NATIONAL CONSUMERS LEAGUE
1701 K Street, NW, Suite 1200 Washington, DC 20006
Main: (202) 835-3323 Fax: (202) 835-0747 www.nclnet.org

March 21, 2012

BY ELECTRONIC AND U.S. MAIL

Dr. Margaret A. Hamburg
Commissioner
Food and Drug Administration
10903 New Hampshire Ave.
Bldg. 1, Rm. 2217
Silver Spring, MD 20993
Mail Code: 2217/WO1

Re: Adulteration and Misbranding of "100%" Lemon Juice

Dear Commissioner Hamburg:

The National Consumers League (NCL)[1] urges the Food and Drug Administration (FDA) to take enforcement action against certain producers of "100%" lemon juice that is diluted with water. Such products violate Sections 402 and 403 of the Federal Food, Drug, and Cosmetic Act ("FDC Act"), 21 U.S.C. § 342(b) and 21 U.S.C. § 343(g), and 21 CFR §146.114(b).

Tests conducted for NCL by Eurofins, an internationally recognized independent third-party laboratory, confirm that the following brands of lemon juice from concentrate, all labeled as containing "100%" juice, are heavily diluted with water beyond what is necessary and appropriate to reconstitute the product. Citric acid, and in some cases sugars, are added to compensate for taste.

The laboratory tests conducted by Eurofins demonstrate that:[2]

• **"NaturaLemon 100% Lemon Juice from concentrate – Natural Strength," contains only about 35% lemon juice. See attached labels and test results (Appendix 1). The product is distributed by Sirob Imports, Inc., Lindenhurst, New York 11757.**

[1] The National Consumers League, the nation's oldest consumer advocacy organization, has maintained an interest in preventing economic adulteration of foods. See Brein, Courtney, (NCL Food Policy Director 2009-2011) "Uncovering Food Fraud: Assessing the Global Fallout of Economic Adulteration," Food and Drug Law Institute *Update*, July/August 2011.

[2] Test results are subject to a 20% margin of error.

• "Lira 100% Lemon Juice from concentrate" contains only about 25% lemon juice. See attached labels and test results (Appendix 2). The label states the product is packaged by Castella, Hauppauge, New York 11788.

• "Lemon Time Lemon Juice from concentrate" contains about only 15% lemon juice. The product states on its front label "Contains 100% Lemon Juice with added ingredients." See attached labels and test results (Appendix 3). The product is distributed by The Gourmet Factory, Inc. Hauppauge, New York 11749.

• "Pampa Lemon Juice from concentrate" contains only about 10% lemon juice. The product states in conjunction with the Nutrition Facts panel on the side of the bottle, where FDA regulations require percentage juice content to be disclosed, "Made with 100% Juice."[3] The label also includes the statement "Natural Strength." See attached labels and test results (Appendix 4). The product is distributed by Transnational Foods, Inc., Miami, Florida 33131, and states "Product of Peru."

Americans spend about $100 million annually on bottled lemon juice and certain producers of these brands are cheating consumers plain and simple. The FDC Act states that producers violate the law:

> 1) If any valuable constituent has been in whole or in part omitted; or
> 2) If any substance has been substituted wholly or in part therefore; or
> 3) If damage or inferiority has been concealed in any manner; or
> 4) If any substance has been added thereto, or mixed or packed therewith so as to . . . make it appear better or of greater value than it is.[4]

While any one of these actions violates the law, here all four criteria are met. The products tested omit requisite amounts of real lemon juice and substitute water, citric acid, and in some cases sugar. The cheating is concealed by labeling the products as "100%" lemon juice or simply "Lemon Juice from concentrate," and the producers make it appear that the products are of greater value than they really are.

FDA has issued a regulation 21 CFR § 146.114(b) that specifically limits the amount of water in lemon juice from concentrate to that which is necessary to reconstitute the product. The products named in this complaint clearly violate that regulation.

Last year the Government Accountability Office (GAO) issued a report entitled *FDA – Better Coordination Could Enhance Efforts to Address Economic Adulteration and Protect the Public Health.*[5] GAO recommended that the Commissioner provide written guidance to the Center for

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[3] 21 CFR § 101.30

[4] 21 U.S.C. § 342(b).

[5] Available at: http://www.gao.gov/products/GAO-12-46

Food Safety and Applied Nutrition and other offices on the means of addressing economic adulteration.[6] Stakeholders consulted by GAO:

> [S]uggested that FDA increase its regulatory and enforcement actions to address economic adulteration. These stakeholders said that public health risk should be FDA's priority in taking such actions, but many also told us [GAO] that FDA should pursue those who adulterate for economic gain, including instances that may not have a large negative public health impact. For example, some stakeholders suggested building criminal cases against those who adulterate for economic gain and prosecuting them swiftly and visibly to help ensure that companies are complying with law and regulations. In addition, these stakeholders said that, even when the adulteration has little health impact, such actions could help protect public health by deterring future instances, some of which may pose a significant health threat.[7]

According to a leading legal treatise:

> Fruit juice-derived products are the paradigm examples of economic adulteration because there is a direct economic correlation between lower production costs of undisclosed, cheapened product mixing and the seller's higher profit margin . . . The multi-year, million – dollar criminal and civil punishments of the Beech-Nut juice company and its executives is the worst modern example of criminal fraud on families . . .[8]

To illustrate the extent of the fraud in this case, the label of the NaturalLemon states: "Two tablespoons of NaturalLemon Juice equals the juice of an average size lemon." FDA-mandated information regarding the serving size and number of servings per container indicates that the bottle contains the equivalent of about 31 two tablespoon servings.[9] The product label claims that a two tablespoon serving provides the juice found in one average size lemon. If the product were 100% lemon juice as claimed, it would take about 30 lemons to make the juice contained in the bottle. But NCL's independent laboratory tests indicate that NaturaLemon is only about 35% lemon juice. Thus, instead of requiring 30 lemons to make the juice in the one quart bottle, the producer uses only about 10.

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[6] *Id*. at p. 23.

[7] *Id*, at p. 20.

[8] O'Reilly, James T., *Food and Drug Administration*, Vo. 1, §10:17, citing *U.S. v. Beech-Nut Nutrition Corporation,* 871 F.2d 1181 (2nd Cir. 1989)(after conviction was reversed on procedural grounds, senior executives pled guilty and served jail terms while the corporation paid millions in penalties and fines, and was purchased by new owners.

[9] The NaturaLemon Nutrition Facts label says the 1 quart bottle contains 189 1 teaspoon servings which equals 31 six teaspoon servings (six teaspoon equals 2 tablespoons), which according to the product label, equals the juice in one average sized lemon.

The economic motivation to cheat is even clearer considering variances in the availability of fresh lemons due to weather and various other marketplace factors. A report from the U.S. Department of Agriculture states:

> U.S. lemon production is forecast to experience the biggest year-over-year decline amongst all citrus crops. NASS forecasts the 2011/12 U.S. lemon crop at 832,000 tons, a reduction of more than 11 percent compared to last year and the smallest crop since 2007/08 [table omitted]. Declines were particularly pronounced in Arizona, where production is forecast down 68 percent from 2010/11 due to damage from a major freeze that struck the southern part of the State last winter. In California, production is forecast at 800,000 tons, down 5 percent from last year. Harvest is currently underway in that State's desert region. AMS shipment data show domestic lemon shipments up 9 percent compared to this time last season. The pace of lemon imports has been much swifter, up 30 percent compared to last season, likely due to the expectation of a smaller domestic crop in the face of sustained consumer demand. Despite the forecast reduction in the U.S. crop, prices for all lemons have had a sluggish start to the season, down more than 20 percent from this time last year. Prices are expected to rise later in the year, however, due to the reduction in domestic supplies.[10]

Given such fluctuations in the availability of fresh lemons and wholesale prices, it is clear that some companies have a motivation to cheat.

Lemon juice is a staple in the American diet. More than 5000 recipes call for the use of lemon juice on just one cooking World Wide Web site alone.[11] Lemon juice plays many important roles in the diet. It is recommended by USDA as a substitute for salt for consumers who are trying to reduce their sodium consumption and risk of high blood pressure.[12] Lemon juice is called for as an important ingredient in recipes designed for the Supplemental Nutrition Assistance Program (SNAP – formerly known as Food Stamps).[13] It is also called for in recipes as part of the "5 a day" pre-school program for children.[14]

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[10] Perez, Agnes, A report from the Economic Research Service U.S. Department of Agriculture, Fruit and Tree Nut Outlook, 2011/12, available at: http://www.ers.usda.gov/publications/fts/2011/11Nov/FTS-350.pdf

[11] http://ingredients.recipeland.com/lemon-juice_7842

[12] http://www.fns.usda.gov/fdd/facts/nutrition/SodiumFactSheet.pdf

[13] For an example of SNAP-Ed recipes using lemon juice, see: http://www.nal.usda.gov/snap/SNAP-EdConnectionBulletin_Spring2011.pdf

[14] See: http://healthymeals.nal.usda.gov/hsmrs/5_a_Day_Preschool/CD%205%20A%20Day%20and%20Cooking%20and%20Tasting%20Chapter.pdf

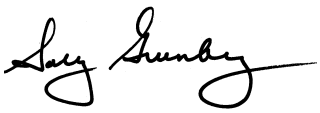
Lemon juice is also recommended for use in a "pregnancy safe" non-alcoholic cocktail recipe.[15] Once a fruit juice has been adulterated, it is unclear which substances may be contained in the bottle and whether they are safe for pregnant women. As GAO stated:

> Although the primary driver of economic adulteration is financial gain rather than causing harm, it can pose a variety of public health risks. . . [Even] economic adulteration that poses no known health risk may expose a vulnerability in the supply chain – the network of handlers, suppliers, and middlemen involved in the production of foods and drugs – that could be further exploited in the future with serious consequences.[16]

Cheating in the $100 million a year lemon juice market is plainly illegal. But in addition to its obligation to enforce the law, FDA also has an obligation to ensure that a basic consumer staple that plays so many roles in the American diet is what it purports to be. Without that assurance, unscrupulous companies will continue to bilk consumers for millions, and the public with lose faith in the integrity of the food supply. Ultimately, if enforcement action is not taken, FDA's creditability as a regulatory agency itself will suffer along with the pocketbooks, and possibly the health, of American consumers.

For these reasons, we urge the FDA to act promptly and use the full breadth of its enforcement authority to stop what are clear violations of the law.

Sincerely,



Sally Greenberg
Executive Director

cc

Mike Taylor
Deputy Commissioner for Foods
Food and Drug Administration
mike.taylor@fda.hhs.gov

Mike Landa
Director, Center for Food Safety and Applied Nutrition
Food and Drug Administration
michael.landa@fda.hhs.gov

[15] http://www.babycenter.com/0_pregnancy-safe-cocktail-recipes-virgin-bloody-mary_8658.bc

[16] See GAO report, 12-46 at p. 7.

Rick Jensen, Chief
Inspection and Compliance Branch
California Food and Agriculture Department
rjensen@cdfa.ca.gov

Ed Foster, Director
Citrus, Fruit, and Vegetable Standardization
Arizona Department of Agriculture
efoster@azda.gov

Charles Beasley, Chief
Bureau of Inspection
Division of Fruits and Vegetables
Florida Agriculture and Consumer Services Department
Charles.Beasley@freshfromflorida.com

APPENDIX 1

NaturaLemon

K

100% Lemon Juice

FROM CONCENTRATE

Recipes on Back of Label

NET. 32 FL. OZ. (1 QT.) 946 mL

Nutrition Facts

Serving Size 1 tsp (5ml)
Servings Per Container About 189

Amount Per Serving	
Calories 0	
	% Daily Value*
Total Fat 0g	**0%**
Trans Fat 0g	
Sodium 0mg	**0%**
Total Carbohydrate 0g	**0%**
Sugars 0g	
Protein 0g	**0%**

Vitamin C 2%

Not a significant source of saturated fat, cholesterol, fiber, dietary fiber, vitamin A. calcium, and iron.

*Percent Daily Values are based on a 2,000 calorie diet.

INGREDIENTS: WATER, LEMON, JUICE CONCENTRATE, 1/40 OF 1% SODIUM BENZOATE AND 1/40 OF 1% SODIUM BISULFITE AS PRESERVATIVE, LEMON OIL.

Distributed by
SIROB IMPORTS, INC.
LINDENHURST, NY 11757
http://www.boborisfoods.com

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KEEP REFRIGERATED AFTER OPI

SHAKE WELL BEFORE USIN(
ALL FRUIT JUICES WILL SETT
NATURAL STRENGTH
DO NOT DILUTE

Two Tablespoons of NATURALEMON Juic equals the juice of one average size lemor For use in cocktails, baking, broiling, salad fish, seafood and other lemon uses.

OLD FASHIONED LEMONADE (1/2 GALL(
1 CUP OF LEMON JUICE
1/2 CUP OF SUGAR
ADD ICE CUBES
FILL WITH WATER (APPROX. 5 CUPS)
Mix in 2 quart pitcher

LOW CALORIE DRESSING
1 CAN (10-1/2 OUNCES) CONDENSED TOMA
1 CUP COTTAGE CHEESE
1 TABLESPOON SWEET PICKLE RELISH
2 TABLESPOONS LEMON JUICE
Blend all ingredients: chill, stir well and serve over crisp sal Yield: 2 cups.

NOV 2 5 2012

eurofins | analytics

CANCELS AND REPLACES*

Sample code Nr.	**E4-370-02604625**	**Date**	**11/01/2012**	**Page 1/3**
Analytical Report Nr.	**AR-12-AA-000703-04 / E4-370-02604625**			

(*this report cancels and replaces the previous one, numbered AR-12-AA-000703-03/E4-370-02604625 dated 10/01/2012 which must be destroyed)

NATIONAL CONSUMERS LEAGUE
For the attention of **Ms Sally Greenberg**
1701 K Street, NW
Suite 1200
DC 20006 Washington
Etats Unis
Fax 001 202-835-0747

Copy to : Ms Green (teresag@nclnet.org)

Technical contact for your orders : Marie Jaillais

Our reference :	E4-370-02604625 / AR-12-AA-000703-04	**Type :**	EX
Client reference :	**NaturaLemon**		
Sample described as :	2 32 ounce bottles of NaturaLemon 100% Lemon Juice from concentrate		
Conditioning :	946ml		
Sample reception date :	09/12/2011	**Analysis starting date :**	15/12/2011
Sampling/Transport :	FedEx		
Analyses requested :	PAC1+: Detection of addition of citric acid or sugars PAJ5O: Optimum compositional analysis AA03P: 1H-NMR profiling of fruit juices AA16C: Expert Consulting Service (/hour)		
Best before	09/09/12		

		Results (uncertainty)	Guidelines
AA03P	**AA 1H-NMR profiling of fruit juices Method : Internal method, 1H-NMR**		
	NMR profiling test	See Interpretation	

Isotopic analyses		Results (uncertainty)	Guidelines
A4009	**AA 2H-IRMS by pyrolysis Method : Internal method, EA-IRMS**		
	(D/H) (citrate/SMOW)	150.4 (± 0.5) ppm	
	Delta D (/V.SMOW)	-34 (± 3) ‰	
A4005	**AA 13C-IRMS Method : AOAC 2004.01**		
(a)	Delta C13 citric acid (/V.PDB)	-19.1 (± 0.5) ‰	
(a)	Delta C13 malic acid (/V.PDB)	-23.5 (± 0.5) ‰	
	Delta C13 pulp (/V.PDB)	-26.7 (± 0.3) ‰	
(a)	Delta C13 sugars (/V.PDB)	-24.9 (± 0.5) ‰	

Compositional analyses		Results (uncertainty)	Guidelines
A7059	**AA Brix Method : IFU**		
(a)	Brix	3.9 (± 0.2) °Brix	
(a)	Brix, corrected for acidity	4.5 (± 0.2) °Brix	
(a)	Ratio	1.4 (± 0.9)	
(a)	Soluble solids (from refrac.)	45.4 g/l	
A7018	**AA Fructose (enzymatic method) Method : IFU**		
(a)	Fructose (enzymatic)	2.0 (± 0.8) g/l	3 - 11 (AIJN)
A7017	**AA Glucose (enzym. method) Method : IFU**		
(a)	Glucose (enzymatic)	2.3 (± 0.8) g/l	3 - 12 (AIJN)
A7019	**AA Sucrose (enzym. method) Method : IFU**		
(a)	Sucrose (enzymatic)	<2 g/l	<= 7 (AIJN)
AAC10	**AA Calculation on sugars**		
	% sucrose	0 %	
	Glucose / Fructose (enz)	1.17	0.95 - 1.3 (AIJN)
	Sugar free extract (enzymatic)	41.1 g/l	65 - 82 (AIJN)
	Sum of sugars (enzymatic)	4.3 g/l	
A7489	**AA Sorbitol (IC) Method : Internal method, IC**		
	Sorbitol (IC)	<10 mg/l	.
A7021	**AA Total acidity Method : IFU**		
(a)	Titratable acidity (pH 8.1)	495.7 (± 24.8) meq/l	700 - 970 (AIJN)

Eurofins Analytics France
Rue Pierre Adolphe Bobierre
BP 42301
F-44323 Nantes Cedex 3
FRANCE

Phone +33 2 51 83 21 00
Fax +33 2 51 83 21 11
SampleLoginFR@eurofins.com
www.eurofins.fr

Compositional analyses			Results (uncertainty)	Guidelines
A7021	**AA**	**Total acidity Method : IFU**		
(a)	Titratable acidity (pH 7.0)		486.3 (± 24.3) meq/l	
(a)	Acidity exp. citric acid (pH 8.1)		31.7 (± 1.6) g/l	
(a)	Total acid. expr. as Citric ac. monohydr. (pH 8.1)		34.7 (± 1.7) g/l	
(a)	Acidity exp. in tartaric acid (pH 7.0)		36.5 (± 1.8) g/l	
(a)	Acidity exp.in malic acid (pH 8.1)		33.2 (± 1.7) g/l	
A7003	**AA**	**Citric acid Method : IFU**		
(a)	Citric acid		31.33 (± 1.26) g/l	45 - 63 (AIJN)
A7004	**AA**	**D-Isocitric acid Method : IFU**		
(a)	D-isocitric acid		116.6 (± 13.2) mg/l	230 - 500 (AIJN)
A7012	**AA**	**L-malic acid Method : IFU**		
(a)	L-malic acid		1.68 (± 0.27) g/l	1 - 7.5 (AIJN)
A7051	**AA**	**pH Method : IFU**		
(a)	pH		2.44 (± 0.10)	
AAC11	**AA**	**Calculation on acids**		
	Citric acid/Isocitric acid		269	<= 200 (AIJN)
A7014	**AA**	**Flavanone glycosides (6 param.) Method : IFU**		
(a)	Hesperidin		117 (± 12) mg/l	200 - 800 (AIJN) (For cloudy juices, lower values for classical juices)
(a)	Narirutin		<10 mg/l	
(a)	Naringin		<10 mg/l	<= 10 (AIJN)
(a)	Eriocitrin		87.7 (± 13.2) mg/l	
(a)	Neoeriocitrin		<10 mg/l	
(a)	Neohesperidin		<10 mg/l	
A7016	**AA**	**Formol index Method : IFU**		
(a)	Formol number (ml NaOH 0.1N)		4.2 (± 0.4) /100 ml	13 - 26 (AIJN)

Minerals - Oligoelements			Results (uncertainty)	Guidelines
A6022	**AA**	**Sodium Method : IFU**		
(a)	Sodium (Na)		327 (± 34) mg/l	<= 30 (AIJN)
A6023	**AA**	**Potassium Method : IFU**		
(a)	Potassium (K)		462 (± 32) mg/l	1100 - 2000 (AIJN)
A6025	**AA**	**Magnesium Method : IFU**		
(a)	Magnesium (Mg)		34 (± 3) mg/l	70 - 120 (AIJN)
A6024	**AA**	**Calcium (AAS) Method : IFU**		
(a)	Calcium (Ca)		31 (± 4) mg/l	45 - 160 (AIJN)
A7076	**AA**	**Phosphorus Method : IFU**		
(a)	Phosphate		87 (± 11) mg/l	
(a)	Phosphorus		28 (± 3) mg/l	80 - 150 (AIJN)
AAC21	**AA**	**Calculation on minerals**		
	Potassium/Magnesium		13	

Oligosaccharides profile- Qual. GC test acc. Low			Results (uncertainty)	Guidelines
A7049	**AA**	**Oligosaccharide profile Method : Internal method, GC-FID**		
	Presence of invert sugar peaks		Not sign.	
	Presence of inulin peaks		Negative	
	Presence of isomaltose peaks		Negative	
	Presence of maltose peaks		Negative	

Statement of compliance of measured parameters (not covered by the accreditation)		
	(Based on available reference values)	Not compliant

CONCLUSION (not covered by the accreditation)

As judged by the results of the analyses performed, and in comparison with industry standards, scientific litterature, and values at our disposal :

The overall analytical profile is untypical for lemon juice:
- The NMR profiling test annexed to this report reveals many peculiarities and is not in agreement with 100% lemon juice.
- The isotopic analyses are showing a large addition of citric acid (coming from the fermentation of a C4 plant source such as cane or maize).
- The compositional analyses confirm that the fruit content is far below 100% and that citric acid is added. Based on the observed analytical figures the most probable lemon juice content can be estimated around 35%.

We have therefore classified this product as not being in conformity with the description provided.

Eurofins Analytics France
Rue Pierre Adolphe Bobierre
BP 42301
F-44323 Nantes Cedex 3
FRANCE

Phone +33 2 51 83 21 00
Fax +33 2 51 83 21 11
SampleLoginFR@eurofins.com
www.eurofins.fr

Sample code Nr.	**E4-370-02604625**	**Date**	**11/01/2012**	**Page 3/3**
Analytical Report Nr.	**AR-12-AA-000703-04 / E4-370-02604625**			

SIGNATURE

Eric Jamin
Analytical Services Manager

Analytical Services Manager

Report electronically validated by Eric Jamin

EXPLANATORY NOTE

This document can only be reproduced in full ; it only concerns the submitted sample.
Results have been obtained and reported in accordance with our general sales conditions available on request.
When declaring compliance or non-compliance, the uncertainty associated with the result has been added or subtracted in order to obtain a result that can be compared to regulatory limits or specifications. The uncertainty has not been taken into account for standards that already include measurement uncertainty.
The tests are identified by a five-digit code, their description is available on request.

The tests identified by the two letters code AA are performed in laboratory Eurofins Analytics France. The symbol (a) identifies the tests performed by this laboratory under accreditation NF/EN ISO/IEC 17025:2005 Cofrac 1-0287.

Eurofins Analytics France
Rue Pierre Adolphe Bobierre
BP 42301
F-44323 Nantes Cedex 3
FRANCE

Phone +33 2 51 83 21 00
Fax +33 2 51 83 21 11
SampleLoginFR@eurofins.com
www.eurofins.fr

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APE 743 B

NMR Sample Profile

02604625

Measuring Date: 15-Dec-2011 09:10:01
Reporting Date: 15-Dec-2011 10:14:03, Version 2.0.8, 7 pages

Results Summary

Type of Analysis	Analysis ID	Result	Status
Classification Models			
Fruit-Type Model	1001/0690	?[1]	–
Lemon: Product-Type	1007/0690	?[2]	–
Lemon: Origin	1009/0690	?[3]	–
Verification Models			
Univariate Verification	2011/0908	Off-Model	●
Multivariate Verification	2011/0908	Off-Model	●
Targeted Analysis			
Quantification (A.I.J.N.)	Q	–	●
Calculated Figures (A.I.J.N.)	CF	–	●

1 = Ambigous Result, class "Lemon" has highest p-value.
2 = Ambigous Result, class "Lemon, Concentrate" has highest p-value.
3 = Ambigous Result, class "Lemon from Argentina" has highest p-value.

Please note, that SGF-Profiling™ is a screening method with extensive inhouse validation, but it is not an official reference method. Quantitation and regression analyses are regularly validated taking part in official ring tests.

Silberstreifen
76287 Rheinstetten, Germany
Tel. +49(0721)5161-0
Fax. +49(0721)517101
nmr@bruker-biospin.com
www.bruker-biospin.com

Geschäftsführer:
Jörg Laukien
Dr. Bernd Gewiese
Dr. Gerhard Roth
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USt-Ident.-Nr DE 143 239 759
WEEE-Reg.-Nr. DE 92 533 205
Steuer-Nr. 311-903-8907

General Remarks

Classification Models

The aim of a classification model is to assign a specific sample to its most probable group. The group is chosen from a list of proposed groups. This assignment does not guarantee that the sample is exclusively a member of this group.

The 3D-discrimination diagram shows available groups (ellipsoids) in the projection space of the NMR-profiles with maximized discrimination. The star represents the actual sample.

In most cases these models are discriminating in multidimensional spaces. For such models human perceptibility and options for graphical representation are limited. Misperception is possible in certain cases. The mathematically correct probability for any group membership is represented by p-values which are calculated in the complete space. Typically values higher than 0.05 or 0.01 will accept the hypothesis of group membership. Expert interpretation is necessary before deducing any conclusions.

Only groups listed in the respective models can be considered. Therefore models (especially models of origin) are not applicable for blends and origins which are not listed in the corresponding model.

Verification Models

Verification models are non-targeted analyses comparing the whole NMR-Profile of a specific sample with one corresponding group of reference spectra (database). All spectra data points are taken into account irrespective of whether the signals are caused by already identified molecules or not.

There are different possible reasons for any deviation from the group of reference spectra. If there are detected deviations, this does not automatically mean, that the sample is adulterated. Expert interpretation is necessary before deducing any conclusions.

In some cases for a single spectrum different models are calculated and respective results are proposed. Correct interpretation of the results implies choosing the most appropriate one based on the context and background of the sample.

In the univariate analysis, the NMR spectrum is checked for any unusual low or high signal intensities for a given sample, while taking into account the natural variability of a respective reference group. Multivariate models also take into account the relation between different signals in the NMR spectrum.

Quantification Results / Calculated Values

Obtained quantification levels of parameters are compared to AIJN-CoP-guide values if available and consistency is indicated by an extra traffic light flag. Depending on the type of juice, different compounds are quantifiable. Quantitative values are compared to the SGF-Profiling database if the number of reference values in there is sufficiently large (visualised by distribution). Expert interpretation is necessary before deducing any conclusions.

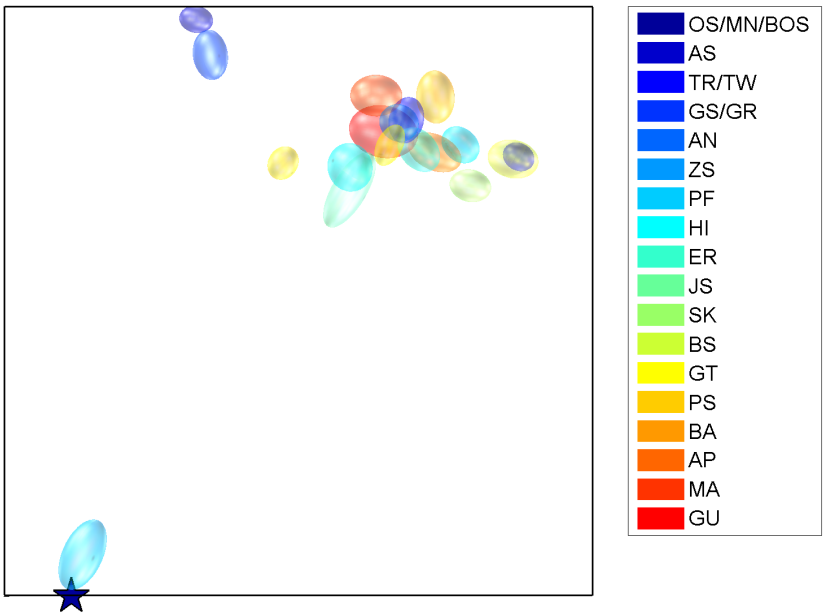
Fruit-Type Model

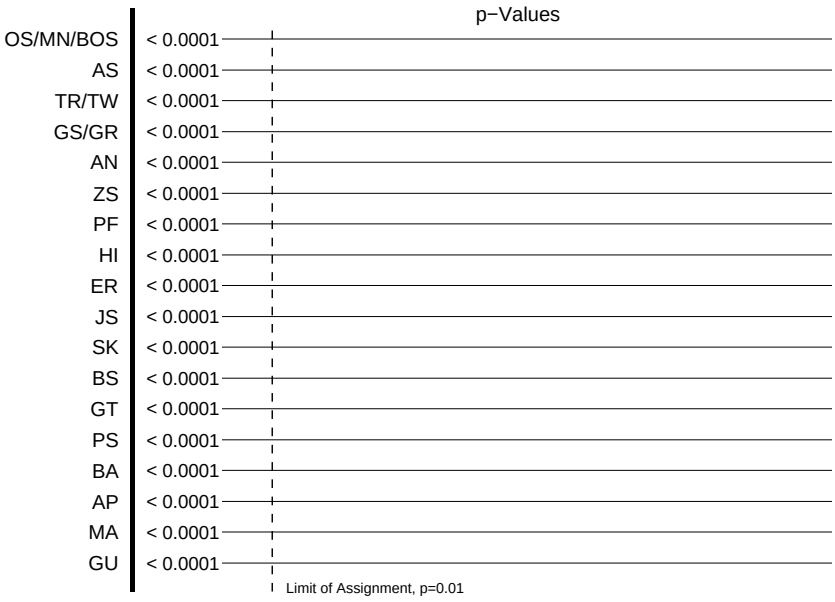
(Classification, Analysis ID: 1001/0690)

Ambigous Result - class "Lemon" has highest p-value.

Following classes are available:

OS/MN/BOS = Orange/Mandarin/Blood-Orange, AS = Apple, TR/TW = Grape, GS/GR = Grapefruit, AN = Pineapple, ZS = Lemon, PF = Peach, HI = Raspberry, ER = Strawberry, JS = Black Currant, SK = Sour Cherry, BS = Pear, GT = Pomegranate, PS = Passion Fruit, BA = Banana, AP = Apricot, MA = Mango, GU = Guava





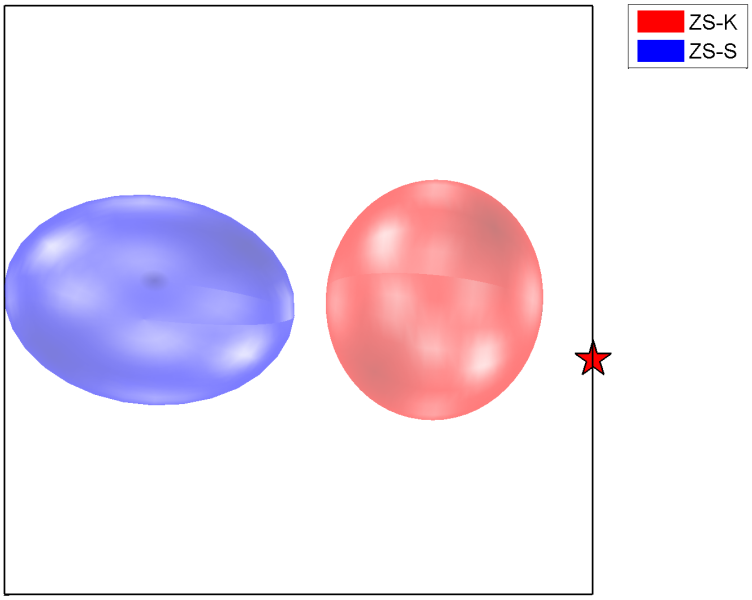
Lemon: Product-Type

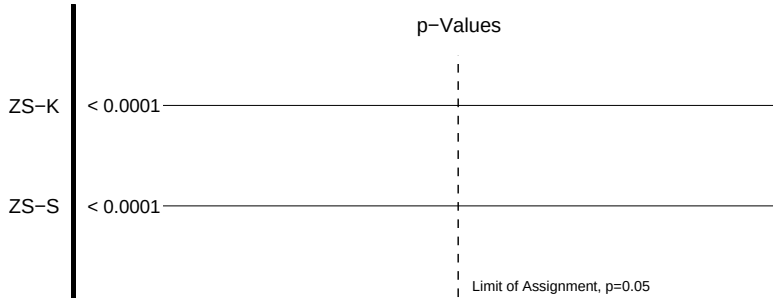
(Classification, Analysis ID: 1007/0690)

Ambigous Result - class "Lemon, Concentrate" has highest p-value.

Following classes are available:

ZS-K = Lemon, Concentrate, ZS-S = Lemon, Direct Juice





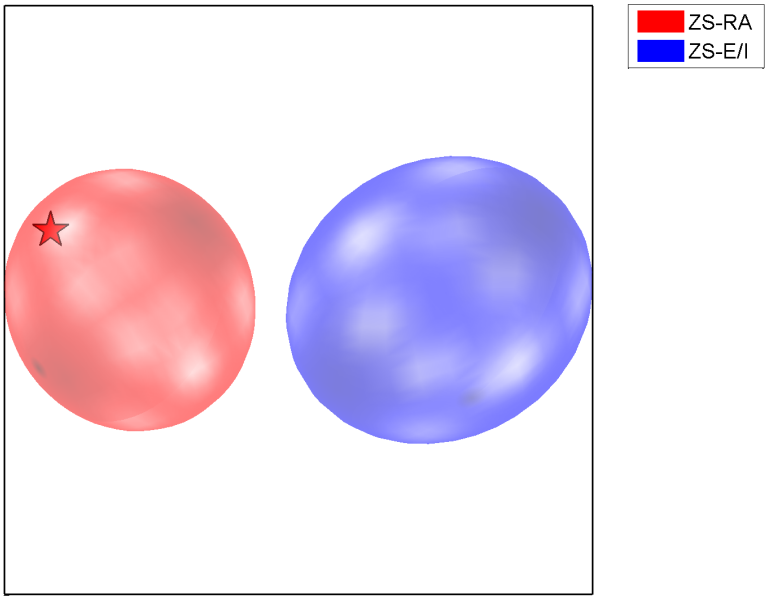
Lemon: Origin

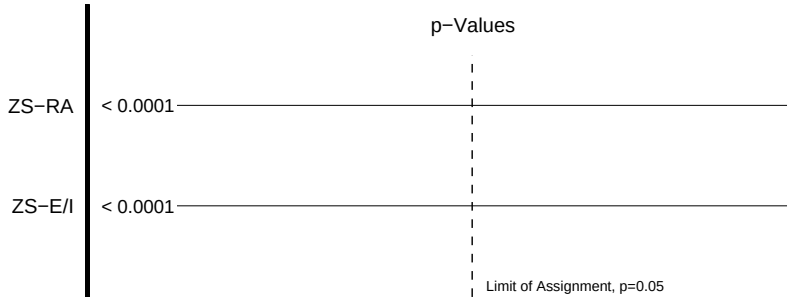
(Classification, Analysis ID: 1009/0690)

Ambigous Result - class "Lemon from Argentina" has highest p-value.

Following classes are available:

ZS-RA = Lemon from Argentina, ZS-E/I = Lemon from Spain/Italy





Verification Models

Applied Model: Lemon

Univariate Verification

(Verification, Analysis ID: 2011/0908)

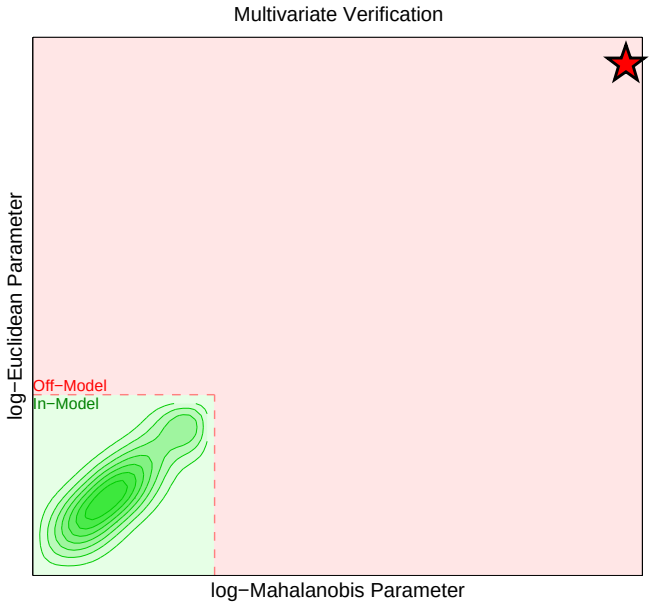
Result: Deviating signals were found at following chemical shifts:

4.316^{up} 5.543^{up} 6.547^{up} 7.492^{up} 7.498^{up} 7.510^{up} 7.516^{up} 7.522^{up} 7.527^{up} 7.533^{up} 7.539^{up}
7.545^{up} 7.551^{up} 7.557^{up} 7.563^{up} 7.569^{up} 7.574^{up} 7.580^{up} 7.657^{up} 7.663^{up} 7.668^{up} 7.674^{up}
7.680^{up} 7.686^{up} 7.692^{up} 7.698^{up} 7.704^{up} 7.709^{up} 7.715^{up} 7.727^{up} 7.745^{up} 7.809^{up} 7.815^{up}
7.833^{up} 7.991^{up} 7.997^{up} 8.003^{up} 8.009^{up} 8.015^{up} 8.021^{up} 8.026^{up} 8.032^{up} 8.038^{up} 8.044^{up}
8.050^{up} 8.056^{up} 8.062^{up} 8.068^{up} 8.220^{up} 2.455_{low} 5.396_{low}

Multivariate Verification

(Verification, Analysis ID: 2011/0908)

Result: Sample was classified as Off-Model in multivariate verification.



Targeted Analysis

In the following tables the results of the quantitative analysis are given and compared to the A.I.J.N. reference ranges (if available). For concentrated products, results are expressed for juice strength.

- consistent with A.I.J.N.
- outside the A.I.J.N. limits (± 10%)
- outside the A.I.J.N. limits
- no A.I.J.N. reference range

N/Q: Not quantified (not detected or insufficient signal assignment)

Quantification Results:

(Analysis-ID: Q)

Compound	Result	Unit	A.I.J.N. (Lemon) Flag	min	max	SGF-Profiling n =413
5-hydroxymethylfurfural	N/Q	mg/l		-	20	not detectable
D-galacturonic acid	N/Q	mg/l		-	-	0 138
alanine	44	mg/l	↓	80	260	97 275
benzaldehyde	N/Q	mg/l		-	-	not detectable
benzoic acid	1013	mg/l		-	-	not detectable
citric acid	29.5	g/l	↓	45.0	63.0	42.0 68.8
ethanol	N/Q	mg/l		-	3000	0 391
formic acid	N/Q	mg/l		-	-	0 14
fructose	1.9	g/l	↓	3.0	11.0	3.2 10.1
glucose	2.2	g/l	↓	3.0	12.0	3.3 10.9
isocitric acid	N/Q	mg/l	↓	230	500	222 631
lactic acid	N/Q	mg/l		-	200	0 38
malic acid	1.6	g/l		1.0	7.5	1.2 7.8
methanol	18	mg/l		-	-	42 136
phlorin	28	mg/l		-	-	20 261
sorbic acid	N/Q	mg/l		-	-	not detectable
succinic acid	8	mg/l		-	-	11 64
sucrose	N/Q	g/l		-	7.0	0.43 6.4

Calculated Values:

Figure	Result	Unit	A.I.J.N. (Lemon) Flag	min	max	SGF-Profiling n =413
Glucose/Fructose ratio	1.17	-		0.95	1.30	0.88 1.47
% Sucrose	0	%		-	-	3 37
Total Sugar	4.1	g/l		-	-	8.4 25.5

APPENDIX 2


Natural Strength
Shake Well
Refrigerate After Opening
7 50144 57005 0
Packaged by:
CASTELLA
Hauppauge, NY 11788
www.castella.com
LIRA™
100%
LEMON
JUICE
From Concentrate
NET 32 FL OZ (1QT.) 946 mL
100% JUICE
Nutrition Facts
Serving Size 1 Tsp. (5 mL)
Servings Per Container About 189
Amount Per Serving
Calories 0 Calories from Fat 0
% Daily Value*
Total Fat 0g 0%
Sat. Fat 0g 0%
Trans Fat 0g 0%
Cholesterol 0g 0%
Sodium 0mg 0%
Total Carb. 0g 0%
Dietary Fiber 0g 0%
Sugars 0g
Protein 0g
Vitamin A 0% • Vitamin C 2% • Calcium 0% • Iron 0%
Not a significant source of calories from fat, saturated fat, trans fat, cholesterol, dietary fiber, vitamin A, calcium and iron.
*Percent Daily Values (DV) are based on a 2,000 calorie diet.
Ingredients: Lemon Juice from Concentrate (Water, Lemon Juice Concentrate), Citric Acid, Polysorbate 80, Lemon Oil, Sodium Benzoate & Sodium Bisulfite (Preservatives) and Propylene Glycol.

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Sample code Nr.	**E4-370-02610144**	**Date**	**26/01/2012**	**Page 1/3**
Analytical Report Nr.	**AR-12-AA-008070-01 / E4-370-02610144**			

NATIONAL CONSUMERS LEAGUE
For the attention of **Ms Teresa Green**
1701 K Street, NW
Suite 1200
DC 20006 Washington
Etats Unis
Fax 001 202-835-0747
Email teresag@nclnet.org

Technical contact for your orders : Marie Jaillais

Our reference :	E4-370-02610144 / AR-12-AA-008070-01	**Type :**	EX
Client reference :	**Lira**		
Sample described as :	2 32 ounce bottles of Lira Lemon Juice		
Conditioning :	1L		
Sample reception date :	02/01/2012	**Analysis starting date :**	05/01/2012
Sampling/Transport :	FedEx		
Analyses requested :	PAJ5O: Optimum compositional analysis PAC1+: Detection of addition of citric acid or sugars AA03P: 1H-NMR profiling of fruit juices AA16C: Expert Consulting Service (/hour)		

		Results (uncertainty)	Guidelines
AA03P	**AA 1H-NMR profiling of fruit juices Method : Internal method, 1H-NMR**		
	NMR profiling test	See Interpretation	

Isotopic analyses		Results (uncertainty)	Guidelines
A4009	**AA 2H-IRMS by pyrolysis Method : Internal method, EA-IRMS**		
	Delta D Citrate (/ V.SMOW)	-52.3 (± 6.0) ‰	
A4005	**AA 13C-IRMS Method : Internal method, EA-IRMS**		
(a)	Delta C13 citric acid (/V.PDB)	-26.5 (± 0.5) ‰	
(a)	Delta C13 malic acid (/V.PDB)	-25.8 (± 0.5) ‰	
	Delta C13 pulp (/V.PDB)	-28.0 (± 0.3) ‰	
(a)	Delta C13 sugars (/V.PDB)	-26.4 (± 0.5) ‰	

Compositional analyses		Results (uncertainty)	Guidelines
A7059	**AA Brix Method : IFU**		
(a)	Brix	4.7 (± 0.2) °Brix	
(a)	Brix, corrected for acidity	5.6 (± 0.2) °Brix	
(a)	Ratio	1.3 (± 0.9)	
(a)	Soluble solids (from refrac.)	57.1 g/l	
A7018	**AA Fructose (enzymatic method) Method : IFU**		
(a)	Fructose (enzymatic)	1.4 (± 0.8) g/l	3 - 11 (AIJN)
A7017	**AA Glucose (enzym. method) Method : IFU**		
(a)	Glucose (enzymatic)	1.6 (± 0.8) g/l	3 - 12 (AIJN)
A7019	**AA Sucrose (enzym. method) Method : IFU**		
(a)	Sucrose (enzymatic)	<1 g/l	<= 7 (AIJN)
AAC10	**AA Calculation on sugars**		
	% sucrose	0 %	
	Glucose / Fructose (enz)	1.14	0.95 - 1.3 (AIJN)
	Sugar free extract (enzymatic)	54.1 g/l	65 - 82 (AIJN)
	Sum of sugars (enzymatic)	3.0 g/l	
A7489	**AA Sorbitol (IC) Method : Internal method, IC**		
	Sorbitol (IC)	<10 mg/l	.
A7021	**AA Total acidity Method : IFU**		
(a)	Titratable acidity (pH 8.1)	705.1 (± 35.3) meq/l	700-970 5AIJN)
(a)	Titratable acidity (pH 7.0)	693.9 (± 34.7) meq/l	
(a)	Acidity exp. citric acid (pH 8.1)	45.1 (± 2.3) g/l	44.8-62.0 (AIJN)
(a)	Total acid. expr. as Citric ac. monohydr. (pH 8.1)	49.3 (± 2.5) g/l	
(a)	Acidity exp. in tartaric acid (pH 7.0)	52.0 (± 2.6) g/l	

Eurofins Analytics France
Rue Pierre Adolphe Bobierre
BP 42301
F-44323 Nantes Cedex 3
FRANCE

Phone +33 2 51 83 21 00
Fax +33 2 51 83 21 11
SampleLoginFR@eurofins.com
www.eurofins.fr

Compositional analyses			Results (uncertainty)	Guidelines
A7021	**AA**	**Total acidity Method : IFU**		
(a)	Acidity exp.in malic acid (pH 8.1)		47.2 (± 2.4) g/l	
A7003	**AA**	**Citric acid Method : IFU**		
(a)	Citric acid		46.15 (± 1.84) g/l	45 - 63 (AIJN)
A7004	**AA**	**D-Isocitric acid Method : IFU**		
(a)	D-isocitric acid		57.0 (± 7.0) mg/l	230 - 500 (AIJN)
A7012	**AA**	**L-malic acid Method : IFU**		
(a)	L-malic acid		1.45 (± 0.25) g/l	1 - 7.5 (AIJN)
A7051	**AA**	**pH Method : IFU**		
(a)	pH		2.10 (± 0.10)	
AAC11	**AA**	**Calculation on acids**		
	Citric acid/Isocitric acid		810	<= 200 (AIJN)
A7014	**AA**	**Flavanone glycosides (6 param.) Method : IFU**		
(a)	Hesperidin		84.6 (± 8.5) mg/l	200 - 800 (AIJN) (For cloudy juices, lower values for classical juices)
(a)	Narirutin		<10 mg/l	
(a)	Naringin		<10 mg/l	nd (AIJN)
(a)	Eriocitrin		47.0 (± 7.1) mg/l	
(a)	Neoeriocitrin		<10 mg/l	
(a)	Neohesperidin		<10 mg/l	
A7016	**AA**	**Formol index Method : IFU**		
(a)	Formol number (ml NaOH 0.1N)		4.5 (± 0.5) /100 ml	13 - 26 (AIJN)

Minerals - Oligoelements			Results (uncertainty)	Guidelines
A6022	**AA**	**Sodium Method : IFU**		
(a)	Sodium (Na)		159 (± 17) mg/l	<= 30 (AIJN)
A6023	**AA**	**Potassium Method : IFU**		
(a)	Potassium (K)		357 (± 25) mg/l	1100 - 2000 (AIJN)
A6025	**AA**	**Magnesium Method : IFU**		
(a)	Magnesium (Mg)		27 (± 2) mg/l	70 - 120 (AIJN)
A6024	**AA**	**Calcium (AAS) Method : IFU**		
(a)	Calcium (Ca)		52 (± 6) mg/l	45 - 160 (AIJN)
A7076	**AA**	**Phosphorus Method : IFU**		
(a)	Phosphate		80 (± 10) mg/l	
(a)	Phosphorus		26 (± 3) mg/l	80 - 150 (AIJN)
AAC21	**AA**	**Calculation on minerals**		
	Potassium/Magnesium		13	

Oligosaccharides profile- Qual. GC test acc. Low			Results (uncertainty)	Guidelines
A7049	**AA**	**Oligosaccharide profile Method : Internal method, GC-FID**		
	Presence of invert sugar peaks		Negative	
	Presence of inulin peaks		Negative	
	Presence of isomaltose peaks		Negative	
	Presence of maltose peaks		Negative	

Statement of compliance of measured parameters (not covered by the accreditation)	
(Based on available reference values)	Not compliant

CONCLUSION (not covered by the accreditation)

As judged by the results of the analyses performed, and in comparison with industry standards, scientific literature and values at our disposal:

The overall analytical profile is untypical for lemon juice :
- The NMR profiling test annexed to this report reveals many peculiarities and is not in agreement with 100% lemon juice.
- The D/H ratio of calcium citrate and the ratio citric / isocitric indicate a very large citric acid addition (citric acid is mentioned as an ingredient, but the proportion of added citric acid exceeds by far the amount potentially required for acidity correction)
- The compositional analyses confirm that the fruit content is far below 100%. Based on the observed analytical figures the most probable lemon juice content can be estimated around 25%.

We have therefore classified this product as not being in conformity with the description provided.

Eurofins Analytics France
Rue Pierre Adolphe Bobierre
BP 42301
F-44323 Nantes Cedex 3
FRANCE

Phone +33 2 51 83 21 00
Fax +33 2 51 83 21 11
SampleLoginFR@eurofins.com
www.eurofins.fr

SIGNATURE

Eric Jamin
Analytical Services Manager

Ellen Bongard
Analytical Services Manager

Report electronically validated by Eric Jamin

EXPLANATORY NOTE

This document can only be reproduced in full ; it only concerns the submitted sample.
Results have been obtained and reported in accordance with our general sales conditions available on request.
When declaring compliance or non-compliance, the uncertainty associated with the result has been added or subtracted in order to obtain a result that can be compared to regulatory limits or specifications. The uncertainty has not been taken into account for standards that already include measurement uncertainty.
The tests are identified by a five-digit code, their description is available on request.

The tests identified by the two letters code AA are performed in laboratory Eurofins Analytics France. The symbol (a) identifies the tests performed by this laboratory under accreditation NF/EN ISO/IEC 17025:2005 Cofrac 1-0287.

Eurofins Analytics France
Rue Pierre Adolphe Bobierre
BP 42301
F-44323 Nantes Cedex 3
FRANCE

Phone +33 2 51 83 21 00
Fax +33 2 51 83 21 11
SampleLoginFR@eurofins.com
www.eurofins.fr

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SIRET 423 190 891 00022
APE 743 B

NMR Sample Profile

02610144

Measuring Date: 05-Jan-2012 10:01:10
Reporting Date: 05-Jan-2012 11:22:02, Version 2.0.8, 7 pages

Results Summary

Type of Analysis	Analysis ID	Result	Status
Classification Models			
Fruit-Type Model	1001/0690	?[1]	–
Lemon: Product-Type	1007/0690	?[2]	–
Lemon: Origin	1009/0690	?[3]	–
Verification Models			
Univariate Verification	2011/0908	Off-Model	
Multivariate Verification	2011/0908	Off-Model	
Targeted Analysis			
Quantification (A.I.J.N.)	Q	–	
Calculated Figures (A.I.J.N.)	CF	–	

1 = Ambigous Result, class "Lemon" has highest p-value.
2 = Ambigous Result, class "Lemon, Direct Juice" has highest p-value.
3 = Ambigous Result, class "Lemon from Argentina" has highest p-value.

Please note, that SGF-Profiling™ is a screening method with extensive inhouse validation, but it is not an official reference method. Quantitation and regression analyses are regularly validated taking part in official ring tests.

Silberstreifen
76287 Rheinstetten, Germany
Tel. +49(0721)5161-0
Fax. +49(0721)517101
nmr@bruker-biospin.com
www.bruker-biospin.com

Geschäftsführer:
Jörg Laukien
Dr. Bernd Gewiese
Dr. Gerhard Roth
Dr. Wulf-Ingo Jung

Sitz der Gesellschaft Rheinstetten
Handelsregister Mannheim
HRB 10 23 68
USt-Ident.-Nr DE 143 239 759
WEEE-Reg.-Nr. DE 92 533 205
Steuer-Nr. 311-903-8907

General Remarks

Classification Models

The aim of a classification model is to assign a specific sample to its most probable group. The group is chosen from a list of proposed groups. This assignment does not guarantee that the sample is exclusively a member of this group.

The 3D-discrimination diagram shows available groups (ellipsoids) in the projection space of the NMR-profiles with maximized discrimination. The star represents the actual sample.

In most cases these models are discriminating in multidimensional spaces. For such models human perceptibility and options for graphical representation are limited. Misperception is possible in certain cases. The mathematically correct probability for any group membership is represented by p-values which are calculated in the complete space. Typically values higher than 0.05 or 0.01 will accept the hypothesis of group membership. Expert interpretation is necessary before deducing any conclusions.

Only groups listed in the respective models can be considered. Therefore models (especially models of origin) are not applicable for blends and origins which are not listed in the corresponding model.

Verification Models

Verification models are non-targeted analyses comparing the whole NMR-Profile of a specific sample with one corresponding group of reference spectra (database). All spectra data points are taken into account irrespective of whether the signals are caused by already identified molecules or not.

There are different possible reasons for any deviation from the group of reference spectra. If there are detected deviations, this does not automatically mean, that the sample is adulterated. Expert interpretation is necessary before deducing any conclusions.

In some cases for a single spectrum different models are calculated and respective results are proposed. Correct interpretation of the results implies choosing the most appropriate one based on the context and background of the sample.

In the univariate analysis, the NMR spectrum is checked for any unusual low or high signal intensities for a given sample, while taking into account the natural variability of a respective reference group. Multivariate models also take into account the relation between different signals in the NMR spectrum.

Quantification Results / Calculated Values

Obtained quantification levels of parameters are compared to AIJN-CoP-guide values if available and consistency is indicated by an extra traffic light flag. Depending on the type of juice, different compounds are quantifiable. Quantitative values are compared to the SGF-Profiling database if the number of reference values in there is sufficiently large (visualised by distribution). Expert interpretation is necessary before deducing any conclusions.

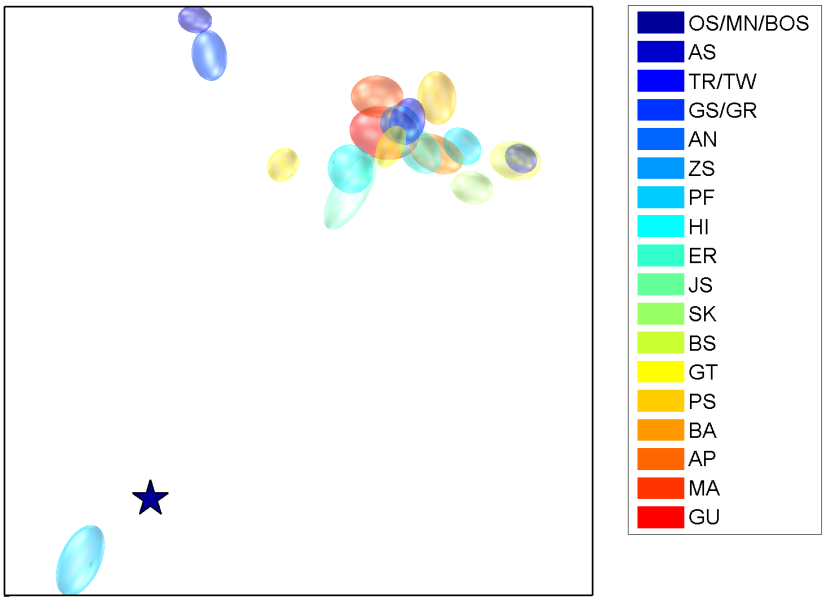
Fruit-Type Model

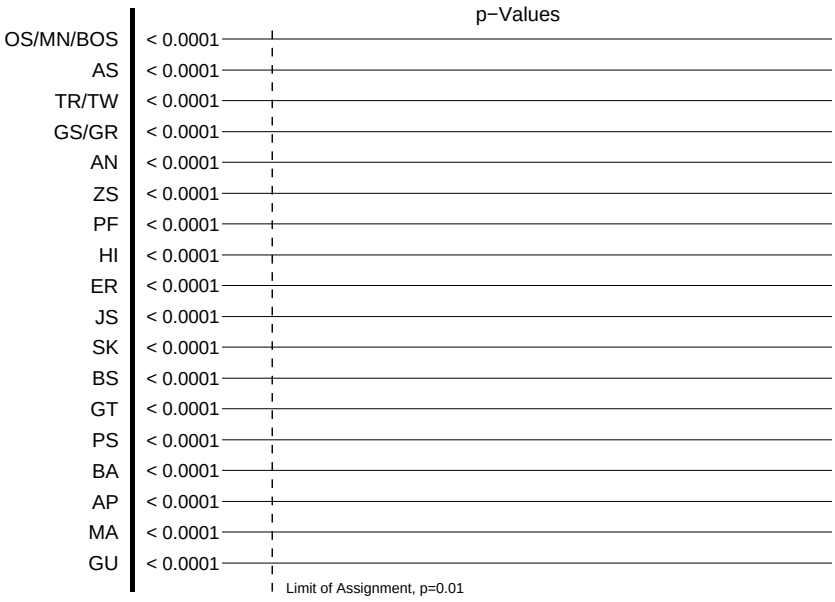
(Classification, Analysis ID: 1001/0690)

Ambigous Result - class "Lemon" has highest p-value.

Following classes are available:

OS/MN/BOS = Orange/Mandarin/Blood-Orange, AS = Apple, TR/TW = Grape, GS/GR = Grapefruit, AN = Pineapple, ZS = Lemon, PF = Peach, HI = Raspberry, ER = Strawberry, JS = Black Currant, SK = Sour Cherry, BS = Pear, GT = Pomegranate, PS = Passion Fruit, BA = Banana, AP = Apricot, MA = Mango, GU = Guava





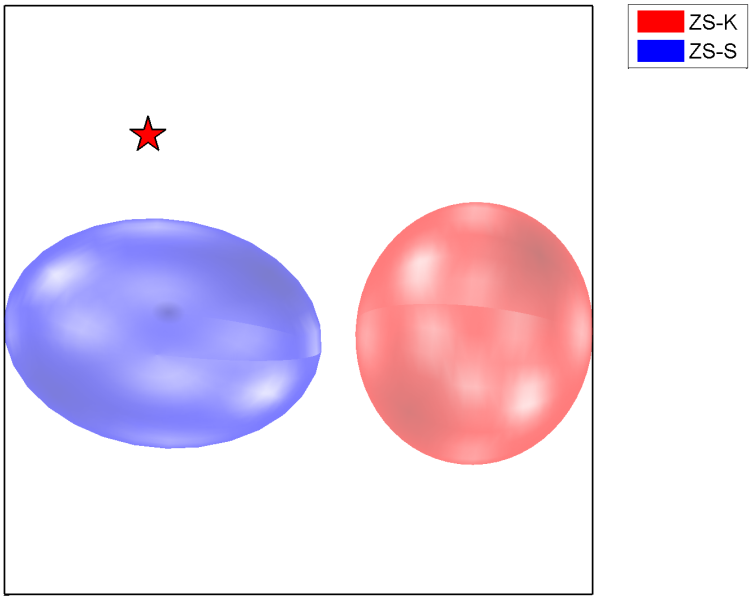
Lemon: Product-Type

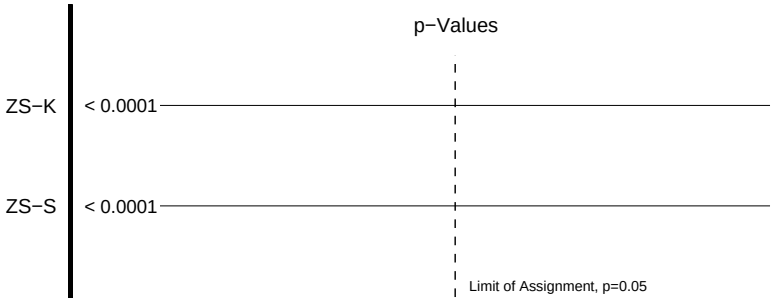
(Classification, Analysis ID: 1007/0690)

Ambigous Result - class "Lemon, Direct Juice" has highest p-value.

Following classes are available:

ZS-K = Lemon, Concentrate, ZS-S = Lemon, Direct Juice





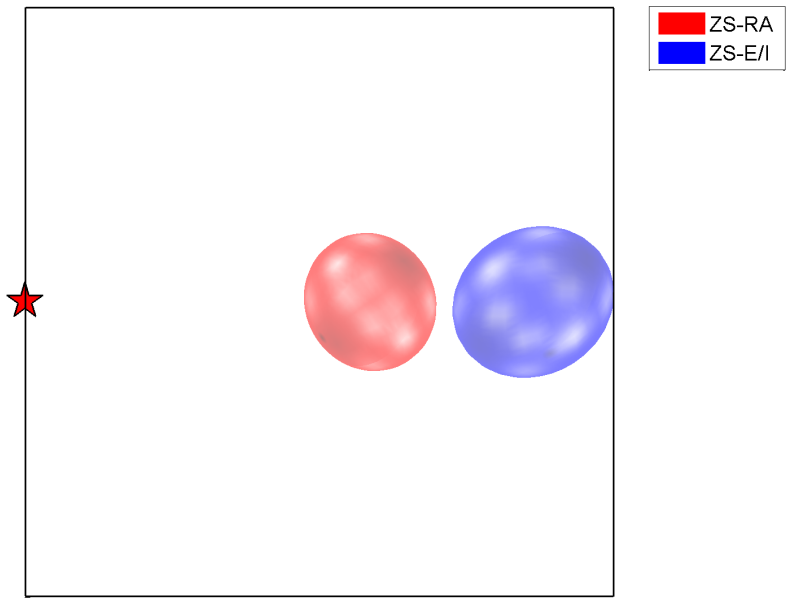
Lemon: Origin

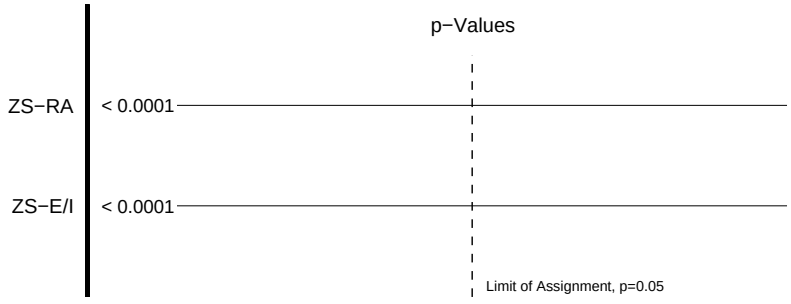
(Classification, Analysis ID: 1009/0690)

Ambigous Result - class "Lemon from Argentina" has highest p-value.

Following classes are available:

ZS-RA = Lemon from Argentina, ZS-E/I = Lemon from Spain/Italy





Verification Models

Applied Model: Lemon

Univariate Verification

(Verification, Analysis ID: 2011/0908)

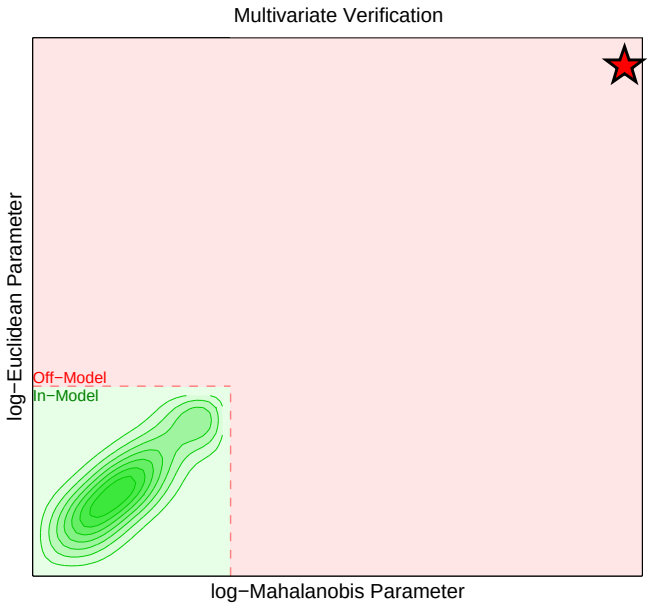
Result: Deviating signals were found at following chemical shifts:

0.812^{up} 0.817^{up} 0.823^{up} 0.829^{up} 0.835^{up} 0.841^{up} 0.847^{up} 0.853^{up} 0.859^{up} 0.864^{up} 0.870^{up}
0.876^{up} 0.976^{up} 0.982^{up} 1.099^{up} 1.105^{up} 1.111^{up} 1.117^{up} 1.123^{up} 1.129^{up} 1.134^{up} 1.158^{up}
1.211^{up} 1.240^{up} 1.246^{up} 1.252^{up} 1.258^{up} 1.264^{up} 1.269^{up} 1.275^{up} 1.281^{up} 1.287^{up} 1.293^{up}
1.299^{up} 1.305^{up} 1.311^{up} 1.316^{up} 1.369^{up} 1.404^{up} 1.410^{up} 1.428^{up} 1.434^{up} 1.440^{up} 1.446^{up}
1.457^{up} 1.545^{up} 1.551^{up} 1.575^{up} 1.581^{up} 1.586^{up} 1.592^{up} 1.598^{up} 1.604^{up} 1.610^{up} 1.616^{up}
1.622^{up} 1.675^{up} 1.680^{up} 1.686^{up} 1.692^{up} 1.710^{up} 1.716^{up} 1.721^{up} 1.727^{up} 1.733^{up} 1.739^{up}
1.745^{up} 1.751^{up} 2.232^{up} 2.825^{up} 3.001^{up} 3.007^{up} 3.036^{up} 3.042^{up} 3.048^{up} 3.066^{up} 3.072^{up}
3.160^{up} 3.166^{up} 3.436^{up} 3.518^{up} 3.688^{up} 3.694^{up} 4.316^{up} 5.279^{up} 5.285^{up} 5.291^{up} 5.297^{up}
5.303^{up} 5.308^{up} 5.543^{up} 7.516^{up} 7.522^{up} 7.527^{up} 7.533^{up} 7.539^{up} 7.545^{up} 7.551^{up} 7.557^{up}
7.563^{up} 7.569^{up} 7.663^{up} 7.668^{up} 7.674^{up} 7.680^{up} 7.686^{up} 7.692^{up} 7.698^{up} 7.704^{up} 7.709^{up}
8.009^{up} 8.015^{up} 8.021^{up} 8.026^{up} 8.032^{up} 8.038^{up} 8.044^{up} 8.050^{up} 8.056^{up} 8.062^{up} 1.017_{low}
1.657_{low} 1.663_{low} 1.903_{low} 2.127_{low} 2.285_{low} 2.467_{low} 2.573_{low} 2.954_{low} 3.265_{low} 3.301_{low}
3.565_{low} 3.582_{low} 3.806_{low} 3.811_{low} 3.841_{low} 4.011_{low} 4.228_{low} 5.256_{low} 5.396_{low} 5.402_{low}

Multivariate Verification

(Verification, Analysis ID: 2011/0908)

Result: Sample was classified as Off-Model in multivariate verification.



Targeted Analysis

In the following tables the results of the quantitative analysis are given and compared to the A.I.J.N. reference ranges (if available). For concentrated products, results are expressed for juice strength.

- consistent with A.I.J.N.
- outside the A.I.J.N. limits (± 10%)
- outside the A.I.J.N. limits
- no A.I.J.N. reference range

N/Q: Not quantified (not detected or insufficient signal assignment)

Quantification Results:

(Analysis-ID: Q)

Compound	Result	Unit	A.I.J.N. (Lemon) Flag	min	max	SGF-Profiling n =413
5-hydroxymethylfurfural	N/Q	mg/l		-	20	not detectable
D-galacturonic acid	N/Q	mg/l		-	-	0 138
alanine	39	mg/l	↓	80	260	97 275
benzaldehyde	N/Q	mg/l		-	-	not detectable
benzoic acid	120	mg/l		-	-	not detectable
citric acid	40.7	g/l	↓	45.0	63.0	42.0 68.8
ethanol	N/Q	mg/l		-	3000	0 391
formic acid	N/Q	mg/l		-	-	0 14
fructose	1.2	g/l	↓	3.0	11.0	3.2 10.1
glucose	1.6	g/l	↓	3.0	12.0	3.3 10.9
isocitric acid	N/Q	mg/l	↓	230	500	222 631
lactic acid	N/Q	mg/l		-	200	0 38
malic acid	N/Q	g/l	↓	1.0	7.5	1.2 7.8
methanol	18	mg/l		-	-	42 136
phlorin	15	mg/l		-	-	20 261
sorbic acid	N/Q	mg/l		-	-	not detectable
succinic acid	24	mg/l		-	-	11 64
sucrose	N/Q	g/l		-	7.0	0.43 6.4

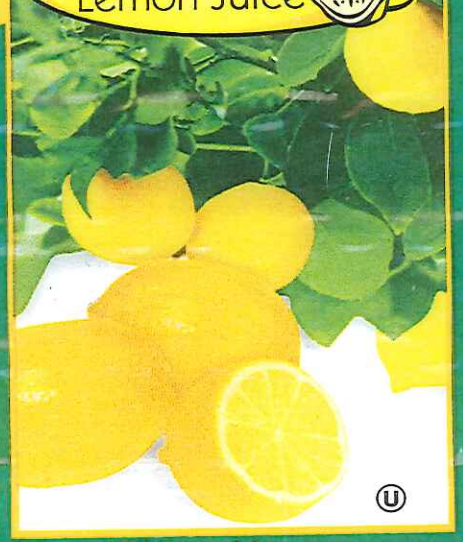
Calculated Values:

Figure	Result	Unit	A.I.J.N. (Lemon) Flag	min	max	SGF-Profiling n =413
Glucose/Fructose ratio	1.30	-		0.95	1.30	0.88 1.47
% Sucrose	0	%		-	-	3 37
Total Sugar	2.7	g/l		-	-	8.4 25.5

APPENDIX 3

Lemon Time™
Lemon Juice

LEMON JUICE
From Concentrate



Contains 100% Lemon Juice *with added ingredients*
Net Contents: 32 Fl. oz. (1Qt.) 946 mL

LEMON JUICE
From Concentrate

INGREDIENTS:
LEMON JUICE FROM CONCENTRATE (WATER, LEMON JUICE CONCENTRATE), 1/35 OF 1% EACH SODIUM BENZOATE & SODIUM BISULFATE (PRESERVATIVES) AND LEMON OIL.

DISTRIBUTED EXCLUSIVELY BY
THE GOURMET FACTORY INC.
HAUPPAUGE, NY 11749
1-800-715-8441

SHAKE WELL BEFORE USING
REFRIGERATE AFTER OPENING

Nutrition Facts
Serving Size: 1 tsp (5 mL)
Servings Per Container (189)

Amount/Serving	
Calories 0	Calories From Fat 0
	%Daily Value*
Total Fat 0g	**0%**
Saturated Fat 0g	0%
Trans Fat 0g	
Dietary Fiber 0g	0%
Sugars 0g	
Cholesterol 0mg	0%
Sodium 0mg	0%
Total Carbohydrate 0g	0%
Protein 0g	

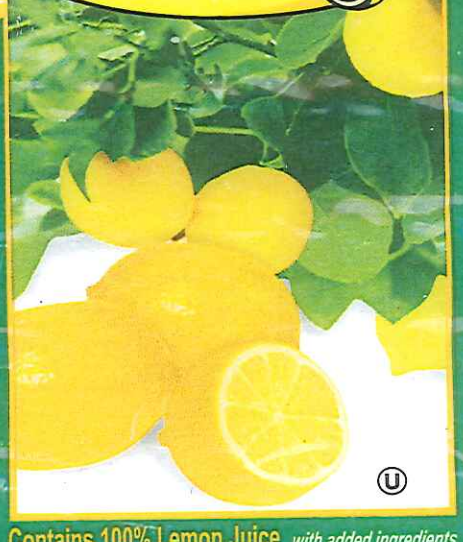
Vitamin A 0% • Vitamin C 0%,
Calcium 0% • Iron 0%.
*Percent Daily Values are based on a 2000 calorie diet.

7 06950 02107 1

Lemon Time
Lemon Juice

UP

LEMON JUICE
From Concentrate



Lemon Time™
Lemon Juice

Contains 100% Lemon Juice *with added ingredients*
Net Contents: 32 Fl. oz. (1Qt.) 946 mL

eurofins | analytics

CANCELS AND REPLACES*

Sample code Nr. E4-370-02604624 **Date** 11/01/2012 **Page 1/3**
Analytical Report Nr. AR-12-AA-000702-02 / E4-370-02604624

(*this report cancels and replaces the previous one, numbered AR-12-AA-000702-01/E4-370-02604624 dated 04/01/2012 which must be destroyed)

For the attention of **NATIONAL CONSUMERS LEAGUE**
Ms Sally Greenberg
1701 K Street, NW
Suite 1200
DC 20006 Washington
Etats Unis
Fax 001 202-835-0747

Copy to : Ms Green (teresag@nclnet.org)

Technical contact for your orders : Marie Jaillais

Our reference :	E4-370-02604624 / AR-12-AA-000702-02	**Type :**	EX
Client reference :	**LemonTime**		
Sample described as :	2 32 ounce bottles of LemonTime Lemon Juice		
Conditioning :	946ml		
Sample reception date :	09/12/2011	**Analysis starting date :**	15/12/2011
Sampling/Transport :	FedEx		
Analyses requested :	PAC1+: Detection of addition of citric acid or sugars PAJ5O: Optimum compositional analysis AA03P: 1H-NMR profiling of fruit juices AA16C: Expert Consulting Service (/hour)		
Best before	24/12/12	**Lot Number**	Prod 175 11

		Results (uncertainty)	Guidelines
AA03P	**AA 1H-NMR profiling of fruit juices Method : Internal method, 1H-NMR**		
	NMR profiling test	See Interpretation	

Isotopic analyses		Results (uncertainty)	Guidelines
A4009	**AA 2H-IRMS by pyrolysis Method : Internal method, EA-IRMS**		
	(D/H) (citrate/SMOW)	150.7 (± 0.5) ppm	
	Delta D (/V.SMOW)	-32 (± 3) ‰	
A4005	**AA 13C-IRMS Method : AOAC 2004.01**		
(a)	Delta C13 citric acid (/V.PDB)	-19.1 (± 0.5) ‰	
(a)	Delta C13 malic acid (/V.PDB)	-23.5 (± 0.5) ‰	
	Delta C13 pulp (/V.PDB)	-25.6 (± 0.3) ‰	
(a)	Delta C13 sugars (/V.PDB)	-25.4 (± 0.5) ‰	

Compositional analyses		Results (uncertainty)	Guidelines
A7059	**AA Brix Method : IFU**		
(a)	Brix	6.8 (± 0.2) °Brix	
(a)	Brix, corrected for acidity	7.7 (± 0.2) °Brix	
(a)	Ratio	1.8 (± 1.0)	
(a)	Soluble solids (from refrac.)	78.7 g/l	
A7018	**AA Fructose (enzymatic method) Method : IFU**		
(a)	Fructose (enzymatic)	0.6 (± 0.8) g/l	3 - 11 (AIJN)
A7017	**AA Glucose (enzym. method) Method : IFU**		
(a)	Glucose (enzymatic)	0.6 (± 0.7) g/l	3 - 12 (AIJN)
A7019	**AA Sucrose (enzym. method) Method : IFU**		
(a)	Sucrose (enzymatic)	<2 g/l	<= 7 (AIJN)
AAC10	**AA Calculation on sugars**		
	% sucrose	0 %	
	Glucose / Fructose (enz)	1.14	0.95 - 1.3 (AIJN)
	Sugar free extract (enzymatic)	77.5 g/l	65 - 82 (AIJN)
	Sum of sugars (enzymatic)	1.2 g/l	
A7489	**AA Sorbitol (IC) Method : Internal method, IC**		
	Sorbitol (IC)	<10 mg/l	.
A7021	**AA Total acidity Method : IFU**		
(a)	Titratable acidity (pH 8.1)	688.9 (± 34.5) meq/l	700 - 970 (AIJN)
(a)	Titratable acidity (pH 7.0)	678.1 (± 33.9) meq/l	

Eurofins Analytics France
Rue Pierre Adolphe Bobierre
BP 42301
F-44323 Nantes Cedex 3
FRANCE

Phone +33 2 51 83 21 00
Fax +33 2 51 83 21 11
SampleLoginFR@eurofins.com
www.eurofins.fr

Sample code Nr. E4-370-02604624 **Date** 11/01/2012

Analytical Report Nr. AR-12-AA-000702-02 / E4-370-02604624

Compositional analyses			Results (uncertainty)	Guidelines
A7021	**AA**	**Total acidity Method : IFU**		
(a)	Acidity exp. citric acid (pH 8.1)		44.1 (± 2.2) g/l	
(a)	Total acid. expr. as Citric ac. monohydr. (pH 8.1)		48.2 (± 2.4) g/l	
(a)	Acidity exp. in tartaric acid (pH 7.0)		50.9 (± 2.5) g/l	
(a)	Acidity exp.in malic acid (pH 8.1)		46.2 (± 2.3) g/l	
A7003	**AA**	**Citric acid Method : IFU**		
(a)	Citric acid		45.33 (± 1.81) g/l	45 - 63 (AIJN)
A7004	**AA**	**D-Isocitric acid Method : IFU**		
(a)	D-isocitric acid		52.5 (± 6.6) mg/l	230 - 500 (AIJN)
A7012	**AA**	**L-malic acid Method : IFU**		
(a)	L-malic acid		0.31 (± 0.13) g/l	1 - 7.5 (AIJN)
A7051	**AA**	**pH Method : IFU**		
(a)	pH		2.00 (± 0.10)	
AAC11	**AA**	**Calculation on acids**		
	Citric acid/Isocitric acid		863	<= 200 (AIJN)
A7014	**AA**	**Flavanone glycosides (6 param.) Method : IFU**		
(a)	Hesperidin		21.4 (± 2.1) mg/l	200 - 800 (AIJN) (For cloudy juices, lower values for classical juices)
(a)	Narirutin		<10 mg/l	
(a)	Naringin		<10 mg/l	<= 10 (AIJN)
(a)	Eriocitrin		<10 mg/l	
(a)	Neoeriocitrin		<10 mg/l	
(a)	Neohesperidin		<10 mg/l	
A7016	**AA**	**Formol index Method : IFU**		
(a)	Formol number (ml NaOH 0.1N)		1.6 (± 0.2) /100 ml	13 - 26 (AIJN)

Minerals - Oligoelements			Results (uncertainty)	Guidelines
A6022	**AA**	**Sodium Method : IFU**		
(a)	Sodium (Na)		37.2 (± 4.9) mg/l	<= 30 (AIJN)
A6023	**AA**	**Potassium Method : IFU**		
(a)	Potassium (K)		172 (± 12) mg/l	1100 - 2000 (AIJN)
A6025	**AA**	**Magnesium Method : IFU**		
(a)	Magnesium (Mg)		16 (± 2) mg/l	70 - 120 (AIJN)
A6024	**AA**	**Calcium (AAS) Method : IFU**		
(a)	Calcium (Ca)		113 (± 11) mg/l	45 - 160 (AIJN)
A7076	**AA**	**Phosphorus Method : IFU**		
(a)	Phosphate		37 (± 5) mg/l	
(a)	Phosphorus		12 (± 1) mg/l	80 - 150 (AIJN)
AAC21	**AA**	**Calculation on minerals**		
	Potassium/Magnesium		11	

Oligosaccharides profile- Qual. GC test acc. Low			Results (uncertainty)	Guidelines
A7049	**AA**	**Oligosaccharide profile Method : Internal method, GC-FID**		
	Presence of invert sugar peaks		Negative	
	Presence of inulin peaks		Negative	
	Presence of isomaltose peaks		Negative	
	Presence of maltose peaks		Positive	

Statement of compliance of measured parameters (not covered by the accreditation)		
	(Based on available reference values)	Not compliant

CONCLUSION (not covered by the accreditation)

As judged by the results of the analyses performed, and in comparison with industry standards, scientific litterature, and values at our disposal :

The overall analytical profile is untypical for lemon juice:
- The NMR profiling test annexed to this report reveals many peculiarities and is not in agreement with 100% lemon juice.
- The isotopic analyses are showing a large addition of citric acid (coming from the fermentation of a C4 plant source such as cane or maize).
- The compositional analyses confirm that the fruit content is far below 100% and that citric acid is added. Based on the observed analytical figures the most probable lemon juice content can be estimated around 15%.
- Two peaks which coincide with those of maltose have been detected in the oligosaccharide profile fingerprint of this sample. Our opinion is that the occurence of these peaks at this level can be considered as an indication of the presence of starch derived sugar syrup.

We have therefore classified this product as not being in conformity with the description provided.

Eurofins Analytics France
Rue Pierre Adolphe Bobierre
BP 42301
F-44323 Nantes Cedex 3
FRANCE

Phone +33 2 51 83 21 00
Fax +33 2 51 83 21 11
SampleLoginFR@eurofins.com
www.eurofins.fr

Sample code Nr.	**E4-370-02604624**	**Date**	**11/01/2012**	**Page 3/3**
Analytical Report Nr.	**AR-12-AA-000702-02 / E4-370-02604624**			

SIGNATURE

Eric Jamin
Analytical Services Manager

Report electronically validated by Eric Jamin

EXPLANATORY NOTE

This document can only be reproduced in full ; it only concerns the submitted sample.
Results have been obtained and reported in accordance with our general sales conditions available on request.
When declaring compliance or non-compliance, the uncertainty associated with the result has been added or subtracted in order to obtain a result that can be compared to regulatory limits or specifications. The uncertainty has not been taken into account for standards that already include measurement uncertainty.
The tests are identified by a five-digit code, their description is available on request.

The tests identified by the two letters code AA are performed in laboratory Eurofins Analytics France. The symbol (a) identifies the tests performed by this laboratory under accreditation NF/EN ISO/IEC 17025:2005 Cofrac 1-0287.

Eurofins Analytics France
Rue Pierre Adolphe Bobierre
BP 42301
F-44323 Nantes Cedex 3
FRANCE

Phone +33 2 51 83 21 00
Fax +33 2 51 83 21 11
SampleLoginFR@eurofins.com
www.eurofins.fr

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RCS NANTES 423 190 891
SIRET 423 190 891 00022
APE 743 B

NMR Sample Profile

02604624

Measuring Date: 15-Dec-2011 08:57:04
Reporting Date: 15-Dec-2011 10:01:47, Version 2.0.8, 6 pages

Results Summary

Type of Analysis	Analysis ID	Result	Status
Classification Models			
Fruit-Type Model	1001/0690	?[1]	–
Verification Models			
Univariate Verification	2011/0908	Off-Model	●
Multivariate Verification	2011/0908	Off-Model	●
Targeted Analysis			
Quantification (A.I.J.N.)	Q	–	●
Calculated Figures (A.I.J.N.)	CF	–	●

1 = Ambigous Result, class "Strawberry" has highest p-value.

Please note, that SGF-Profiling™ is a screening method with extensive inhouse validation, but it is not an official reference method. Quantitation and regression analyses are regularly validated taking part in official ring tests.

Silberstreifen
76287 Rheinstetten, Germany
Tel. +49(0721)5161-0
Fax. +49(0721)517101
nmr@bruker-biospin.com
www.bruker-biospin.com

Geschäftsführer:
Jörg Laukien
Dr. Bernd Gewiese
Dr. Gerhard Roth
Dr. Wulf-Ingo Jung

Sitz der Gesellschaft Rheinstetten
Handelsregister Mannheim
HRB 10 23 68
USt-Ident.-Nr DE 143 239 759
WEEE-Reg.-Nr. DE 92 533 205
Steuer-Nr. 311-903-8907

General Remarks

Classification Models

The aim of a classification model is to assign a specific sample to its most probable group. The group is chosen from a list of proposed groups. This assignment does not guarantee that the sample is exclusively a member of this group.

The 3D-discrimination diagram shows available groups (ellipsoids) in the projection space of the NMR-profiles with maximized discrimination. The star represents the actual sample.

In most cases these models are discriminating in multidimensional spaces. For such models human perceptibility and options for graphical representation are limited. Misperception is possible in certain cases. The mathematically correct probability for any group membership is represented by p-values which are calculated in the complete space. Typically values higher than 0.05 or 0.01 will accept the hypothesis of group membership. Expert interpretation is necessary before deducing any conclusions.

Only groups listed in the respective models can be considered. Therefore models (especially models of origin) are not applicable for blends and origins which are not listed in the corresponding model.

Verification Models

Verification models are non-targeted analyses comparing the whole NMR-Profile of a specific sample with one corresponding group of reference spectra (database). All spectra data points are taken into account irrespective of whether the signals are caused by already identified molecules or not.

There are different possible reasons for any deviation from the group of reference spectra. If there are detected deviations, this does not automatically mean, that the sample is adulterated. Expert interpretation is necessary before deducing any conclusions.

In some cases for a single spectrum different models are calculated and respective results are proposed. Correct interpretation of the results implies choosing the most appropriate one based on the context and background of the sample.

In the univariate analysis, the NMR spectrum is checked for any unusual low or high signal intensities for a given sample, while taking into account the natural variability of a respective reference group. Multivariate models also take into account the relation between different signals in the NMR spectrum.

Quantification Results / Calculated Values

Obtained quantification levels of parameters are compared to AIJN-CoP-guide values if available and consistency is indicated by an extra traffic light flag. Depending on the type of juice, different compounds are quantifiable. Quantitative values are compared to the SGF-Profiling database if the number of reference values in there is sufficiently large (visualised by distribution). Expert interpretation is necessary before deducing any conclusions.

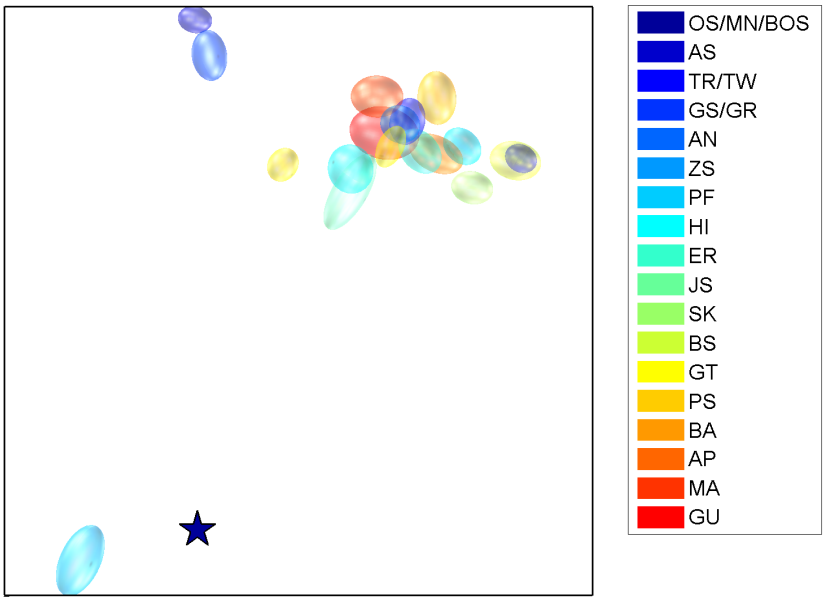
Fruit-Type Model

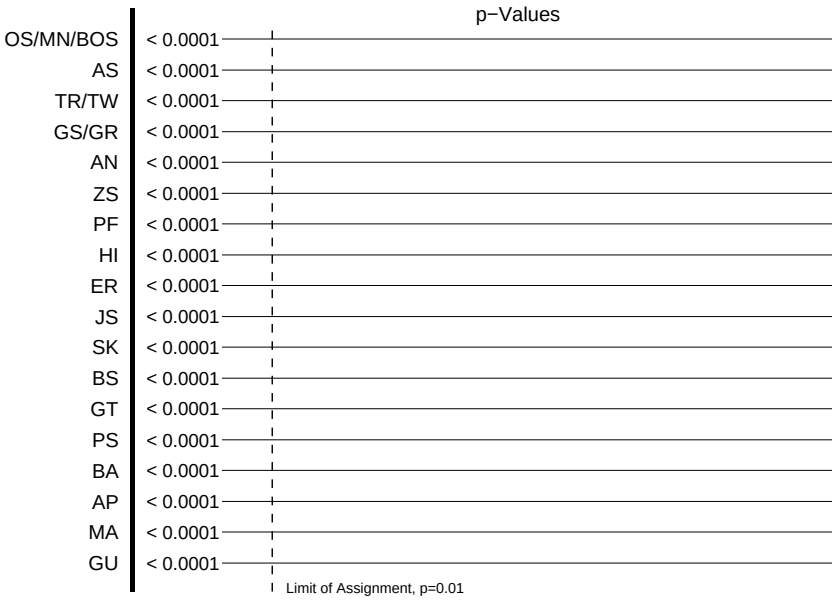
(Classification, Analysis ID: 1001/0690)

Ambigous Result - class "Strawberry" has highest p-value.

Following classes are available:

OS/MN/BOS = Orange/Mandarin/Blood-Orange, AS = Apple, TR/TW = Grape, GS/GR = Grapefruit, AN = Pineapple, ZS = Lemon, PF = Peach, HI = Raspberry, ER = Strawberry, JS = Black Currant, SK = Sour Cherry, BS = Pear, GT = Pomegranate, PS = Passion Fruit, BA = Banana, AP = Apricot, MA = Mango, GU = Guava





Verification Models

Applied Model: Lemon

Univariate Verification

(Verification, Analysis ID: 2011/0908)

Result: Deviating signals were found at following chemical shifts:

1.581^{up} 1.586^{up} 1.592^{up} 1.598^{up} 1.704^{up} 1.815^{up} 1.821^{up} 1.827^{up} 1.833^{up} 1.839^{up} 1.845^{up}
3.588^{up} 3.594^{up} 3.600^{up} 3.606^{up} 3.612^{up} 3.618^{up} 3.624^{up} 3.629^{up} 3.635^{up} 3.823^{up} 3.829^{up}
3.835^{up} 3.841^{up} 3.847^{up} 3.853^{up} 3.858^{up} 3.917^{up} 3.923^{up} 3.929^{up} 3.935^{up} 3.941^{up} 3.946^{up}
3.952^{up} 3.958^{up} 3.964^{up} 3.970^{up} 5.279^{up} 5.285^{up} 5.291^{up} 5.297^{up} 5.303^{up} 5.308^{up} 5.314^{up}
5.320^{up} 5.326^{up} 5.332^{up} 5.338^{up} 5.344^{up} 5.349^{up} 5.355^{up} 5.361^{up} 5.367^{up} 5.373^{up} 5.379^{up}
5.426^{up} 5.432^{up} 5.573^{up} 5.578^{up} 5.584^{up} 5.590^{up} 5.796^{up} 5.802^{up} 5.831^{up} 5.837^{up} 5.843^{up}
6.283^{up} 6.289^{up} 6.295^{up} 6.301^{up} 6.306^{up} 6.312^{up} 6.318^{up} 6.324^{up} 7.269^{up} 7.275^{up} 7.281^{up}
7.287^{up} 7.293^{up} 0.947_{low} 1.516_{low} 1.522_{low} 1.757_{low} 1.915_{low} 1.921_{low} 1.927_{low} 1.933_{low}
1.945_{low} 1.950_{low} 1.956_{low} 1.962_{low} 1.997_{low} 2.003_{low} 2.009_{low} 2.015_{low} 2.021_{low} 2.027_{low}
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3.712_{low} 3.717_{low} 3.723_{low} 3.735_{low} 3.876_{low} 3.894_{low} 3.899_{low} 3.905_{low} 3.988_{low} 3.993_{low}
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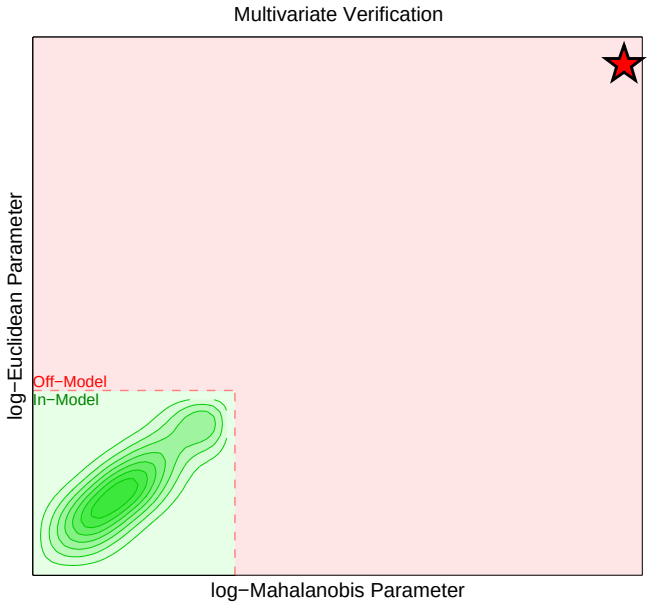
4.228_{low} 4.234_{low} 4.240_{low} 4.246_{low} 4.369_{low} 4.487_{low} 4.492_{low} 4.557_{low} 4.575_{low} 4.586_{low}
5.220_{low} 5.226_{low} 5.232_{low} 5.238_{low} 5.244_{low}

Multivariate Verification

(Verification, Analysis ID: 2011/0908)

Result: Sample was classified as Off-Model in multivariate verification.



Targeted Analysis

In the following tables the results of the quantitative analysis are given and compared to the A.I.J.N. reference ranges (if available). For concentrated products, results are expressed for juice strength.

- consistent with A.I.J.N.
- outside the A.I.J.N. limits (± 10%)
- outside the A.I.J.N. limits
- no A.I.J.N. reference range

N/Q: Not quantified (not detected or insufficient signal assignment)

Quantification Results:

(Analysis-ID: Q)

Compound	Result	Unit	A.I.J.N. (Lemon) Flag	min	max	SGF-Profiling n =413
5-hydroxymethylfurfural	N/Q	mg/l		-	20	not detectable
D-galacturonic acid	N/Q	mg/l		-	-	0 138
alanine	12	mg/l	↓	80	260	97 275
benzaldehyde	N/Q	mg/l		-	-	not detectable
benzoic acid	N/Q	mg/l		-	-	not detectable
citric acid	41.7	g/l	↓	45.0	63.0	42.0 68.8
ethanol	N/Q	mg/l		-	3000	0 391
formic acid	N/Q	mg/l		-	-	0 14
fructose	0.7	g/l	↓	3.0	11.0	3.2 10.1
glucose	2.7	g/l	↓	3.0	12.0	3.3 10.9
isocitric acid	N/Q	mg/l	↓	230	500	222 631
lactic acid	N/Q	mg/l		-	200	0 38
malic acid	N/Q	g/l	↓	1.0	7.5	1.2 7.8
methanol	N/Q	mg/l		-	-	42 136
phlorin	<5	mg/l		-	-	20 261
sorbic acid	106	mg/l		-	-	not detectable
succinic acid	33	mg/l		-	-	11 64
sucrose	21.9	g/l	↑	-	7.0	0.43 6.4

Calculated Values:

Figure	Result	Unit	A.I.J.N. (Lemon) Flag	min	max	SGF-Profiling n =413
Glucose/Fructose ratio	4.14	-	↑	0.95	1.30	0.88 1.47
% Sucrose	87	%		-	-	3 37
Total Sugar	25.3	g/l		-	-	8.4 25.5

APPENDIX 4

PAMPA®

Fresh Lemon Taste

Lemon Juice

FROM CONCENTRATE

32 FL OZ (946 mL)

PAMPA®

Fresh Lemon Taste

Lemon Juice

FROM CONCENTRATE

MADE WITH 100% JUICE

Nutrition Facts

Serving Size 1 tsp (5 mL)
Servings Per Container About 189

Amount Per Serving	
Calories 0	
	% Daily Value*
Total Fat 0g	0%
Trans Fat 0g	
Sodium 0mg	0%
Total Carbohydrate 0g	0%
Protein 0g	
Vitamin C 0%	

Not a significant source of calories from fat, saturated fat, cholesterol, dietary fiber, sugars, vitamin A, calcium and iron.

* Percent Daily Values are based on a 2,000 calorie diet.

INGREDIENTS:
LEMON JUICE FROM CONCENTRATE (WATER, CONCENTRATED LEMON JUICE), SODIUM BISULFITE (PRESERVATIVE), SODIUM BENZOATE (PRESERVATIVE) AND LEMON OIL.

Distributed by:
Transnational Foods, Inc.
Miami, FL 33131
www.transnationalfoods.com.ar

PRODUCT OF PERU

8 76941 00222 5

NATURAL STRENGTH
DO NOT DILUTE

SHAKE WELL BEFORE USING

REFRIGERATE AFTER OPENING

IF SEAL IS BROKEN, DO NOT PURCHASE

ADDS FRESH LEMON TASTE TO FISH, MEAT, POULTRY AND ALL YOUR FAVORITE DISHES.

eurofins | analytics

CANCELS AND REPLACES*

Sample code Nr. E4-370-02604626 **Date** 11/01/2012

Analytical Report Nr. AR-12-AA-000704-02 / E4-370-02604626

(*this report cancels and replaces the previous one, numbered AR-12-AA-000704-01/E4-370-02604626 dated 04/01/2012 which must be destroyed)

For the attention of **NATIONAL CONSUMERS LEAGUE**
Ms Sally Greenberg
1701 K Street, NW
Suite 1200
DC 20006 Washington
Etats Unis
Fax 001 202-835-0747

Copy to : Ms Green (teresag@nclnet.org)

Technical contact for your orders : Marie Jaillais

Our reference :	E4-370-02604626 / AR-12-AA-000704-02	**Type :**	EX
Client reference :	**Pampa**		
Sample described as :	2 32 ounce bottles of Pampa Lemon Juice		
Conditioning :	946ml		
Sample reception date :	09/12/2011	**Analysis starting date :**	15/12/2011
Sampling/Transport :	FedEx		
Analyses requested :	PAJ5O: Optimum compositional analysis PAC1+: Detection of addition of citric acid or sugars AA03P: 1H-NMR profiling of fruit juices AA16C: Expert Consulting Service (/hour)		
Best before	22/02/2013	**Lot Number**	Lot 23411

		Results (uncertainty)	Guidelines
AA03P	**AA 1H-NMR profiling of fruit juices Method : Internal method, 1H-NMR**		
	NMR profiling test	See Interpretation	

Isotopic analyses		Results (uncertainty)	Guidelines
A4009	**AA 2H-IRMS by pyrolysis Method : Internal method, EA-IRMS**		
	(D/H) (citrate/SMOW)	147.1 (± 0.5) ppm	
	Delta D (/V.SMOW)	-56 (± 3) ‰	
A4005	**AA 13C-IRMS Method : AOAC 2004.01**		
(a)	Delta C13 citric acid (/V.PDB)	-13.1 (± 0.5) ‰	
	Delta C13 pulp (/V.PDB)	-24.1 (± 0.3) ‰	
(a)	Delta C13 sugars (/V.PDB)	-12.0 (± 0.5) ‰	

Compositional analyses		Results (uncertainty)	Guidelines
A7059	**AA Brix Method : IFU**		
(a)	Brix	6.7 (± 0.2) °Brix	
(a)	Brix, corrected for acidity	7.6 (± 0.2) °Brix	
(a)	Ratio	1.7 (± 1.0)	
(a)	Soluble solids (from refrac.)	77.8 g/l	
A7018	**AA Fructose (enzymatic method) Method : IFU**		
(a)	Fructose (enzymatic)	0.5 (± 0.8) g/l	3 - 11 (AIJN)
A7017	**AA Glucose (enzym. method) Method : IFU**		
(a)	Glucose (enzymatic)	0.7 (± 0.7) g/l	3 - 12 (AIJN)
A7019	**AA Sucrose (enzym. method) Method : IFU**		
(a)	Sucrose (enzymatic)	<2 g/l	<= 7 (AIJN)
AAC10	**AA Calculation on sugars**		
	% sucrose	0 %	
	Glucose / Fructose (enz)	1.30	0.95 - 1.3 (AIJN)
	Sugar free extract (enzymatic)	76.5 g/l	65 - 82 (AIJN)
	Sum of sugars (enzymatic)	1.2 g/l	
A7489	**AA Sorbitol (IC) Method : Internal method, IC**		
	Sorbitol (IC)	<10 mg/l	.
A7021	**AA Total acidity Method : IFU**		
(a)	Titratable acidity (pH 8.1)	698.6 (± 34.9) meq/l	700 - 970 (AIJN)
(a)	Titratable acidity (pH 7.0)	687.7 (± 34.4) meq/l	
(a)	Acidity exp. citric acid (pH 8.1)	44.7 (± 2.2) g/l	

Eurofins Analytics France
Rue Pierre Adolphe Bobierre
BP 42301
F-44323 Nantes Cedex 3
FRANCE

Phone +33 2 51 83 21 00
Fax +33 2 51 83 21 11
SampleLoginFR@eurofins.com
www.eurofins.fr

Compositional analyses			Results (uncertainty)	Guidelines
A7021	**AA**	**Total acidity Method : IFU**		
(a)	Total acid. expr. as Citric ac. monohydr. (pH 8.1)		48.9 (± 2.4) g/l	
(a)	Acidity exp. in tartaric acid (pH 7.0)		51.6 (± 2.6) g/l	
(a)	Acidity exp.in malic acid (pH 8.1)		46.8 (± 2.3) g/l	
A7003	**AA**	**Citric acid Method : IFU**		
(a)	Citric acid		44.65 (± 1.78) g/l	45 - 63 (AIJN)
A7004	**AA**	**D-Isocitric acid Method : IFU**		
(a)	D-isocitric acid		28.7 (± 4.5) mg/l	230 - 500 (AIJN)
A7012	**AA**	**L-malic acid Method : IFU**		
(a)	L-malic acid		0.30 (± 0.13) g/l	1 - 7.5 (AIJN)
A7051	**AA**	**pH Method : IFU**		
(a)	pH		2.02 (± 0.10)	
AAC11	**AA**	**Calculation on acids**		
	Citric acid/Isocitric acid		1555	<= 200 (AIJN)
A7014	**AA**	**Flavanone glycosides (6 param.) Method : IFU**		
(a)	Hesperidin		23.1 (± 2.3) mg/l	200 - 800 (AIJN) (For cloudy juices, lower values for classical juices)
(a)	Narirutin		<10 mg/l	
(a)	Naringin		<10 mg/l	<= 10 (AIJN)
(a)	Eriocitrin		<10 mg/l	
(a)	Neoeriocitrin		<10 mg/l	
(a)	Neohesperidin		<10 mg/l	
A7016	**AA**	**Formol index Method : IFU**		
(a)	Formol number (ml NaOH 0.1N)		1.6 (± 0.2) /100 ml	13 - 26 (AIJN)

Minerals - Oligoelements			Results (uncertainty)	Guidelines
A6022	**AA**	**Sodium Method : IFU**		
(a)	Sodium (Na)		86.1 (± 9.8) mg/l	<= 30 (AIJN)
A6023	**AA**	**Potassium Method : IFU**		
(a)	Potassium (K)		107 (± 7) mg/l	1100 - 2000 (AIJN)
A6025	**AA**	**Magnesium Method : IFU**		
(a)	Magnesium (Mg)		16 (± 2) mg/l	70 - 120 (AIJN)
A6024	**AA**	**Calcium (AAS) Method : IFU**		
(a)	Calcium (Ca)		108 (± 10) mg/l	45 - 160 (AIJN)
A7076	**AA**	**Phosphorus Method : IFU**		
(a)	Phosphate		39 (± 5) mg/l	
(a)	Phosphorus		13 (± 2) mg/l	80 - 150 (AIJN)
AAC21	**AA**	**Calculation on minerals**		
	Potassium/Magnesium		7	

Oligosaccharides profile- Qual. GC test acc. Low			Results (uncertainty)	Guidelines
A7049	**AA**	**Oligosaccharide profile Method : Internal method, GC-FID**		
	Presence of invert sugar peaks		Negative	
	Presence of inulin peaks		Negative	
	Presence of isomaltose peaks		Negative	
	Presence of maltose peaks		Positive	

Statement of compliance of measured parameters (not covered by the accreditation)		
	(Based on available reference values)	Not compliant

CONCLUSION (not covered by the accreditation)

As judged by the results of the analyses performed, and in comparison with industry standards, scientific litterature, and values at our disposal :

The overall analytical profile is untypical for lemon juice:
- The NMR profiling test annexed to this report reveals many peculiarities and is not in agreement with 100% lemon juice.
- The isotopic analyses are showing a large addition of citric acid (coming from the fermentation of a C4 plant source such as cane or maize).
- The compositional analyses confirm that the fruit content is far below 100% and that citric acid is added. Based on the observed analytical figures the most probable lemon juice content can be estimated around 10%.
- Two peaks which coincide with those of maltose have been detected in the oligosaccharide profile fingerprint of this sample. Our opinion is that the occurence of these peaks at this level can be considered as an indication of the presence of starch derived sugar syrup.

We have therefore classified this product as not being in conformity with the description provided.

Eurofins Analytics France
Rue Pierre Adolphe Bobierre
BP 42301
F-44323 Nantes Cedex 3
FRANCE

Phone +33 2 51 83 21 00
Fax +33 2 51 83 21 11
SampleLoginFR@eurofins.com
www.eurofins.fr

Sample code Nr.	**E4-370-02604626**	**Date**	**11/01/2012**	**Page 3/3**
Analytical Report Nr.	**AR-12-AA-000704-02 / E4-370-02604626**			

SIGNATURE

Eric Jamin
Analytical Services Manager

Report electronically validated by Eric Jamin

EXPLANATORY NOTE

This document can only be reproduced in full ; it only concerns the submitted sample.
Results have been obtained and reported in accordance with our general sales conditions available on request.
When declaring compliance or non-compliance, the uncertainty associated with the result has been added or subtracted in order to obtain a result that can be compared to regulatory limits or specifications. The uncertainty has not been taken into account for standards that already include measurement uncertainty.
The tests are identified by a five-digit code, their description is available on request.

The tests identified by the two letters code AA are performed in laboratory Eurofins Analytics France. The symbol (a) identifies the tests performed by this laboratory under accreditation NF/EN ISO/IEC 17025:2005 Cofrac 1-0287.

Eurofins Analytics France
Rue Pierre Adolphe Bobierre
BP 42301
F-44323 Nantes Cedex 3
FRANCE

Phone +33 2 51 83 21 00
Fax +33 2 51 83 21 11
SampleLoginFR@eurofins.com
www.eurofins.fr

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NMR Sample Profile

02604626

Measuring Date: 15-Dec-2011 09:23:14
Reporting Date: 15-Dec-2011 10:27:25, Version 2.0.8, 6 pages

Results Summary

Type of Analysis	Analysis ID	Result	Status
Classification Models			
Fruit-Type Model	1001/0690	?[1]	–
Verification Models			
Univariate Verification	2011/0908	Off-Model	●
Multivariate Verification	2011/0908	Off-Model	●
Targeted Analysis			
Quantification (A.I.J.N.)	Q	–	●
Calculated Figures (A.I.J.N.)	CF	–	●

1 = Ambigous Result, class "Strawberry" has highest p-value.

Please note, that SGF-Profiling™ is a screening method with extensive inhouse validation, but it is not an official reference method. Quantitation and regression analyses are regularly validated taking part in official ring tests.

Silberstreifen
76287 Rheinstetten, Germany
Tel. +49(0721)5161-0
Fax. +49(0721)517101
nmr@bruker-biospin.com
www.bruker-biospin.com

Geschäftsführer:
Jörg Laukien
Dr. Bernd Gewiese
Dr. Gerhard Roth
Dr. Wulf-Ingo Jung

Sitz der Gesellschaft Rheinstetten
Handelsregister Mannheim
HRB 10 23 68
USt-Ident.-Nr DE 143 239 759
WEEE-Reg.-Nr. DE 92 533 205
Steuer-Nr. 311-903-8907

General Remarks

Classification Models

The aim of a classification model is to assign a specific sample to its most probable group. The group is chosen from a list of proposed groups. This assignment does not guarantee that the sample is exclusively a member of this group.

The 3D-discrimination diagram shows available groups (ellipsoids) in the projection space of the NMR-profiles with maximized discrimination. The star represents the actual sample.

In most cases these models are discriminating in multidimensional spaces. For such models human perceptibility and options for graphical representation are limited. Misperception is possible in certain cases. The mathematically correct probability for any group membership is represented by p-values which are calculated in the complete space. Typically values higher than 0.05 or 0.01 will accept the hypothesis of group membership. Expert interpretation is necessary before deducing any conclusions.

Only groups listed in the respective models can be considered. Therefore models (especially models of origin) are not applicable for blends and origins which are not listed in the corresponding model.

Verification Models

Verification models are non-targeted analyses comparing the whole NMR-Profile of a specific sample with one corresponding group of reference spectra (database). All spectra data points are taken into account irrespective of whether the signals are caused by already identified molecules or not.

There are different possible reasons for any deviation from the group of reference spectra. If there are detected deviations, this does not automatically mean, that the sample is adulterated. Expert interpretation is necessary before deducing any conclusions.

In some cases for a single spectrum different models are calculated and respective results are proposed. Correct interpretation of the results implies choosing the most appropriate one based on the context and background of the sample.

In the univariate analysis, the NMR spectrum is checked for any unusual low or high signal intensities for a given sample, while taking into account the natural variability of a respective reference group. Multivariate models also take into account the relation between different signals in the NMR spectrum.

Quantification Results / Calculated Values

Obtained quantification levels of parameters are compared to AIJN-CoP-guide values if available and consistency is indicated by an extra traffic light flag. Depending on the type of juice, different compounds are quantifiable. Quantitative values are compared to the SGF-Profiling database if the number of reference values in there is sufficiently large (visualised by distribution). Expert interpretation is necessary before deducing any conclusions.

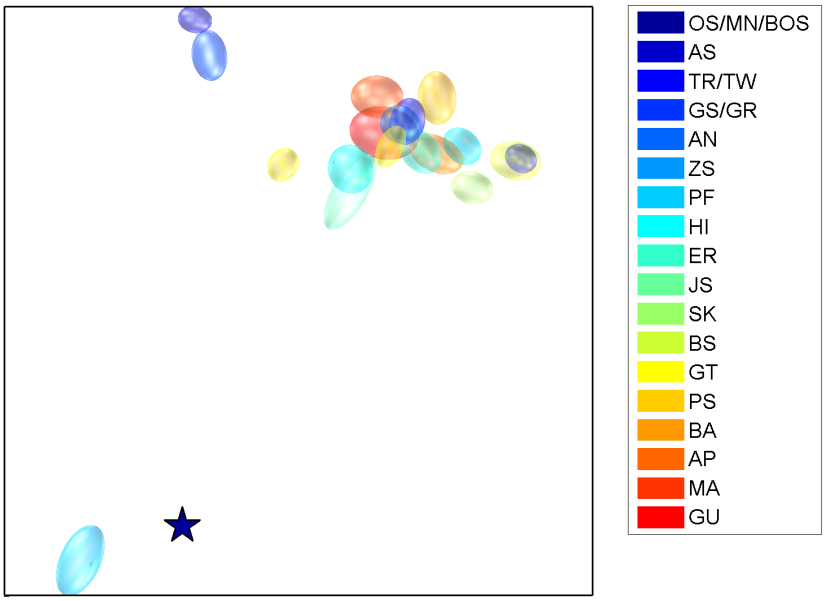
Fruit-Type Model

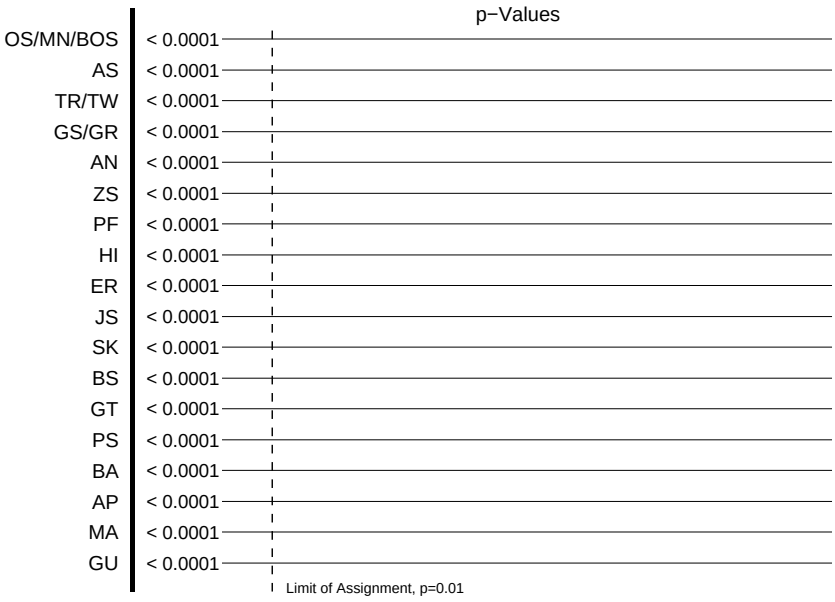
(Classification, Analysis ID: 1001/0690)

Ambigous Result - class "Strawberry" has highest p-value.

Following classes are available:

OS/MN/BOS = Orange/Mandarin/Blood-Orange, AS = Apple, TR/TW = Grape, GS/GR = Grapefruit, AN = Pineapple, ZS = Lemon, PF = Peach, HI = Raspberry, ER = Strawberry, JS = Black Currant, SK = Sour Cherry, BS = Pear, GT = Pomegranate, PS = Passion Fruit, BA = Banana, AP = Apricot, MA = Mango, GU = Guava





Verification Models

Applied Model: Lemon

Univariate Verification

(Verification, Analysis ID: 2011/0908)

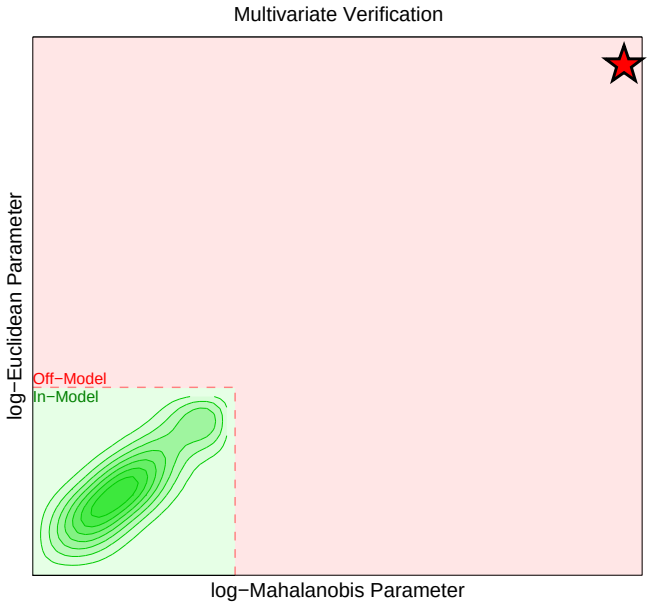
Result: Deviating signals were found at following chemical shifts:

1.581^{up} 1.586^{up} 1.592^{up} 3.588^{up} 3.594^{up} 3.600^{up} 3.606^{up} 3.612^{up} 3.618^{up} 3.624^{up} 3.629^{up}
3.635^{up} 3.641^{up} 3.823^{up} 3.829^{up} 3.835^{up} 3.841^{up} 3.847^{up} 3.853^{up} 3.858^{up} 3.917^{up} 3.923^{up}
3.929^{up} 3.935^{up} 3.941^{up} 3.946^{up} 3.952^{up} 3.958^{up} 3.964^{up} 3.970^{up} 5.279^{up} 5.285^{up} 5.291^{up}
5.297^{up} 5.303^{up} 5.308^{up} 5.314^{up} 5.320^{up} 5.326^{up} 5.332^{up} 5.338^{up} 5.344^{up} 5.349^{up} 5.355^{up}
5.361^{up} 5.367^{up} 5.373^{up} 5.379^{up} 5.426^{up} 5.432^{up} 5.573^{up} 5.578^{up} 5.584^{up} 5.590^{up} 7.516^{up}
7.522^{up} 7.527^{up} 7.533^{up} 7.539^{up} 7.545^{up} 7.551^{up} 7.557^{up} 7.563^{up} 7.663^{up} 7.668^{up} 7.680^{up}
7.686^{up} 7.698^{up} 7.704^{up} 8.009^{up} 8.015^{up} 8.021^{up} 8.026^{up} 8.032^{up} 8.038^{up} 8.044^{up} 1.516_{low}
1.522_{low} 1.915_{low} 1.921_{low} 1.927_{low} 1.933_{low} 1.945_{low} 1.950_{low} 1.956_{low} 1.962_{low} 1.986_{low}
1.997_{low} 2.003_{low} 2.009_{low} 2.015_{low} 2.021_{low} 2.027_{low} 2.033_{low} 2.038_{low} 2.044_{low} 2.050_{low}
2.080_{low} 2.085_{low} 2.091_{low} 2.097_{low} 2.103_{low} 2.144_{low} 2.150_{low} 2.156_{low} 2.162_{low} 2.168_{low}
2.174_{low} 2.179_{low} 2.185_{low} 2.191_{low} 2.197_{low} 2.203_{low} 2.209_{low} 2.215_{low} 2.297_{low} 2.320_{low}
2.326_{low} 2.338_{low} 2.361_{low} 2.367_{low} 2.373_{low} 2.467_{low} 2.485_{low} 2.491_{low} 2.496_{low} 2.502_{low}
2.508_{low} 2.514_{low} 2.520_{low} 2.526_{low} 2.537_{low} 2.579_{low} 2.584_{low} 2.602_{low} 2.608_{low} 2.896_{low}
2.937_{low} 3.207_{low} 3.213_{low} 3.230_{low} 3.248_{low} 3.271_{low} 3.301_{low} 3.336_{low} 3.342_{low} 3.348_{low}
3.371_{low} 3.395_{low} 3.412_{low} 3.418_{low} 3.436_{low} 3.442_{low} 3.447_{low} 3.453_{low} 3.459_{low} 3.465_{low}
3.471_{low} 3.477_{low} 3.483_{low} 3.506_{low} 3.512_{low} 3.518_{low} 3.535_{low} 3.541_{low} 3.571_{low} 3.682_{low}
3.688_{low} 3.706_{low} 3.712_{low} 3.717_{low} 3.723_{low} 3.735_{low} 3.876_{low} 3.888_{low} 3.894_{low} 3.899_{low}
3.905_{low} 3.988_{low} 3.993_{low} 3.999_{low} 4.023_{low} 4.029_{low} 4.040_{low} 4.046_{low} 4.052_{low} 4.058_{low}
4.064_{low} 4.070_{low} 4.076_{low} 4.093_{low} 4.099_{low} 4.105_{low} 4.111_{low} 4.228_{low} 4.234_{low} 4.240_{low}
4.246_{low} 4.492_{low} 4.557_{low} 4.575_{low} 5.226_{low} 5.232_{low} 5.244_{low} 5.250_{low}

Multivariate Verification

(Verification, Analysis ID: 2011/0908)

Result: Sample was classified as Off-Model in multivariate verification.



Targeted Analysis

In the following tables the results of the quantitative analysis are given and compared to the A.I.J.N. reference ranges (if available). For concentrated products, results are expressed for juice strength.

- consistent with A.I.J.N.
- outside the A.I.J.N. limits (± 10%)
- outside the A.I.J.N. limits
- no A.I.J.N. reference range

N/Q: Not quantified (not detected or insufficient signal assignment)

Quantification Results:

(Analysis-ID: Q)

Compound	Result	Unit	A.I.J.N. (Lemon) Flag	min	max	SGF-Profiling n =413
5-hydroxymethylfurfural	N/Q	mg/l		-	20	not detectable
D-galacturonic acid	N/Q	mg/l		-	-	0 138
alanine	12	mg/l	↓	80	260	97 275
benzaldehyde	N/Q	mg/l		-	-	not detectable
benzoic acid	126	mg/l		-	-	not detectable
citric acid	41.0	g/l	↓	45.0	63.0	42.0 68.8
ethanol	N/Q	mg/l		-	3000	0 391
formic acid	N/Q	mg/l		-	-	0 14
fructose	0.6	g/l	↓	3.0	11.0	3.2 10.1
glucose	2.6	g/l	↓	3.0	12.0	3.3 10.9
isocitric acid	N/Q	mg/l	↓	230	500	222 631
lactic acid	20	mg/l		-	200	0 38
malic acid	N/Q	g/l	↓	1.0	7.5	1.2 7.8
methanol	N/Q	mg/l		-	-	42 136
phlorin	<5	mg/l		-	-	20 261
sorbic acid	N/Q	mg/l		-	-	not detectable
succinic acid	35	mg/l		-	-	11 64
sucrose	23.0	g/l	↑	-	7.0	0.43 6.4

Calculated Values:

Figure	Result	Unit	A.I.J.N. (Lemon) Flag	min	max	SGF-Profiling n =413
Glucose/Fructose ratio	4.32	-	↑	0.95	1.30	0.88 1.47
% Sucrose	88	%		-	-	3 37
Total Sugar	26.2	g/l		-	-	8.4 25.5