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EXPERTISE ET **C**ONTROLE DES **A**NALYSES **LAIT**IERES

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ARTICLE

EVALUATION OF THE BENTLEY FTS™ INFRARED ANALYSER ON EWE AND GOAT MILK MATRIX

The FTS is an infrared spectrophotometer (mid infrared: 2-10 µm) manufactured by Bentley Instruments (USA) and commercialized in the Western Europe by Bentley Instruments SARL. It is used for the determination of the principal components in milk samples.

This instrument uses a high resolution industrial infrared spectrometer based on Fourier transform (FTIR). The interferometer is referenced by a laser and placed in an anti-vibration, temperature regulated airtight enclosure. The complete infrared spectrum is collected and recorded for each sample. Using a MLR or PLS calibration, standard components (fat, protein and lactose) and other criteria such as the freezing point and urea can be determined.

The apparatus is connected to a computer that ensures the running of the instrument and the signal treatment.

The tests:

The evaluation tests were performed in Actilait-Cecalait's physico-chemistry laboratory (reference and infrared analyses) in January and February 2010 on ewe and goat mixed milk samples. They concerned fat (equivalent fat filter B), protein (MP) and freezing point (FPD). The calibration (ewe milk), the repeatability and the accuracy were evaluated.

The appreciation criteria of the estimated parameters were taken from ISO 9622 / IDF 141 C:2000 "Guide for the operation of mid-infrared instruments", or from the CNIEL/IE handbook concerning the use of infrared apparatus within the context of milk payment and milk control in France.

The following instrumental parameters were used:
- Rate: 500 samples / hour;
- No correction of contamination.

A- EWE MILK

A1- Evaluation of the calibration

A1.1- Procedure

The evaluation of the calibration for fat and protein, initially installed by the manufacturer, was performed with 13 commercial "high" infrared standard reference materials (SRM) produced by Actilait-Cecalait in January 2010. Each sample was analysed in duplicate.

A1.2- Results

The table below presents the results obtained:

	N	Min-max	Sr	d	Sd	Sl1	Sl3
Fat (g/l)	13	59-89	0.08	0.01	0.21	0.22	0.23
Protein (g/l)	13	45-67	0.04	0.00	0.06	0.05	0.05

Table 1: FTS calibration parameters for fat and protein "high" contents
N: number of standards, min and max: minimum and maximum values, Sr: standard deviation of repeatability, d and Sd: mean and standard deviation of deviations (instrument-reference), Sl1 and Sl3: residual standard deviation of simple linear regression (reference vs instrument) or multiple (reference vs MG, MP and lactose).

It can be noted that the residual standard deviations of regression are low and equivalent to the standard deviations of deviations. The residual interactions are not significant.

A1.3- Conclusion

The residual standard deviations of the linear regression obtained for fat and protein are in agreement with the recommendations of the CNIEL/IE handbook (below 0.30 and 0.20 g/l respectively), which corresponds to the content in ewes' milk.

A2- Evaluation of repeatability and accuracy

A2.1- Samples

The tests were performed on about 100 samples of milk from the Roquefort region (12). Bronopol was added to the samples to give a final concentration of 0.02 %.

A2.2- Repeatability

A2.2.1- Procedure

The repeatability of the instrument was evaluated using all the milk samples for fat, protein and freezing point. The quantitative analyses were performed in automatic analysis mode, in duplicate for each set of 10 samples according to the following sequence: (Set 1 rep 1 - Set 1 rep 2 - Set 2 rep 1 - Set 2 rep 2 … Set n rep 1 - Set n rep 2). A control milk was analysed every 30 samples to verify the stability of the analyser.

A2.2.2- Results

The table below presents the results obtained:

	n	min	max	M	Sx	Sr	Sr (%)	r
Fat (g/l)	106	55.64	85.36	66.66	5.75	0.13	0.20	0.37
Wide fat (g/l)	106	55.92	85.21	66.88	5.67	0.13	0.20	0.37
Protein (g/l)	106	44.77	64.63	50.66	4.17	0.08	0.15	0.22
Wide protein (g/l)	106	44.77	64.63	50.66	4.17	0.08	0.15	0.22
PLS protein (g/l)	106	45.78	65.31	51.60	4.08	0.06	0.11	0.16
FPD (m°c x-1)	80	550	567	561	3.4	0.94	0.17	2.61

Table 2: FTS repeatability criteria for fat, protein and freezing point in ewe milk samples
n: number of results; min and max: minimum and maximum values; M and Sx: mean and standard deviation of the results; Sr and Sr%: absolute and relative standard deviation of repeatability; r: maximum deviation of repeatability in 95% of cases.
Wide: results obtained after calibration with "median" and "high" SRM. PLS: results obtained after PLS calibration

A2.2.3- Conclusion

For fat and protein content, FTS presents a relative standard deviation of repeatability (Sr%) in accordance with the recommendations of the CNIEL/IE handbook (Sr ≤ 0.45%). Concerning the freezing point, the standard deviation of repeatability (Sr) obtained is in accordance with the recommendations of the CNIEL/IE handbook (Sr ≤ 2 m°c), which corresponds to cows' milk.

A2.3- Evaluation of the accuracy

A2.3.1- Procedure

The accuracy of the analyser was evaluated using 80 samples of ewe milk for fat, protein and freezing point. The quantitative analyses were performed in accordance with the evaluation of repeatability (cf A2.2). For fat and protein, the evaluation concerns the values obtained after calibration of the instrument with commercial SRMs produced by Actilait-Cecalait (cf A1). For FPD, the instrumental values are from a calibration carried out by the manufacturer.

The following reference methods were used:
- Fat: Acido-butyrometric method according to NF V 04-155 (single test);
- Protein: Amido black method according to NF V 04-216 (test in duplicate);
- Freezing point: Thermistor cryoscopic method according to ISO 5764/IDF 108 (single test).

A2.3.2- Results

The following tables and figures present the results obtained:

	Fat (g/l)	Fat (g/l) (wide)	Protein (g/l)	Protein (g/l) (wide)	Protein (g/l) (PLS)	Freezing point (m°C x –1)
n	80	80	80	80	80	80
Min	57.60	57.60	47.33	47.33	47.33	542
Max	86.40	86.40	68.71	68.71	68.71	572
Y	67.98	67.98	53.12	53.12	53.12	561
X	66.31	66.55	50.97	50.74	51.70	561
Sy	5.85	5.85	4.60	4.60	4.60	5.5
d	-1.67	-1.44	-2.16	-2.38	-1.42	-0.5
Sd	0.52	0.52	0.48	0.45	0.48	4.2
Sy,x	0.51	0.52	0.41	0.42	0.39	4.2
Sy,x %	0.74	0.76	0.8	0.78	0.79	0.75
b	0.977	0.993	1.057	1.040	1.066	1.068
a	3.23	1.92	-0.77	0.33	-1.97	-37.55

Table 3: FTS accuracy parameters for fat, protein and freezing point in ewes' milk samples
n, min, max: number of results, minimum and maximum value; Y,X: mean of the results using the reference and instrumental methods; Sy: standard deviation of the results from the reference method; d, Sd: mean and standard deviation of deviations; Sy,x and Sy,x%: absolute and relative residual standard deviation; b, a: slope and intercept of the linear regression.
Wide: results obtained after calibration with "median" and "high" SRMs. PLS: results obtained after PLS calibration

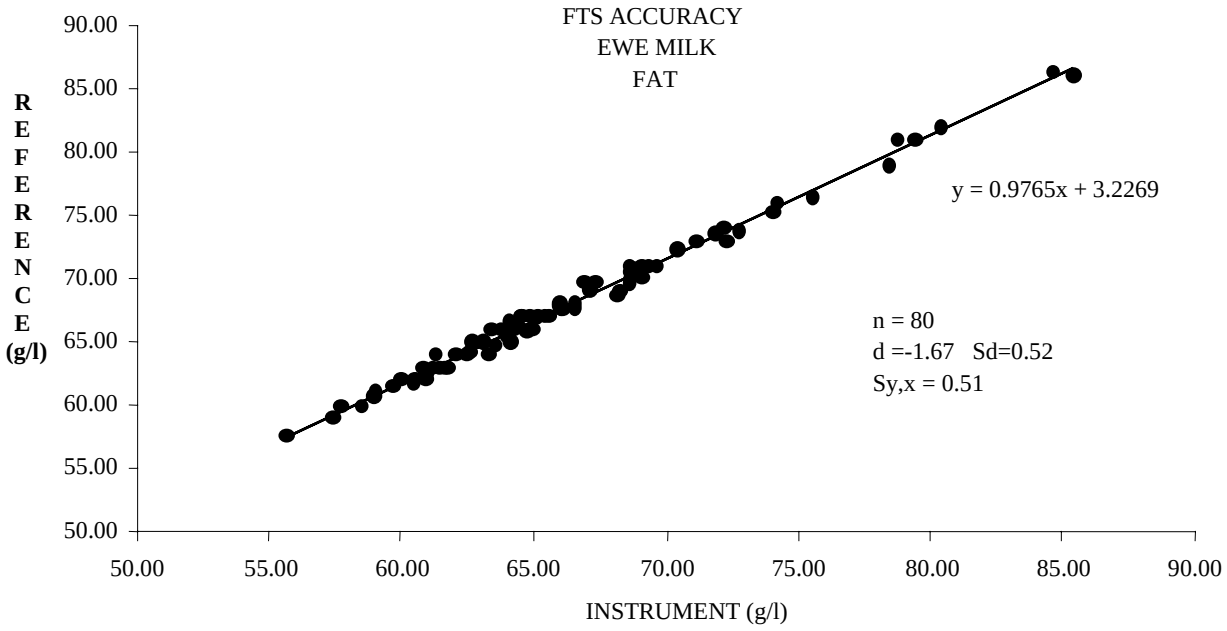

Figure 1: Relation between FTS and reference results for fat in ewe's milk samples

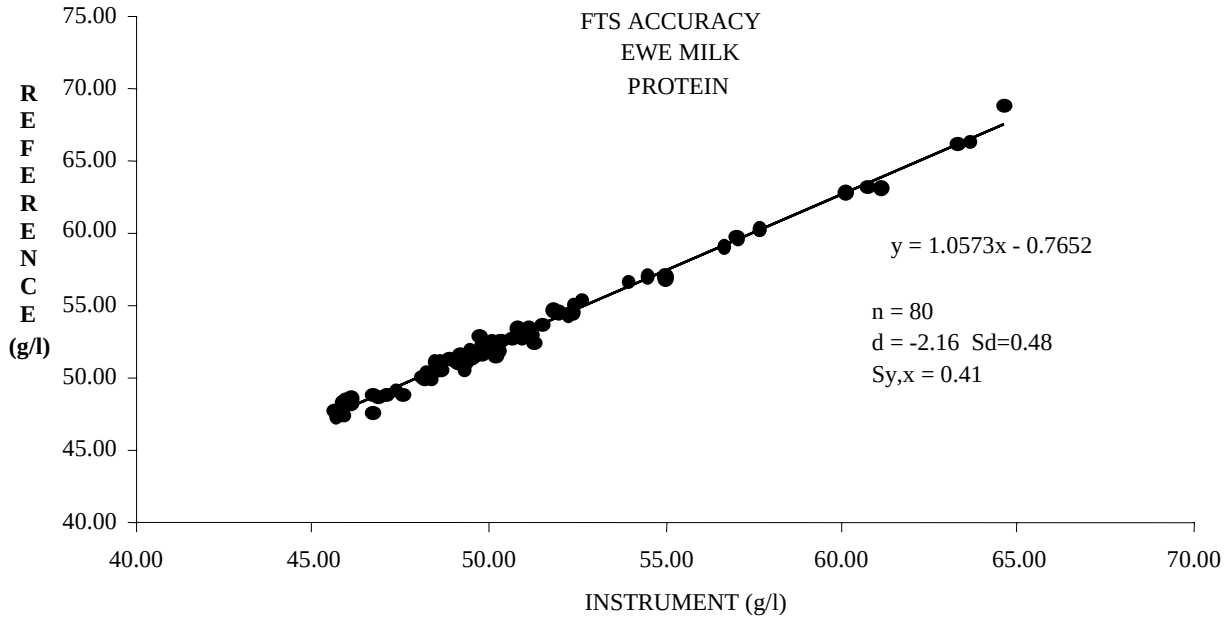

Figure 2: Relation between FTS and reference results for protein in ewe's milk samples

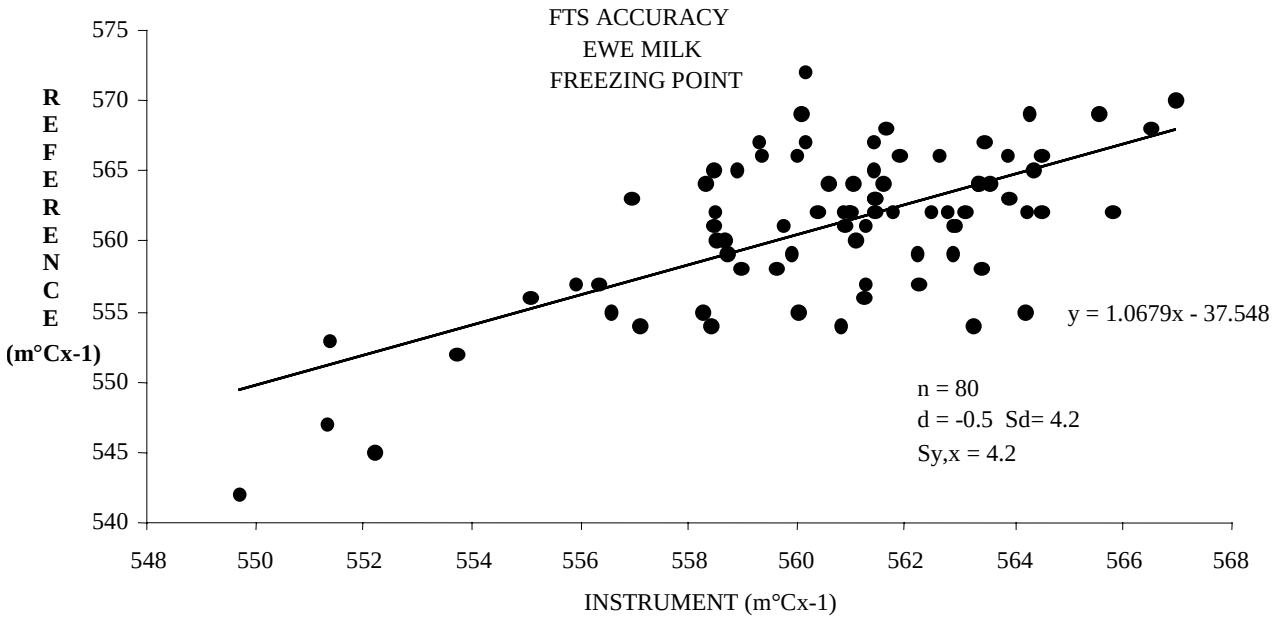

Figure 3: Relation between FTS and reference results for freezing point in ewe's milk samples

It can be noted that:
- For fat, the mean and standard deviation of deviations are –1.67 and 0.52 g/l respectively. The regression line obtained is significantly different from 1.00 (P = 5%) and the intercept is significantly different from zero (P = 1%). The residual standard deviation of regression is equal to 0.51g/l.
- For protein, the mean and the standard deviation of deviations are –2.16 and 0.48 g/l respectively. The regression line obtained is significantly different from 1.00 (P = 1%) and the intercept is significantly different from zero (P = 1%). The residual standard deviation is equal to 0.41g/l.
- For freezing point, the mean and standard deviation of deviations are –0.5 and 4.2 (m°C x –1) respectively. The regression line obtained is significantly different from 1.00 (P = 1%) and the intercept is significantly different from zero (P = 1%). The residual standard deviation is equal to 4.2 (m°C x –1).

The results obtained from wide calibrations give residual standard deviations equivalent to slope and mean values closest to 1 and 0.

A2.3.3- Conclusion

With no regulation or standard limits for this type of milk, it can be noted that for the both components criteria, the standard deviations obtained are lower than the accuracy limit of the standardised value of the method ISO 9622 / IDF 141 for cow herd milk samples, which is 0.7 g/L. However, it can be noted that the slope values are statistically different from 1.00 for fat and protein on this type of milk. The composition of ewe milk is probably in relation with this observation. It will be necessary to proceed to slope and intercept adjustments on specific milk samples

B- GOAT MILK

B1- Samples

The tests were performed on 100 samples of milk from Poitou-Charentes Region.

B2- Evaluation of repeatability

B2.1- Proceure

The repeatability of the instrument was evaluated using all the milk samples for fat, protein and freezing point. The quantitative analyses were performed in automatic analysis mode, in duplicate for each set of 10 samples according the following sequence: (Set 1 rep 1 - Set 1 rep 2 - Set 2 rep 1 - Set 2 rep 2 … Set n rep 1 - Set n rep 2). A control milk was analysed every 30 samples to verify the stability of the analyser.

B2.2- Results

The table below presents the results obtained:

	n	min	max	M	Sx	Sr	Sr (%)	r
Fat (g/l)	100	32.81	56.47	42.66	5.05	0.08	0.19	0.23
Wide fat (g/l)	100	32.62	55.91	42.49	5.01	0.09	0.20	0.24
Protein (g/l)	100	29.76	47.32	35.18	3.18	0.10	0.29	0.28
Wide protein (g/l)	100	30.50	48.44	35.82	3.33	0.07	0.19	0.19
PPLS protein (g/l)	100	30.67	47.10	35.49	3.19	0.05	0.15	0.14
FPD (m°C x-1)	100	536	565	552	5.5	0.89	0.16	2.47

Table 4 : FTS repeatability criteria for fat, protein and freezing point in goat milk samples
n: number of results; min and max: minimum and maximum values; M and Sx: mean and standard deviation of the results; Sr and Sr%: absolute and relative standard deviation of repeatability; r: maximum deviation of repeatability in 95% of cases.
Wide: results obtained after calibration with "median" and "high" SRM. PLS: results obtained after PLS calibration

B2.3- Conclusion

For fat and protein content, FTS presents a standard deviation of repeatability (Sr) in accordance with the recommendations of the CNIEL/IE handbook (Sr ≤ 0.14 g/l).
Concerning the freezing point, the standard deviation of repeatability obtained is in accordance with the recommendations of the CNIEL/IE handbook (Sr ≤ 2 m°c), which corresponds to cows' milk.

B3- Evaluation of accuracy

B3.1- Procedure

The accuracy of the analyser was evaluated using about 80 samples of goat milk (74 for fat after elimination of absurd results and 67 for protein after elimination of the results higher to 39 g/l) for fat, protein and freezing point. The quantitative analysed were performed in accordance with the evaluation of repeatability (cf B2.1). For fat and protein, the evaluation concerns the values obtained after calibration if the instrument with commercial SRMs produced by Actilait-Cecalait. For FPD, the instrumental values are from a calibration carried out by the manufacturer.

The following reference methods were used:
- Fat: Acido-butyrometric method according to NF V 04-210 (single test);
- Protein: Amido Black method according to NF V 04-216 (test in duplicate);
- Freezing point: Thermistor cryoscopic method according to ISO 5764/IDF 108 (single test).

B3.2- Results

The following tables and figures present the results obtained:

	Fat (g/l)	Fat (g/l) (wide)	Protein (g/l)	Protein (g/l) (wide)	Protein (g/l) (PLS)	Freezing point (m°C x –1)
n	74	74	67	67	67	79
Min	33.80	33.80	30.82	30.82	30.82	535
Max	56.00	56.00	38.74	38.74	38.74	560
Y	42.94	42.94	35.15	35.15	35.15	551
X	42.55	42.38	34.34	34.92	34.64	554
Sy	4.78	4.78	2.09	2.09	2.09	5.0
d	-0.39	-0.56	-0.81	-0.23	-0.51	2.6
Sd	0.40	0.42	0.39	0.33	0.33	4.0
Sy,x	0.38	0.41	0.27	0.32	0.29	3.6
Sy,x %	0.88	0.94	0.78	0.91	0.83	0.66
b	0.972	0.978	1.006	0.937	1.015	0.665
a	1.59	1.49	0.61	2.41	0.01	183

Table 5: FTS accuracy parameters for fat, protein and freezing point in goats' milk samples

n, min, max: number of results, minimum and maximum value; Y,X: mean of the results using the reference and instrumental methods; Sy: standard deviation of the results from the reference method; d, Sd: mean and standard deviation of deviations; Sy,x and Sy,x%: absolute and relative residual standard deviation; b, a: slope and intercept of the linear regression.
Wide: results obtained after calibration with "median" and "high" SRMs. PLS: results obtained after PLS calibration

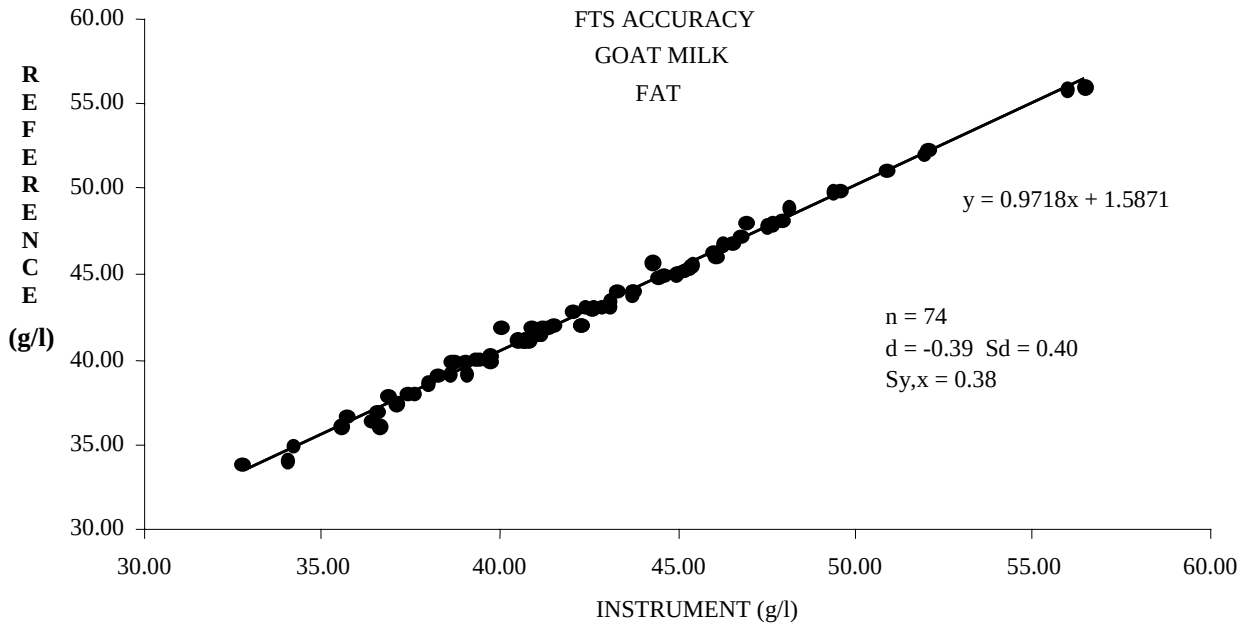

Figure 5: Relation between FTS and reference results for fat in goats' milk samples

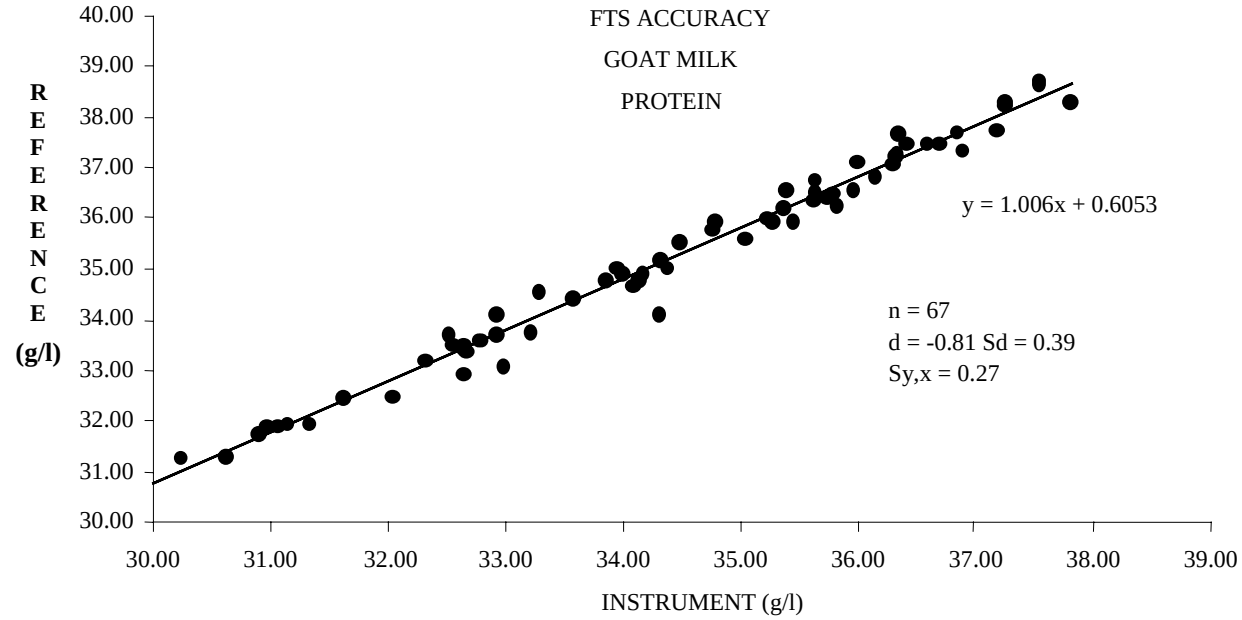

Figure 6: Relation between FTS and reference results for protein in goats' milk samples

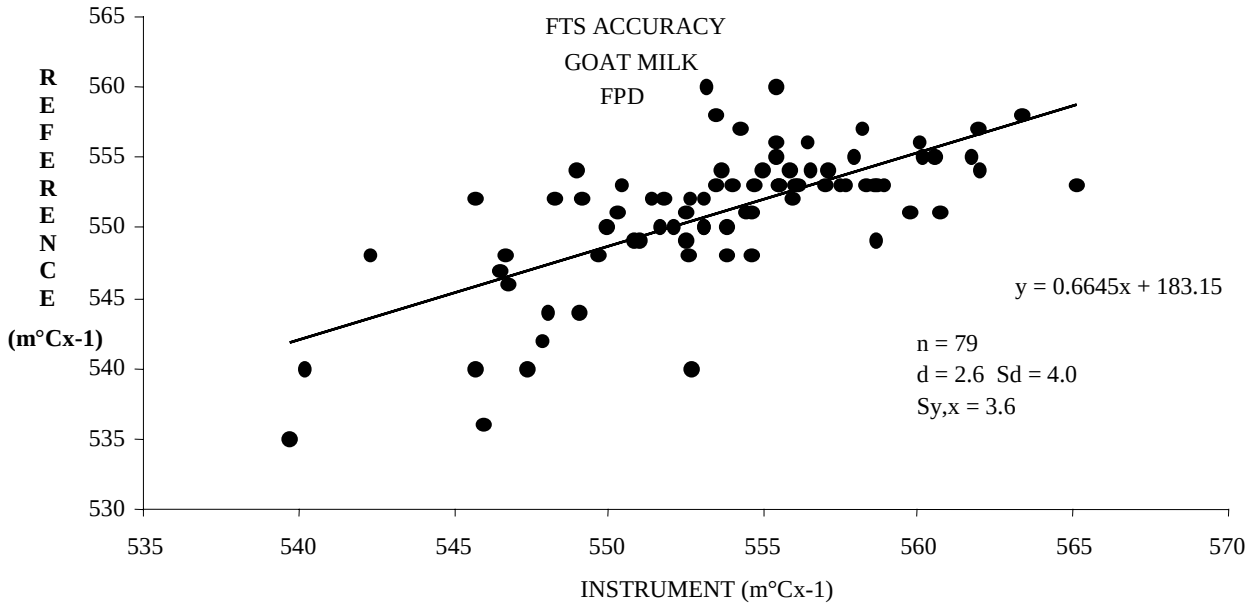

Figure 7: Relation between FTS and reference results for freezing point in goats' milk samples

It can be noted that:
- For fat, the mean and standard deviation of deviations are –0.39 and 0.40 g/l respectively. The regression line obtained is significantly different from 1 (P = 1%) and the intercept is significantly different from zero (P = 1%). The residual standard deviation of regression is equal to 0.38 g/l.
- For protein, the mean and standard deviation of deviations are –0.81 and 0.39 g/l respectively. The regression line obtained is not significantly different from 1 (P = 5%) and the intercept is significantly different from zero (P = 5%). The residual standard deviation of regression is equal to 0.27 g/l.
- For freezing point, the mean and standard deviation of deviations are 2.6 and 4.0 (m°C x –1) respectively. The regression line obtained is significantly different from 1 (P = 1%) and the intercept is significantly different from zero (P = 1%). The residual standard deviation of regression is equal to 3.6 (m°C x –1).

For fat and protein, the results obtained from the wide or PLS calibrations do not improve the residual standard deviations and the slopes.

B3.3.3- Conclusion

With no regulation or standard limits for this type of milk, it can be noted that, for the both composition criteria, the standard deviations obtained are lower than the accuracy limit of the standardised method ISO 9622 / IDF 141 for the cow herd milk samples, which is 0.7 g/L. However, it can be noted that the slope value is statistically different from 1.00 for fat on this type of milk. The composition of ewe milk is probably to be in relation with this observation, and it will be necessary to proceed to a specific slope adjustment.
For FPD determination, as if the slope deviation is important in relation to 1.00, the adjustment do not allow to improve clearly the prediction of the results (Sy,x near to Sd). It will be necessary to proceed to slope and intercept adjustments on specific milk samples.

STANDARDS, DRAFT STANDARDS

Classification in alphabetic order by theme

ISO standards under development

SENSORY ANALYSIS		
COLOUR	ISO/DIS 11037 February 2010	SENSORY ANALYSIS General guidance for sensory assessment of the colour of products
SENSORY PANEL	ISO/DIS 11132 February 2010	SENSORY ANALYSIS General guidance for monitoring the performance of a quantitative sensory panel
DESIGNS	ISO/DIS 29842 May 2010	SENSORY ANALYSIS Methodology – Balanced incomplete block designs
CHEESE AND PROCESSED CHEESE		
NITROGENOUS FRACTIONS	ISO/DIS 27871 June 2010	CHEESE AND PROCESSED CHEESE Determination of the nitrogenous fractions
MYCROBIOLOGY OF FOOD AND ANIMAL FEEDING STUFFS		
TEST SAMPLES	ISO/FDIS 6887-5 January 2010	MICROBIOLOGY OF FOOD AND ANIMAL FEEDING STUFFS Preparation of test samples, initial suspension and decimal dilutions for microbiological examination Part 5: Specific rules for the preparation of milk and milk products

ISO published standards

FERMENTED MILK PRODUCTS		
STARTER CULTURES	ISO 27205:2010 February 2010	FERMENTED MILK PRODUCTS Bacterial starter cultures – Standard of identity
MICROBIOLOGY OF FOOD AND ANIMAL FEEDINF STUFFS		
CAMPYLOBACTER	ISO/TS 10272-3:2010 March 2010	MICROBIOLOGY OF FOOD AND ANIMAL FEEDING STUFFS Horizontal method for detection and enumeration of *Campylobacter* spp. Part 3: semi-quantitative method
MILK AND MILK PRODUCTS		
MILK FAT	ISO 17678:2010 February 2010	MILK AND MILK PRODUCTS Determination of milk fat purity by gas chromatographic analysis of triglycerides (reference method)
MILK PRODUCTS		
BIFIDOBACTERIA	ISO 29981:2010 (IDF 220) February 2010	MILK PRODUCTS Enumeration of presumptive bifidobacteria – Colony count technique at 37°C
QUALITY		
PROFICIENCY TESTING	ISO/CEI 17043:2010 February 2010	CONFORMITY ASSESSMENT General requirements for proficiency testing

NEW EU REGULATIONS

Classification is established in alphabetical order of the first keyword

CONTAMINANT

O.J.E.U. L 50, 27th February 2010 – Commission Regulation (EU) n° 165/2010 of 26 February 2010 amending Regulation (EC) n° 1881/2006 setting maximum levels for certain contaminants in foodstuffs as regards aflatoxins
http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2010:050:0008:0012:EN:PDF

PESTICIDES

O.J.E.U. L 338, 19th December 2009 – Corrigendum to Commission Regulation (EC) n° 1050/2009 of 28 October 2009 amending Annexes II and III to Regulation (EC) n° 396/2005 of the European Parliament and of the Council as regards maximum residue levels for azoxystrobin, acetamiprid, clomazone, cyflufenamid, emamectin benzoate, famoxadone, fenbutatin oxide, flufenoxuron, fluopicolide, indoxacarb, ioxynil, mepanipyrim, prothioconazole, pyridalyl, thiacloprid and trifloxystrabin in or on certain products
http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2009:338:0105:0106:EN:PDF

O.J.E.U. L 60, 10th March 2010 – Corrigendum to Commission Regulation (EC) n° 822/2009 of 27 August 2009 amending Annexes II, III and IV to Regulation (EC) n° 396/2005 of the European Parliament and of the Council as regards maximum residue levels for azoxystrobin, atrazine, chlormequat, cyprodinil, dithiocarbamates, fludioxonil, fluroxypyr, indoxacarb, mandipropamid, potassium, tri-iodide, spirotetramat, tetraconazole, and thiram in or on certain products
http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2010:060:0026:0046:EN:PDF

O.J.E.U. L 68, 18th March 2010 – Commission Recommendation (2010/161/UE) of 17 March 2010 on the monitoring of perfluoroalkylated substances in food
http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2010:068:0022:0023:EN:PDF

PHARMACOLOGICALLY SUBSTANCES

O.J.E.U. L 15, 20th January 2010 – Commission Regulation (EU) n° 37/2010 of 22 December 2009 on pharmacologically active substances and their classification regarding maximum residue limits in foodstuffs of animal origin
http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2010:015:0001:0072:EN:PDF

PROTECTION OF GEOGRAPHICAL INDICATIONS / TRADITIONAL SPECIALITIES GUARANTEED

O.J.E.U. C 308, 18th December 2009 – Publication of an application pursuant to Article 6 (2) of Council Regulation (EC) n° 510/2006 on the protection of geographical indications of origin for agricultural products and foodstuffs [Mâconnais (fromage) (PDO)]
http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:C:2009:308:0047:0050:EN:PDF

O.J.E.U. C 308, 18th December 2009 – Publication of an application pursuant to Article 6 (2) of Council Regulation (EC) n° 510/2006 on the protection of geographical indications of origin for agricultural products and foodstuffs [Queso de Flor de Guia / Queso de Media Flor de Guia / Queso de Guia (fromage) (PDO)]
http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:C:2009:315:0018:0025:EN:PDF

O.J.E.U. C 320, 24th December 2009 – Publication of an application pursuant to Article 6 (2) of Council Regulation (EC) n° 510/2006 on the protection of geographical indications of origin for agricultural products and foodstuffs [Hessischer Handkäse, Hessischer Handkäs (fromage) (PGI)]
http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:C:2009:320:0047:0050:EN:PDF

O.J.E.U. L 8, 13rd January 2010 – Commission Regulation (EU) n° 20/2010 of 12 January 2010 entering a name in the register of protected designations of origin and protected geographical indications [Arzua-Ulloa (cheese) (PDO)]
http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:C:2010:008:0001:0002:EN:PDF

O.J.E.U. L 9, 14th January 2010 – Commission Regulation (EU) n° 24/2010 of 13 January 2010 entering a name in the register of protected designations of origin and protected geographical indications [Jihoceska Niva (cheese) (PGI)]
http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:C:2010:009:0001:0002:EN:PDF

O.J.E.U. L 10, 15th January 2010 – Commission Regulation (EU) n° 32/2010 of 14 January 2010 entering a name in the register of protected designations of origin and protected geographical indications [Jihoceska Zlata Niva (cheese) (PGI)]
http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:C:2010:010:0007:0008:EN:PDF

STANDARDS - REGULATIONS

O.J.E.U. C 20, 27th January 2010 – Publication of an application for registration pursuant to Article 8 (2) of Council Regulation (EC) n° 509/2006 on agricultural products and foodstuffs as traditional specialities guaranteed [Ovci Hrudkovy Syr – Salasnicky (cheese)]
http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:C:2010:020:0033:0037:EN:PDF

O.J.E.U. C 27, 3rd February 2010 – Publication of an amendment application pursuant to Article 6 (2) of COuncil Regulation (EC) n° 510/2006 on the protection of geographical indications and designations of origin for agricultural products and foodstuffs [Fourme d'Ambert or Fourme de Montbrison (cheese) (PDO)]
http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:C:2010:027:0008:0018:EN:PDF

O.J.E.U. C 27, 3rd February 2010 – Publication of an application in accordance with Article 6 (2) of Council Regulation (EC) n° 510/2006 on the protection of geographical indications and designations of origin for agricultural products and foodstuffs [Fourme de Montbrison (cheese) (PDO)]
http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:C:2010:027:0019:0022:EN:PDF

O.J.E.U. L 38, 11th February 2010 – Commission Regulation (EU) n° 121/2010 of 9 February 2010 entering a name in the register of protected designations of origin and protected geographical indications [Provolone del Monaco (cheese) (PDO)]
http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2010:038:0001:0002:EN:PDF

O.J.E.U. L 42, 19th February 2010 – Publication of an application pursuant to Article 6 (2) of Council Regulation (EC) n° 510/2006 on the protection of geographical indications and designations of origin for agricultural products and foodstuffs [Vastedda della Valle del Belice (cheese) (PDO)]
http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:C:2010:042:0016:0019:EN:PDF

NUTRITION CLAIMS

O.J.E.U. L 37, 10th February 2010 – Commission Regulation (EU) n° 116/2010 of 9 February 2010 amending Regulation (EC) n° 1924/2006 of the European Parliament and of the Council with regards to the list of nutrition claims
http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2010:037:0016:0018:EN:PDF

SWEETENERS

O.J.E.U. L 344, 23rd December 2009 – Commission Directive 2009/163/EU of 22 December 2009 amending Directive 94/35/EC of the European Parliament and of the Council on sweeteners for use in foodstuffs with regard to neotame
http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2009:344:0037:0040:EN:PDF

BOOKSHOP: LATEST PUBLICATIONS

The classification in alphabetic order of the first keyword allows you to consult the references according to your interests. The web site allows you to know more, or to order the book.

MEDIA

ATLAS R.M. **– Handbook of microbiological media, fourth edition** – CRC Press Edition – March 2010– ISBN 9781439804063– 2040 pages

http://www.crcpress.com

More than 7000 organised alphabetically microbiological media are presented in this new edition. The composition, the instructions for preparation, the commercial sources, the safety cautions and the uses in numerous fields are described for each medium.

TRANS FATTY ACID

MOSSOBA M.M.; KRAMER J. **– Official methods for determination of trans fat, second edition**–CRC Press Edition – January 2010– ISBN 9781893997721 – 63 pages

http://www.crcpress.com

This book describes the most common official methods (gas chromatography and infrared spectroscopy) for the determination of trans fatty acids. The authors review these methods (status and limitations) and discuss the numerous factors that may have an impact on accuracy and precision of these methods.

IN THE PRESS – ON THE WEB

Classification in alphabetical order of keywords

ANTIBIOTICS

Charm launches ROSA for streptomycin detection

http://www.laboratorytalk.com/news/chk/chk108.html

► Charm Sciences has launched the Charm Streptomycin Test to detect streptomycin in raw milk. This test uses the ROSA (Rapid One Step Assay) technology.

ENTEROBACTER SAKAZAKII

Chromogenic medium detects *Cronobacter* spp. strains

http://www.laboratorytalk.com/news/byx/byx122.html

► The ready-to-use ChromID Sakazaki Agar from Biomerieux allows the selective isolation and identification of *Cronobacter* spp. in powdered infant formula. This method detects *Cronobacter* spp. in 48 hours among 72 hours for ISO.

FLAVOURING

EFSA completes first safety assessments of smoke flavourings

http://www.efsa.europa.eu

► The European Food Safety Authority (EFSA) has examined 11 smoke flavourings used in the European Union, and based on this work, the European Commission will establish a list of smoke flavouring products authorised for use in foods. All of the smoke flavourings which have been evaluated by EFSA are currently , or have previously been, on the market in the EU.

LISTERIA MONOCYTOGENES

Listeria monocytogenes test improves food safety

http://www.laboratorytalk.com/news/byx/byx123.html

► Biomerieux has launched on the market a rapid and automated test (Vidas *Listeria monocytogenes* Xpress) for the screening, in 28 hours, of *Listeria monocytogenes* in food and environmental samples.

MEDIA

Lab M offers culture media for yeast isolation

http://www.laboratorytalk.com/news/lbm/lbm149.html

► Lab M offers a range of culture media for the isolation and identification of yeasts and moulds in milk and dairy products.

STANDARDISATION

Report of the 9th session of the Codex Committee on milk and milk products

http://www.codexalimentarius.net/download/report/736/al33_11e.pdf

► The Committee agreed to forward, for adoption/approval, to the Codex Alimentarius Commission, which will hold its 33rd session on 5-9 July 2010 in Geneva (Switzerland), the following propositions:
- the adoption at step 8 of the draft amendment to the standard for fermented milks (CODEX STAN 243-2003),
- the adoption of the revised listings in standards for milk and milk products,
- the adoption of the updated list of methods of analysis and sampling in Codex standard for milk and milk products,
- the revocation of 3 standards concerning cheeses (CODEX STAN 286-1978, CODEX STAN 287-1978, CODEX STAN 285-1978).

STAPHYLOCOCCI

Staph 24 agar identifies staphylococci in food

http://www.laboratorytalk.com/news/oxo/oxo404.html

► Oxoid has launched a Brilliance Staph 24 Agar medium, which allows the isolation and enumeration of coagulase-positive staphylococci in foods within 24 hours.

FORTHCOMING EVENTS

Classified in chronological order

MILK AND DAIRY PRODUCTS

17-21 May 2010 Montreal, Canada	IDF/ISO Analytical Week	http://www.idf-iso-analytical-week.org

FERMENTED MILK

7-9 June 2010 Tromsö, Norway	IDF Symposium on Science and Technology of Fermented Milk	http://www.idffer2010.no/

DAIRY PRODUCTS

9-11 June 2010 Tromsö, Norway	IDF Symposium on Microstructure of Dairy Products	http://www.idfmic2010.no/

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