prepared an internal report entitled "Authentication of fish meals by the near infrared reflectance spectroscopy with particular reference to the absence of land animal tissues". This work will be followed by a publication in *Journal of Near Infrared Spectroscopy*. These studies have demonstrated the potential of NIR spectroscopy in the detection of MBM in fish meals. In the framework of the STRATFEED project, the NIR approach will be developed and validated as a screening method to classify unknown samples and also to detect and quantify the addition of mammalian tissues in feedstuffs. In addition to the teams of Professor Ana Garrido and Dr Ian Murray, the teams of Rob Frankhuizen from the State Institute for Quality Control of Agricultural Products in Wageningen (RIKILT, The Netherlands), Alba Pulgdomenech from the Laboratory of the Autonomous Government of Catalonia in Barcelona (LAGC, Spain), Jos Zegers from Nutreco (The

Figure 1. The STRATFEED consortium.

Historic Implementation of quality system at CRA-W

1998 NIR microscope au CRA-W (NIRM)

2001 Lancement du projet EU STRATFEED (PCR)

2003 1st DG-Sanco PT

2004 1st Feed safety conference

2005 Accreditation of the methods – ISO 17025

BELAC

Organisme belge d'Accréditation
Belgische Accreditatieinstelling
Belgische Akkreditierungsstelle
Belgian Accreditation Body

Signatory to EA, ILAC and IAF Multilateral Agreements

Accreditation Certificate No. 300-TEST

In compliance with the provisions of the Royal Decree of 31 January 2006 setting up BELAC, the Accreditation Board hereby declares, that the test laboratory

MINISTERE DE LA REGION WALLONNE
CENTRE WALLON DE RECHERCHES AGRONOMIQUES
DEPARTEMENT QUALITE DES PRODUCTIONS AGRICOLES
Chaussée de Namur, 24
5030 GEMBLOUX - Belgium

has the competence to perform the tests as described in the annex which is an integral part of the present certificate, in accordance with the requirements of the standard NBN EN ISO/IEC 17025:2000. The present accreditation is the subject of regular surveillance in order to confirm the compliance with the accreditation conditions.

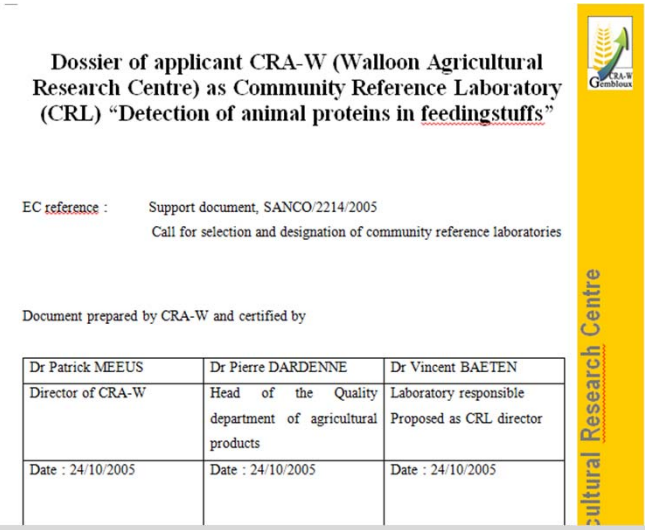
The Chair of the Accreditation Board BELAC,

Issue date : **2006-09-05**
Validity date : **2009-06-18**

Nicole MEURÉE-VANLAETHEM

Original version of this certificate is in French.

.be



Dossier of applicant CRA-W (Walloon Agricultural Research Centre) as Community Reference Laboratory (CRL) "Detection of animal proteins in feedingstuffs"

EC reference : Support document, SANCO/2214/2005
Call for selection and designation of community reference laboratories

Document prepared by CRA-W and certified by

Dr Patrick MEEUS	Dr Pierre DARDENNE	Dr Vincent BAETEN
Director of CRA-W	Head of the Quality department of agricultural products	Laboratory responsible Proposed as CRL director
Date : 24/10/2005	Date : 24/10/2005	Date : 24/10/2005

cultural Research Centre

ISO17025 - Preparation of a reference material

I should take advantage of the non-destructive feature of my method

Asterix reference sample

ISO17025 – Control chart

Table : Result of 23 days of NIRM analysis of 60 particles from in the Asterix CRA-W reference sample.

CRAGx code	Analysis	Number of analysed particles	Number of animal particles	Percentage of animal particles
30/08/04	Sed	60	8	13.33%
31/08/04	Sed	60	7	11.67%
01/09/04	Sed	60	4	6.67%
02/09/04	Sed	60	7	11.67%
…	…	…	…	…
19/01/05	Sed	60	7	11.67%
20/01/05	Sed	60	4	6.67%

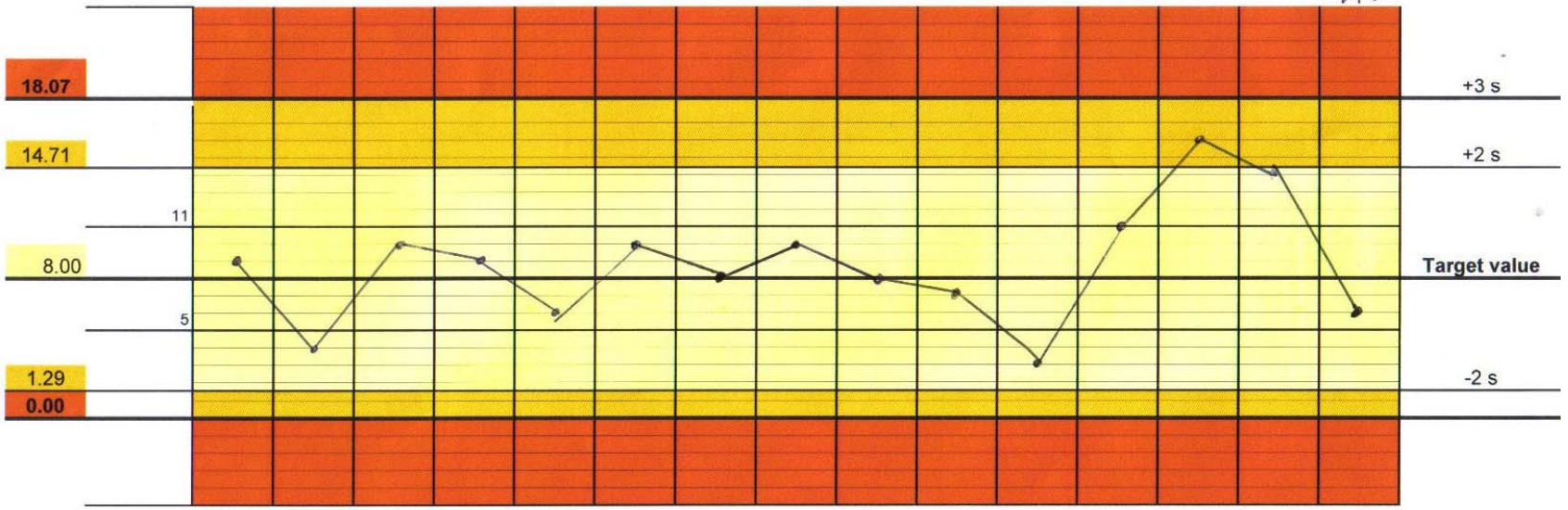
Mean (m)	8.00
Standard deviation (SD)	3.36
lim sup. = m + 2 x SD =	14.71
lim inf. = m - 2 x SD =	1.29

ISO17025 – Control chart NIRM - Asterix

NIRM Control chart

Sample : DQ-04-0752 **Analytical parameter :** Animal protein **Period :** January 07 - April 07

Analyst	CT	CT	CT	CT	CT	CT	CT	ZM	CT	CT	CT	CT	CT	TB	CT
Date	23.01.07	29.01.07	05.02.07	12.02.07	20.02.07	26.02.07	05.03.07	05.03.07	12.03.07	19.03.07	26.03.07	02.04.07	03.04.07	04.04.07	10.04.07
Nber Ani. Partic.	9	4	10	9	6	10	8	10	8	7	3	11	16	14	6
Corrective act.															
Visa Res. Labo :					FH				FH						FB
Date :					27/2/07				16/3/07						10/4/07



ISO17025 – Control chart NIR imaging - Obelix!

J.A. Fernández Pierna, P. Dardenne and V. Baeten, *J. Near Infrared Spectrosc.* **18**, 121–133 (2010)
Received: 8 August 2009 ■ Revised: 1 February 2010 ■ Accepted: 3 February 2010 ■ Publication: 5 May 2010

JNIRS JOURNAL OF NEAR INFRARED SPECTROSCOPY

In-house validation of a near infrared hyperspectral imaging method for detecting processed animal proteins in compound feed

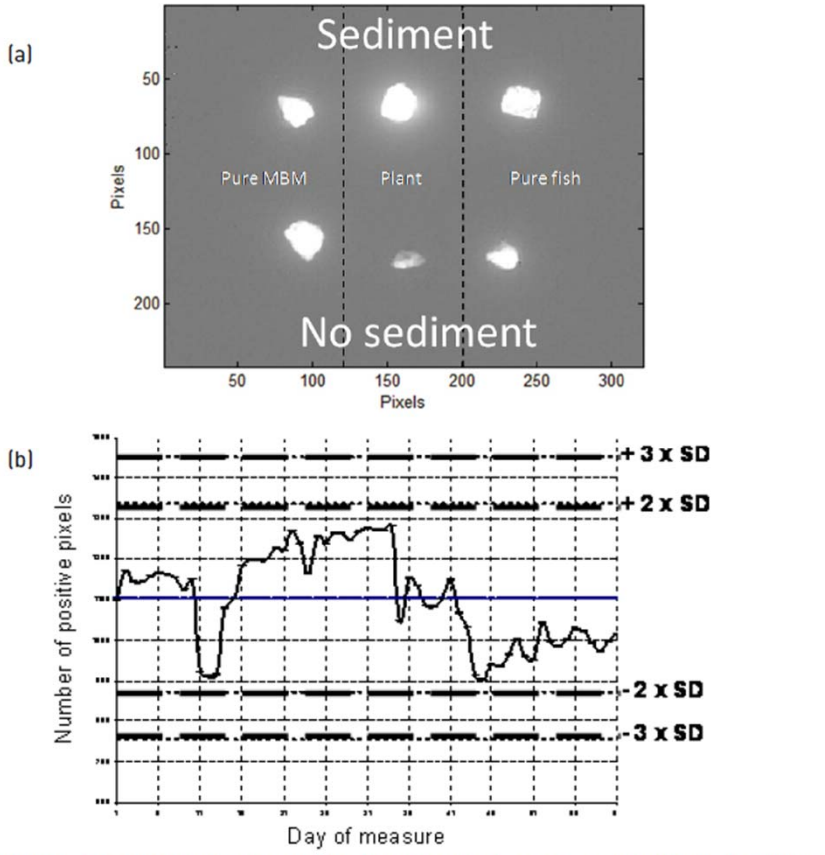


Figure 6. (a) NIR image of the particles used for the control chart. (b) Control chart showing the range of pixels detected as containing processed animal proteins.

ISO17025 – Control chart NIR imaging - Obelix!

Original research article

JNIRS
Journal of Near Infrared Spectroscopy
2018, Vol. 26(3) 186–195

DOI: 10.1177/0967033518780506
journals.sagepub.com/home/jns
SAGE

Quantification of protein in wheat using near infrared hyperspectral imaging: Performance comparison with conventional near infrared spectroscopy

Ana Morales-Sillero[1], Juan A. Fernández Pierna[2], George Sinnaeve[2], Pierre Dardenne[2] and Vincent Baeten[2]

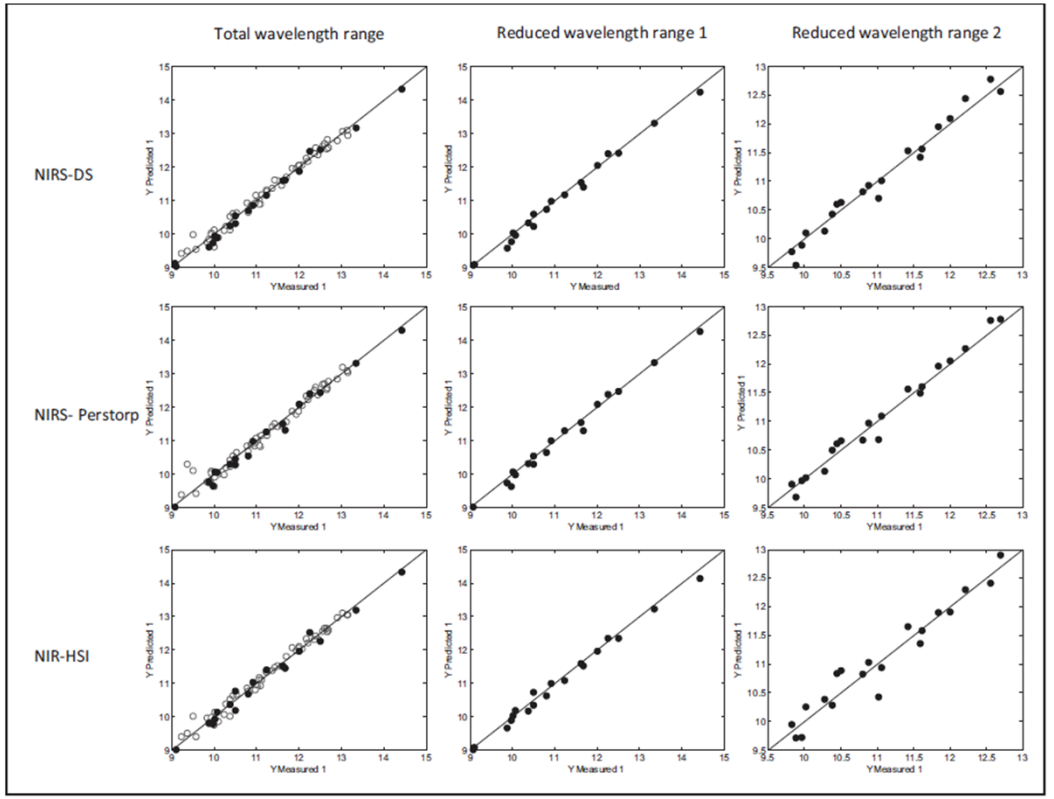


Figure 3. NIR predicted data versus reference data for protein content, for total wavelength range (strategy 1) and common wavelength range (strategy 1 and 2).

ISO17025 – What about NIRS ?

Walloon Agricultural Research Centre

Determination of moisture, protein, fat, crude fibre, starch, and ash in feed by near infrared spectroscopy		
Scope :		
Written by : LECLER Bernard MINET Olivier	Verified by : D4-BM, IR, MACRO, MICRO, MI, TE, CHE, MSC-RQ	Approved by : D4U15-IR-Rlabo

Contents

1. AIM AND SCOPE

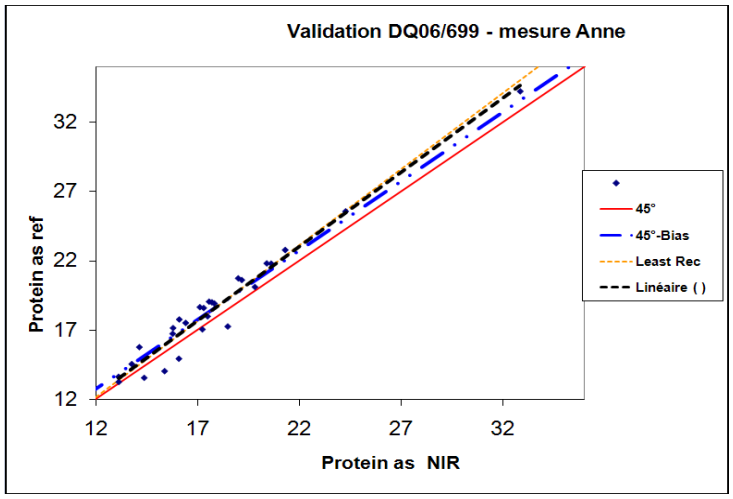
- This analytical procedure concerns the determination by Near Infrared Spectroscopy of moisture, fat, protein, starch, crude fibre and ash in animal feed (compound feed).
- The following table includes the kind of samples (compound feed) that can be analyzed by the NIR method. The NIR calibration (grcpf01.eqa) used has been built from a large spectral database containing all this kind of samples.

Table 1: Description of the kind of samples (compound feed) that can be analysed by the NIR method

Concentrates	Poultry	Ruminant	Swine	Equine
Poultry	Broiler	Beef	Finisher Pig	Race Horse
Broiler	Chick	Sheep	Gestation Pig	Pony
Duck	Duck	Calf	Grower pig	Horse
Layers	Game	Dairy	Piglet	
Ruminant	Goose	Dairy Blends		
Dairy	Layers	Lamb		
Blends	Ostrich	Goat		
Swine	Turkey			
Pig Finisher				
Pig growner				

ISO17025 – Validation sample set

- Crucial
- ISO12099
- At least 20
- Define your ISO17025 application area



Position	SampleNumber	SampleIdentificationStringOne
1	DQ06/0699-01	AVI-PONDEUSEGRANULESS25
2	DQ06/0699-02	AVI-PONDEUSEFARINES25
3	DQ06/0699-03	AVI-NATURAJAUNES25
4	DQ06/0699-04	AVI-LABELS25
5	DQ06/0699-05	AVI-FLOCS25(1)BROYE
6	DQ06/0699-06	OVI-AGNEAUS25
7	DQ06/0699-07	OVI-BREBISS25
8	DQ06/0699-08	PORCI-LABELS25
9	DQ06/0699-09	PORCI-JUNIORS25
10	DQ06/0699-10	PORCI-REPROFARINES25
11	DQ06/0699-11	HIPPO-FLOCS25
12	DQ06/0699-12	HIPPO-DIGESTS25
13	DQ06/0699-13	HIPPO-LIGHTS25
14	DQ06/0699-14	HIPPO-FORCES25
15	DQ06/0699-15	LAPI-NATURAS25
16	DQ06/0699-16	LAPI-FORCES25
17	DQ06/0699-17	SCAMFLOCS25
18	DQ06/0699-18	SPECIALGRAIN1ERAGE
19	DQ06/0699-19	REGALFLOCS25
20	DQ06/0699-20	JB25FREES25
21	DQ06/0699-21	BOA16S25
22	DQ06/0699-22	BOVIBEURRES25
23	DQ06/0699-23	BOVIBRIO16FREES25
24	DQ06/0699-24	BOVIBRIOS25
25	DQ06/0699-25	BOVIMAISS25
26	DQ06/0699-26	REGALENERGYFREES25
27	DQ06/0699-27	REGALBEEFS25

ISO17025 – Staff ability

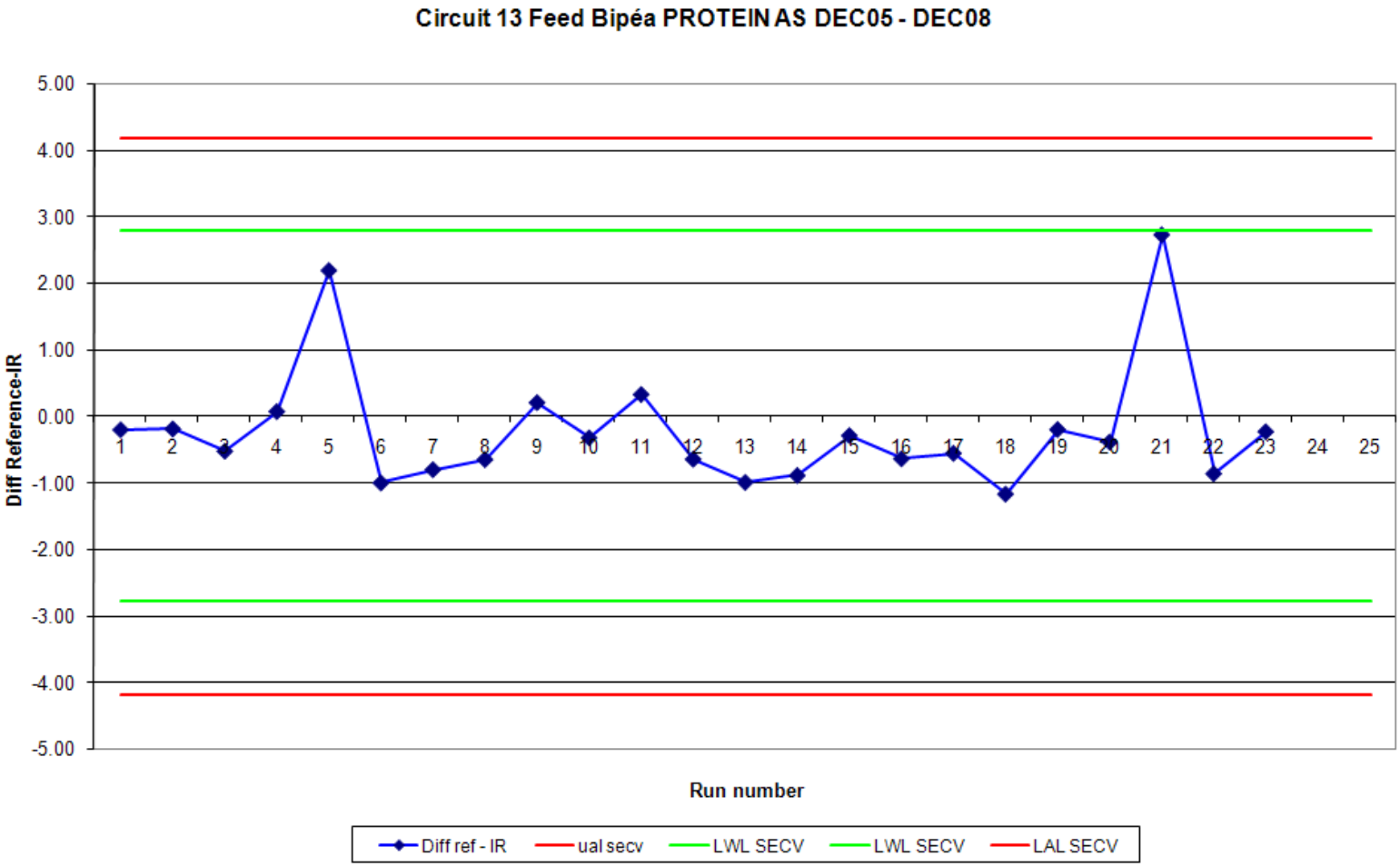
- Use the independent test set
- All the staff
- To check
- RMS <10 000

SAMPLE #	RMS Tech 1	RMS Tech 2	RMS Tech 3	RMS Tech 4
DQ060699-01	6559	636	5118	5419
DQ060699-02	672	2046	4248	7262
DQ060699-03	5983	4850	2896	12945
DQ060699-04	1100	3225	2679	4860
DQ060699-05	6772	3460	1709	6804
DQ060699-06	3023	926	2405	1159
DQ060699-07	1666	1006	1338	6513
DQ060699-08	4608	1369	2416	1139
DQ060699-09	4080	1313	6174	6920
DQ060699-10	1204	2640	4145	3163
DQ060699-11	2057	8443	2741	7818
DQ060699-12	4050	5294	5220	2913
DQ060699-13	1944	3447	1536	7793
DQ060699-14	2094	3552	7632	7523
DQ060699-15	1155	188	779	13710
DQ060699-16	1155	706	1595	4902
DQ060699-17	1788	8423	10987	491
DQ060699-18	2902	1077	10105	3026
DQ060699-19	1400	1264	5060	11202
DQ060699-20	604	1794	3450	6711
DQ060699-21	9238	1980	1553	2170
DQ060699-22	1162	603	2575	916
DQ060699-23	4710	1884	1332	2827
DQ060699-24	2865	1049	2049	3228
DQ060699-25	1391	2227	5003	6656
DQ060699-26	2521	2707	1297	1975
DQ060699-27	1439	1255	5806	1728
Mean	**2894**	**2495**	**3772**	**5251**

Protein content %

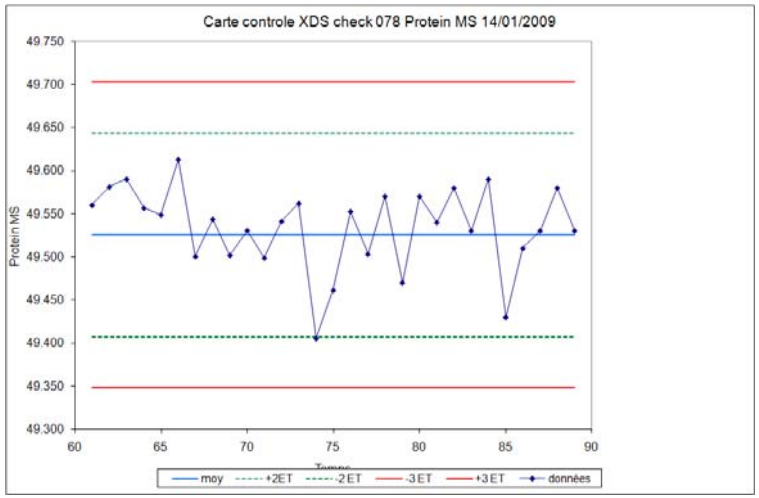
DQ06/0699-15	17.47	16.43	16.57	16.50	16.22
DQ06/0699-16	18.61	17.12	17.68	17.78	17.20
DQ06/0699-17	14.50	13.78	14.78	15.04	14.68
DQ06/0699-18	18.88	17.83	18.32	18.79	18.38
DQ06/0699-19	14.89	16.09	16.19	16.07	15.33
DQ06/0699-20	25.53	24.27	24.69	24.78	24.65

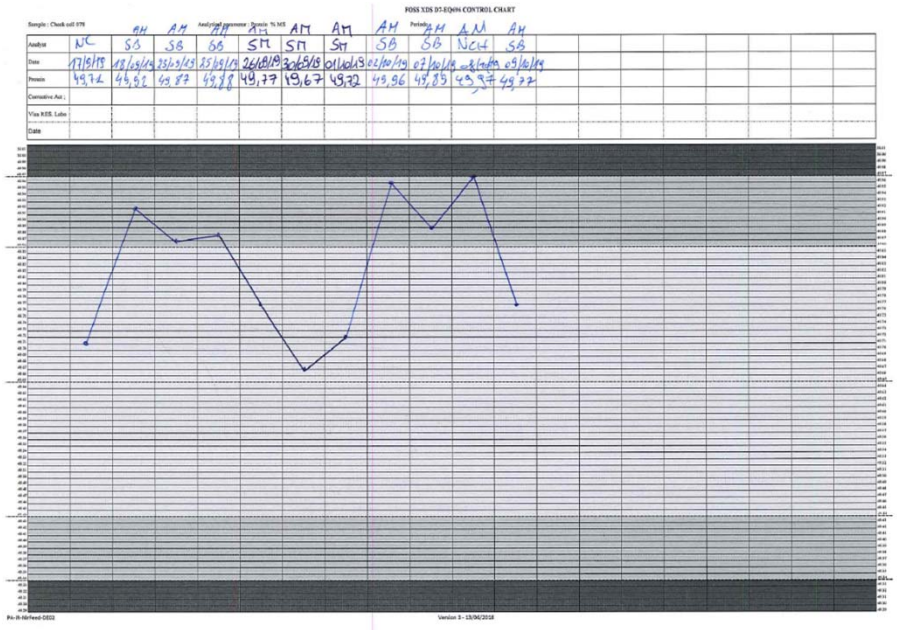
ISO17025 – Participation to ILS (BIPEA)



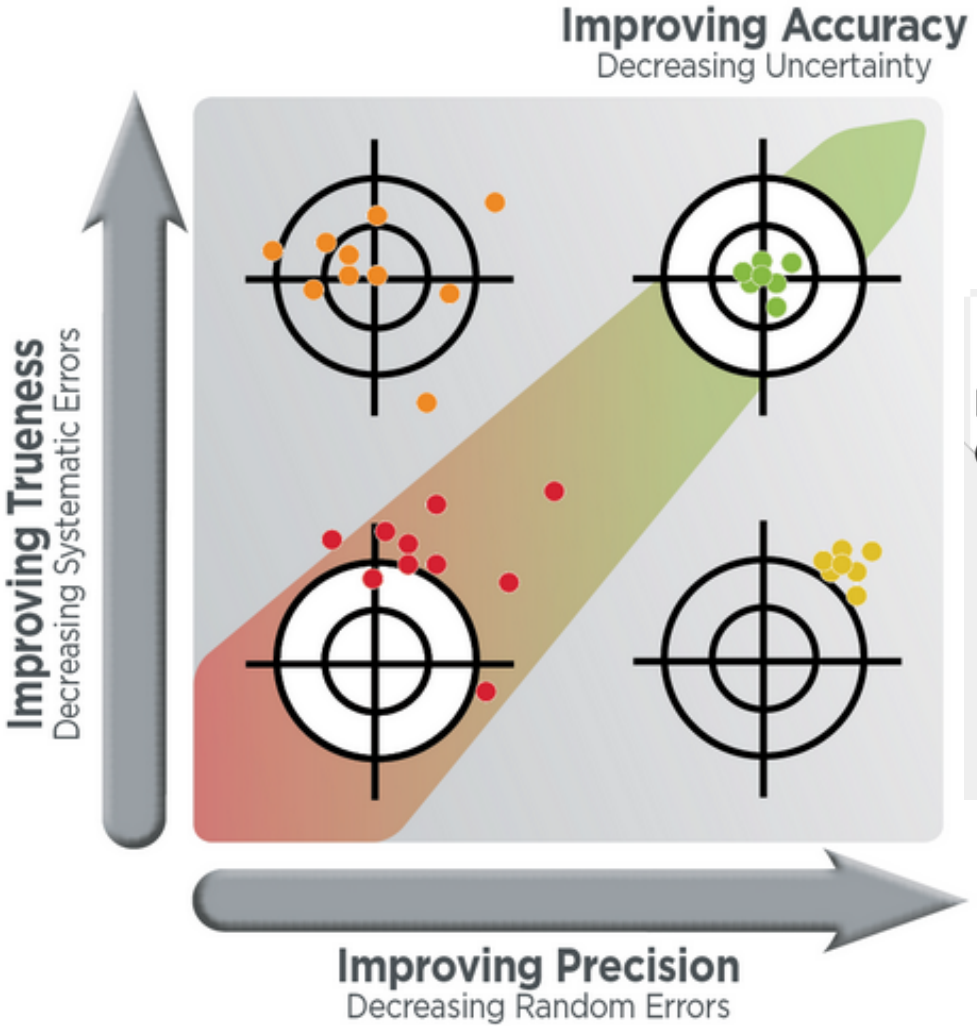
ISO17025 – Daily control Chart

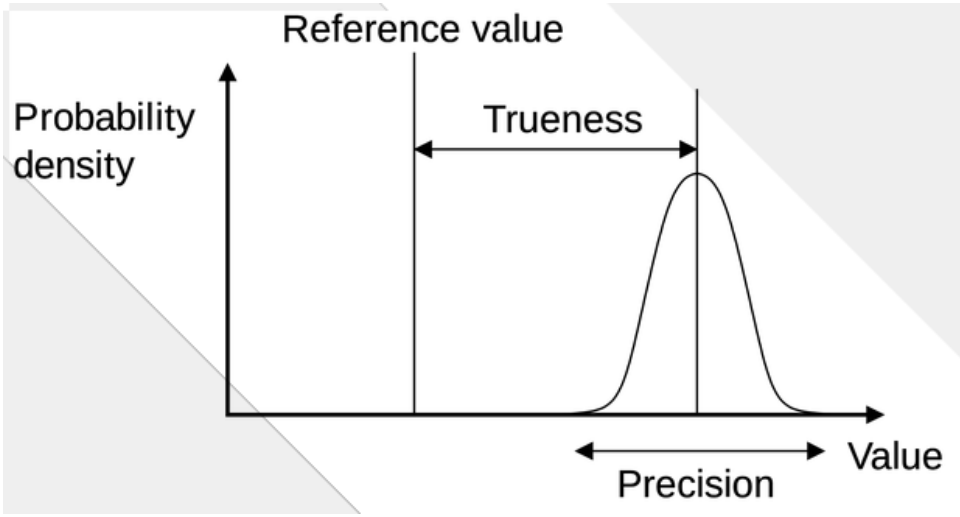
	Date		Protein % MS
1	10/07/2008	DQ08/0201	49.42
2	10/08/2008	DQ08/0201	49.65
3	10/08/2008	DQ08/0201	49.54
4	10/09/2008	DQ08/0201	49.50
5	10/13/2008	DQ08/0201	49.44
6	10/14/2008	DQ08/0201	49.48
7	10/20/2008	DQ08/0201	49.53
8	10/28/2008	DQ08/0201	49.57
9	10/30/2008	DQ08/0201	49.56
10	11/03/2008	DQ08/0201	49.48
11	11/03/2008	DQ08/0201	49.45
12	11/04/2008	DQ08/0201	49.55
13	11/04/2008	DQ08/0201	49.57
14	11/05/2008	DQ08/0201	49.57
15	11/06/2008	DQ08/0201	49.46
16	11/07/2008	DQ08/0201	49.46
17	11/10/2008	DQ08/0201	49.48
18	11/12/2008	DQ08/0201	49.52
19	11/14/2008	DQ08/0201	49.52
20	11/14/2008	DQ08/0201	49.58
21	11/17/2008	DQ08/0201	49.42
22	11/17/2008	DQ08/0201	49.47
23	11/17/2008	DQ08/0201	49.52
24	11/18/2008	DQ08/0201	49.45
25	11/18/2008	DQ08/0201	49.50
26	11/19/2008	DQ08/0201	49.52
27	11/19/2008	DQ08/0201	49.60
28	11/20/2008	DQ08/0201	49.51
29	11/20/2008	DQ08/0201	49.50
30	11/21/2008	DQ08/0201	49.59
31	11/24/2008	DQ08/0201	49.65
32	11/25/2008	DQ08/0201	49.43
33	11/26/2008	DQ08/0201	49.45
34	11/27/2008	DQ08/0201	49.47
35	11/28/2008	DQ08/0201	49.51
36	12/01/2008	DQ08/0201	49.43
37	12/02/2008	DQ08/0201	49.54
38	12/03/2008	DQ08/0201	49.64
39	12/04/2008	DQ08/0201	49.55
40	12/08/2008	DQ08/0201	49.48
41	12/09/2008	DQ08/0201	49.53
42	12/10/2008	DQ08/0201	49.55
43	12/11/2008	DQ08/0201	49.62
44	12/11/2008	DQ08/0201	49.62
45	12/12/2008	DQ08/0201	49.57
46	12/15/2008	DQ08/0201	49.53
47	12/16/2008	DQ08/0201	49.52
48	12/17/2008	DQ08/0201	49.51
49	12/18/2008	DQ08/0201	49.44
50	12/19/2008	DQ08/0201	49.60
51	1/05/2009	DQ08/0201	49.52





Quality system : do not forget our objective





Decreasing uncertainty = improving accuracy

Challenge : Target *versus* untarget analysis

La révolution est en marche ….

Targeted analysis

Untargeted analysis

Source : Sørensen et al., The use of rapid spectroscopic screening methods to detect adulteration of food raw materials and ingredients, Current Opinion in Food Science. (2016). DOI: 10.1016/j.cofs.2016.08.001

Challenge : Target *versus* untarget analysis

BRIEFING

Appendix XVIII: Guidance On Developing and Validating Non-Targeted Methods For Adulteration Detection. The USP Expert Panel on Non-Targeted Methods for Milk Ingredients (an Expert Panel to the Food Ingredients Expert Committee) proposes this new Appendix to the *Food Chemicals Codex* to provide guidance that reflects current scientific thinking on how to develop and validate non-targeted analytical methods. Non-targeted testing for potential adulterants in foods and food ingredients is becoming a more common approach to identifying products and determining whether or not more specific analytical testing for adulteration might be advised.

This guidance document is one in a series of documents that USP intends to offer to provide general information and assistance to the food industry. The document is intended to assist users in supply chain management by providing information that can generally be applied to testing and authentication of raw materials with a variety of analytical techniques. This document is not overly prescriptive by design to allow for differences in parameters such as testing techniques, data analysis, and ingredient variability that we would expect to exist within the food industry.

The proposal is targeted for publication in the *Third Supplement* to *FCC 10*.

This Appendix to the *Food Chemicals Codex* is intended to elaborate guidance frameworks and tools to assist users in the development and validation of non-targeted analytical methods to counter food fraud.

Add the following:

▲APPENDIX XVIII: GUIDANCE ON DEVELOPING AND VALIDATING NON-TARGETED METHODS FOR ADULTERATION DETECTION

CONTENTS

USP U.S. Pharmacopeial Convention

A Way to Get Ahead of Fraud Perpetrators

Instead of looking for *what should not be there…*

Define very carefully the characteristics of *what should be there*

Exclude anything that *deviates significantly from those characteristics*

Global Expertise | Trusted Standards | Improved Health

FEDERAL INSTITUTE FOR RISK ASSESSMENT

Standardisation of Non-Targeted Methods for Food Authentication

International Symposium

28 – 29 November 2016, Berlin

BfR Bundesinstitut für Risikobewertung

FOOD INTEGRITY

Historic Implementation of quality system at CRA-W

1998 NIR microscope au CRA-W (NIRM)

2001 Lancement du projet EU STRATFEED (PCR)

2003 1st DG-Sanco PT

Intercomparison study for the determination of processed animal proteins including meat and bone meal in animal feed

Gisèle Gizzi[1], Christoph von Holst[1], Vincent Baeten[2], Gilbert Berben[2], Leo van Raamsdonk[3]

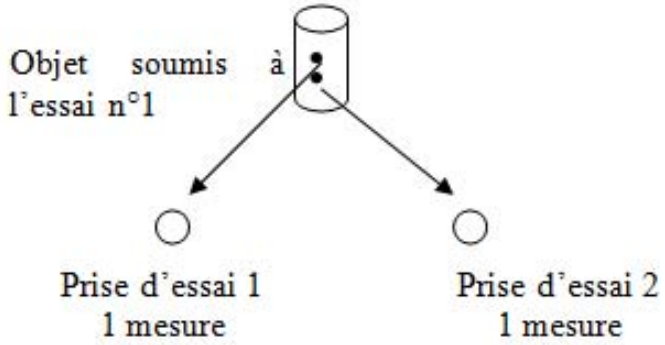
[1] Institute for Reference Materials and Measurements, Retieseweg, B-2440 Geel (Belgium)
[2] Centre de Recherches Agronomiques de Gembloux , 24, Chaussée de Namur B-5030 - Gembloux (Belgium)
[3] RIKILT- Institute of Food Safety, P.O. Box 230 NL-6700 AE Wageningen (The Netherlands)

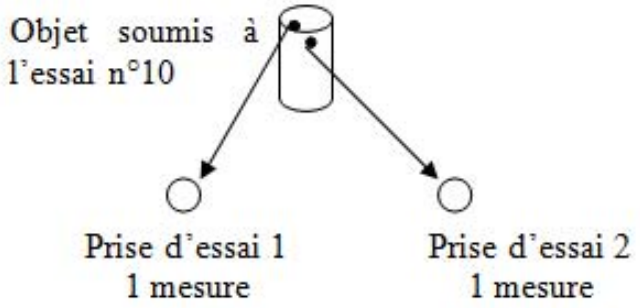
Final report

16 May 2003

NIRS ILS – preparation of samples

	PROCEDURE TECHNIQUE	Identification document : PT-CRAW-HOMOGENEITE MRI - Version 2
CRA-W Gembloux	Détermination de l'homogénéité d'un matériau de référence	Date de publication : 12/11/2009
		Page 4 sur 12

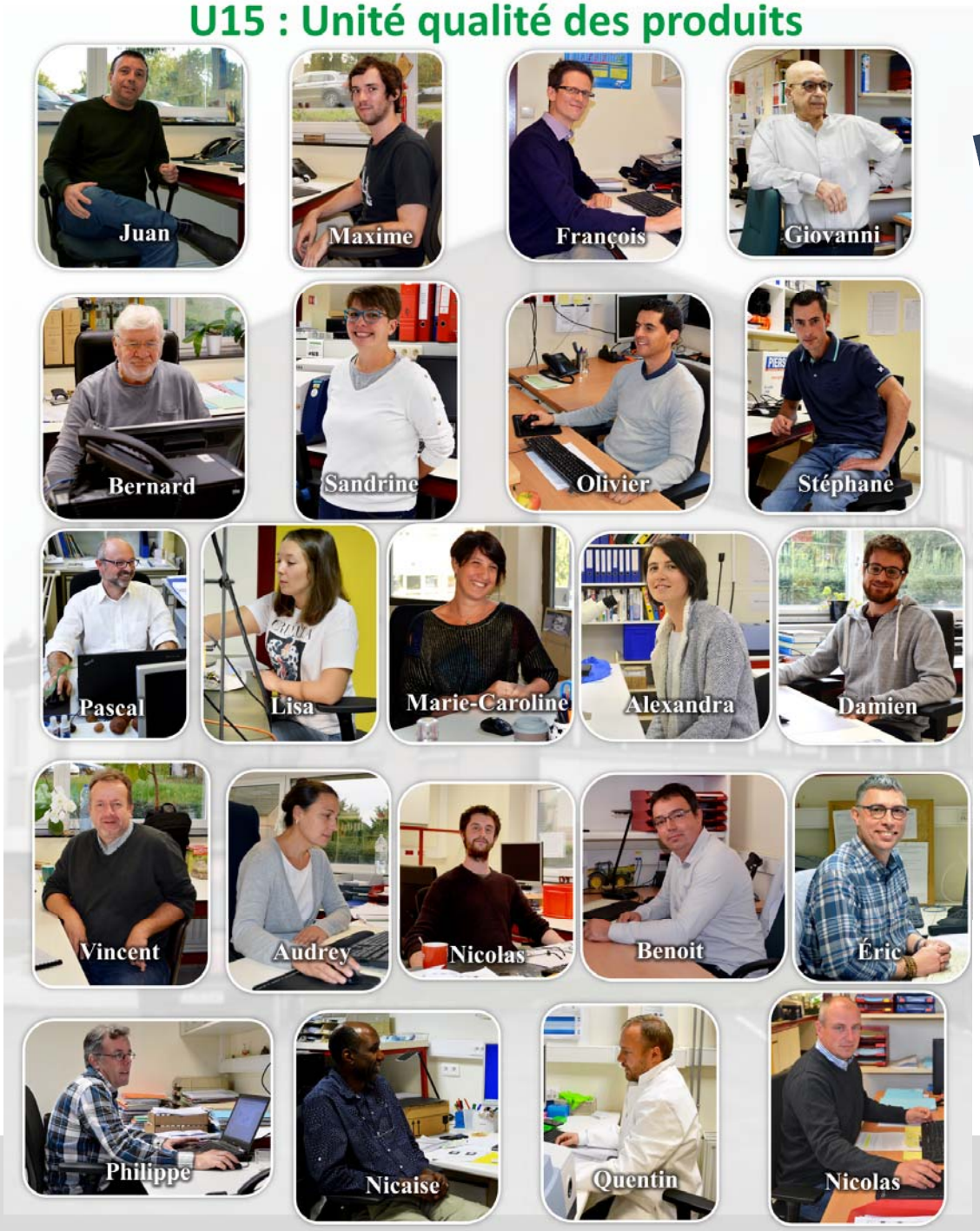




Conclusion

≠

U15 : Unité qualité des produits



at your service