

## New European Pesticide Maximum Residue Levels for Baby Food Products

By Manfred Linkerhägner - Eurofins | Dr. Specht Laboratorien

**In 2003, the European Commission issued two directives<sup>1</sup> regulating pesticide residues in processed cereal-based foods and in infant formulae and follow-on formulae, for the first time below the 10 ppb level. After the 6<sup>th</sup> of March 2005, member states must prohibit trade in products which do not comply with these regulations.**

Based on the opinions given by the Scientific Committee on Food, these directives establish a general Maximum Residue Level (MRL) of 0.01 mg/kg for any individual pesticide in processed cereal-based foods, baby food, infant formulae and follow-on formulae. But for 28 individual pesticides and their corresponding metabolites, MRLs have been significantly fixed below 10 ppb. This is the case for pesticides or metabolites with an acceptable daily intake lower than 0.0005 mg/kg body weight. Most of the pesticides which have acceptable daily intake values lower than 0.0005 mg/kg body weight are already prohibited in the European Union. However, some pesticides degrade slowly and still contaminate the environment and thus may still be residually retained in the raw materials used for baby food production.

All MRLs must apply to the products as proposed ready for consumption or as reconstituted according to the instructions of the manufacturers. However, more and more baby food producers wish to refer to these new requirements, not only with regard to finished products but also to the raw materials used.

Since most of the customers require their samples to be tested not only for these 28 individual pesticides, but also for all other remaining relevant pesticides, the Competence Center for Pesticides - Eurofins | Dr. Specht Laboratorien - has developed a Multi Residue Method (MRM) which covers a wide range of pesticides on the one hand (up to



350 molecules at the 10 ppb level) and, on the other hand, can also be used to analyse the samples according to the strict criteria of the baby food directives.

This analytical approach is very economical from the customers' point of view, because for 24 of the 28 target analytes, only one extra measurement using liquid chromatography with mass spectrometric detection (LC-MS/MS) for the organophosphorus pesticides is necessary to achieve the required sensitivity. Organochlorine pesticides and Fipronil are determined by gas chromatography and electron capture detection (GC-ECD). For PTU, Haloxyfop, Fentin and Propineb Single Residue Methods have to be applied, because their physico-chemical properties do not allow an inclusion into an MRM.

The methods are applicable to infant formulae and follow-on formulae, cereal-based food and foods for infants and young children (e.g. jar food products containing fruits, vegetables and cereals) as well as to raw materials such as fruits, vegetables or cereals.

1) Commission Directives 2003/13/EC and 2003/14/EC

# Hygiene Inspection in the Food Industry

By Vibeke From Jeppesen, Eurofins Denmark



**With the current strong focus on good food hygiene, it is of great importance for the food industry to be able to demonstrate independent control of their hygiene standards.**

Of the greatest value for food companies would be that independent control is provided by a well-recognized player in the market and that analytical work is conducted by a laboratory accredited in accordance with ISO 17025. A further advantage of the collaboration between the food industry and independent hygiene inspectors is that the inspectors know the company and can act as professional sparring partners if a new hygiene issue or a

specific food safety problem should arise.

An example of such collaboration with a well-known food chain attracting a very high degree of consumer attention started nearly ten years ago between Eurofins and McDonald's in Denmark. The agreement involves unannounced inspections from Eurofins twice a year at every McDonald's restaurant in Denmark. The inspectors take 8 – 10 different samples (raw food, prepared meals, ice cubes, etc.) and make spot checks on the personal hygiene among the staff as well as assessing adherence to the internal McDonald's rules on shelf life of foods.

When the samples have been examined at Eurofins laboratories, the restaurant is informed of the results of its assessment for each parameter on every sample (acceptable/minor remarks/unacceptable). At the same time, McDonald's Head Office in Denmark receives a copy of the report.

Twice a year Eurofins has a meeting at McDonald's Head Office where statistics for the previous six months are presented to the management and proposals for changes in the analytical programme or the type of sample taken are discussed. This type of collaboration helps the producer to identify potential problems e.g. those caused by suppliers and to compare the hygiene standards in all the Danish restaurants. As a result of these meetings McDonald's may decide to change internal procedures for the handling or storage of foods to improve quality even further.

To ensure constant improvement in the understanding of hygiene standards, every restaurant is informed by Eurofins as to the meaning of each of the hygiene parameters and how hygiene problems can be prevented. The inspections of the restaurants are planned by Eurofins in a programme not disclosed either to McDonald's Head Office or to the restaurants - until the inspectors arrive unannounced.

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## Rapid Service for Nutritional Labeling

By Kelley Smith, Eurofins US

**The 1990 Nutrition Labeling and Education Act (NLEA)<sup>1</sup> describes the mandatory and voluntary requirements for nutritional labeling of most foods under the jurisdiction of the U.S. Food and Drug Administration (FDA) as well as the regulations for products governed by the U.S. Department of Agriculture (USDA).**

The NLEA regulations identify the nutrient components required for food products, create format

designs for the Nutrition Facts Panel; and establishes Daily Reference Values (DRV) and Reference Daily Intakes (RDI).

The industry average for analyses necessary for production of nutritional labels can exceed three weeks. Eurofins Scientific North America operations have set a new industry standard with the introduction of their 7-day Mandatory Nutrition Label Package with no surcharge.

Eurofins is able to provide this quick service because of strategic investments in equipment and staff at the Memphis, Tennessee and Des Moines, Iowa laboratories. Consolidation of services in the North American laboratories has provided the opportunity to exploit large sample volumes and streamline the processing of the tests for the Mandatory Nutrition label.

Introduction of this service is the result of a process that began over

a year ago, when mineral testing in North America, normally performed in five laboratories, was consolidated into a single laboratory located in Des Moines, IA. Given the larger instrument and staffing base, and the addition of a second shift, the Des Moines laboratory was rapidly able to reduce the cycle time for minerals. The Memphis branch could then focus on reducing the cycle time for vitamins and amino acids with the consolidation of HPLCs and samples from across the continent. Each laboratory has focused on optimizing a specific segment of testing.

Furthermore, specific inter-lab communications were implemented for transmission of sample data and

results between branches.

Sample submission forms for the 7-day Mandatory Nutrition label can be obtained either from [www.eurofinsUS.com](http://www.eurofinsUS.com) or by contacting the client service staff at the Memphis branch.

In addition to the 7-day package, Eurofins US also offers a database service for converting the product information to a camera-ready nutrition label format that can directly be used by a printing company.

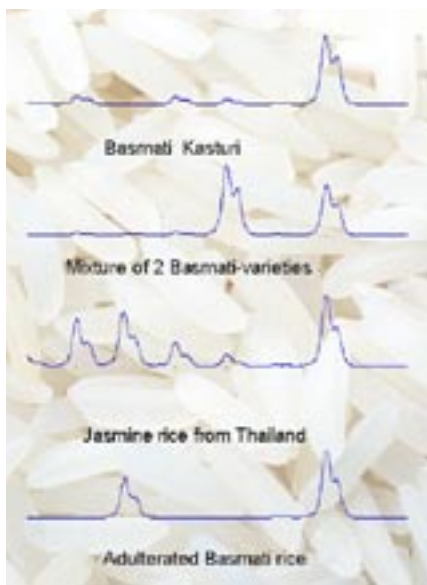
- 1) *The entire document outlining the Nutrition Label Education Act requirements can be found in the Federal Register 21 CFR 101 (FDA) and 9 CFR (USDA).*

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Nutrition Facts		
Serving Size 8 oz (240g)		
Servings Per Container 4		
<b>Amount Per Serving</b>		
<b>Calories</b>	300	
Calories from Fat	45	
Cal from Sat Fat	15	
<b>% Daily Value*</b>		
<b>Total Fat</b> 5g	9 %	
Saturated Fat 2g	8 %	
<b>Cholesterol</b> 15 mg	4 %	
<b>Sodium</b> 300mg	16 %	
<b>Total Carbohydrate</b> 42g	48 %	
Dietary Fiber 4g	22 %	
Sugars 9g		
<b>Protein</b> 21g		
Vitamin A 70%	Vitamin C 70%	
Calcium 50%	Iron 40%	
* Percent Daily Values are based on a diet of 2,000 calories per day. Your daily values may vary depending on your calorie needs.		
Calories: 280 150		
Total Fat	less than 4g	4g
Sat Fat	less than 2g	2g
Cholesterol	less than 30mg	30mg
Sodium	less than 2,400mg	2,400mg
Potassium	3,500mg	3,500mg
Total Carbohydrate	39g	39g
Dietary Fiber	2g	2g
Calorie per gram:		
Fat = Carbohydrate = Protein =		

## DNA Crackdown on Basmati Adulteration

By Werner Nader, Bert Pöpping and Rainer Schubbert, Eurofins Germany



**Only 16 varieties of rice cultivated in specific regions of the Gangetic Plains of Northern India and Pakistan have been approved by the Indian and Pakistani authorities as “Basmati” (the Hindi word for fragrant).**

Basmati is not only nearly twice as expensive as normal rice, but import tax for 9 historical land race varieties is only 14 €/ton in comparison with 264 €/ton for conventional rice and for 7 Basmati hybrid varieties (EU-regulation 2294/2003 amending regulation 1503/96).

The export of Basmati to the EU nearly tripled from 1998 to 2001.

Over 250,000 tons of Basmati are consumed each year by Europeans, about 70% of that within the UK. In the UK Basmati accounts for around 37% of the value of the dry rice market, amounting to £ 50 M per year.

Adulteration of Basmati with conventional long grain rice has frequently been reported. A recent study by the British Food Standards Agency (FSA) revealed that of 363 samples collected from a range of retail outlets and catering suppliers, 17% contained over 20% conventional rice, and of these, 9% contained more than 60% non-Basmati. 68 samples were labelled to contain a specific Basmati variety. Only in 19 samples was the declared variety predominantly present. 18 samples were labelled as “Super Kernal”, which is not an approved varietal name (Food Standards Agency: Survey on Basmati Rice, March 2004).

As far as the regulations are concerned, labelling of Basmati is covered by guidance of the FSA and by the Code of Practice for Rice developed by GAFTA (Grain and Feed Trade Association). The GAFTA Code of Practice for Rice permits the presence of up to 20% non-Basmati rice, but is currently being revised further to decrease this limit.

Similarly the European Union has revised its Basmati policy. Regulation No. 2294/2003 imposes stricter controls including use of DNA-analysis. The import of non-Basmati varieties and hybrid Basmati as land race Basmati is a tax fraud. A DNA-fingerprinting method to distinguish between different Basmati varieties was recently developed on behalf of the FSA. This formed the basis of an improved method now offered by Eurofins.

The method allows for the differentiation and quantification of different Basmati varieties, even in mixtures, and the detection and quantification of adulteration with conventional rice (commonly Sherbati or Pak 386). The method is not only suited to the analysis of brown rice, but also white and par-boiled rice and even highly processed rice products. Initial results with other premium varieties such as Thai Jasmine rice indicate that the method is suited to the detection of adulteration in these products as well. The analysis is performed by the Eurofins company Medigenomix in Martinsried, Germany. In a further application of microsatellite genotyping, the differentiation of coffee varieties is currently under development at Eurofins.

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## *in brief*

### **New Certification Services**

EuroCert, a new Eurofins Group company located in Paris, is exclusively dedicated to certification services and is currently in the process of obtaining accreditation in accordance with EN 45011. This initiative is in response to the requirements of the IFS - International Food Standard - applicable to food retail suppliers. The first IFS (version 4) auditors are now available and qualified. Pre-audits and training sessions for IFS version 4 can also be provided. EuroCert can also provide certification in accordance with other standards (e.g. IP certification) and act at an international level.

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### **Service Centre for Grain, Feed and Pet Food Now Open in Bremen**

Eurofins|Wiertz-Eggert-Jörissen has established a new feed, grain and pet food service centre in Bremen, Germany. With this new location, Eurofins has now completed a chain of laboratories from the Netherlands at Heerenveen to Germany's major import harbours Bremen and Hamburg, then up to Kolding in Denmark. The harbours of Bremen and Brake (located approximately 20 km north of Bremen) are major import terminals for feed and grain. The fishmeal terminal at Bremen is the largest of its type in Europe and a major portion of the German feed, meat and pet food industry is concentrated in the vicinity of Bremen. The new service centre

offers rapid analysis of parameters which determine the quality of the feedstuff. Protein, fat, ash and fibre are the basics of the traditional Weender analysis. Other parameters such as enzyme, soluble organic matter, starch and sugar are analysed for the determination of the available metabolic energy. Most of these parameters are measured within one day in the service centre, on the condition that samples arrive before 10:00 am. Furthermore, the new location provides a rapid transport system for samples to the Eurofins Competence Centres for analysis of mycotoxins, pesticides, heavy metals, dioxins, WHO-PCBs, vitamins and amino acids in Hamburg, Münster and Kolding. This unique one-stop-shop Eurofins concept enables the centre to provide very specific analysis, e.g. animal species differentiation by PCR.

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### **Faster BSE Testing**

For the EU validation study of a new test known as CediTect® BSE, the Dutch company, Cedi Diagnostics, sought a reliable partner with a highly qualified team. Eurofins|Analytico in the Netherlands has been accredited for BSE testing since February 2002 and was the partner of choice. During the study, the laboratory in Heerenveen analysed over 6,000 samples of brain tissue with the accredited Western Blot technique and the CediTect® BSE. The results confirmed that CediTect® BSE is a highly reliable test with a specificity

of 100%. Even more impressive: a total of 100 samples could be analysed within 4.5 hours! This was a significant improvement for slaughterhouses waiting for their results. The EU approval process for CediTect® BSE is currently in progress. A decision is expected shortly.

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### **GeneScan USA Receives Fourth Consecutive Pinnacle Award**

Procter and Gamble (P&G) has awarded the GeneScan USA laboratory with the prestigious Pinnacle Award for Excellence in Good Laboratory Practice and Quality Systems. As part of its quality assurance program, P&G conducts vendor audits to provide independent assessments of the current conditions in facilities that manufacture, handle, or store its products. To obtain a satisfactory assessment, a laboratory must demonstrate its commitment to achieving high technical standards, maintaining operational efficiency, and improving its processes to ensure customer satisfaction. This is the fourth consecutive year that the GeneScan USA laboratory, located in New Orleans, Louisiana, has achieved this distinction. Last month, the laboratory also successfully renewed its ISO/IEC - 17025 accreditation by the American Association of Laboratory Accreditation (A2LA) for the detection and quantification of genetically modified food and agricultural products.

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