

Official food control in Germany

M. Roth, Ministry of Agriculture, Baden-Württemberg, Germany
Kernerplatz 10, D-70029 Stuttgart, e-Mail: Posteingangsstelle@bwlmlr.bwl.de

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Overview

- First some **remarks** pertaining to Europe
- secondly something about the **German food regulation** emphasizing the legislative process.
- Thirdly I'm going to talk about the **German food control** including the administration of food control, the staff and last but not least the costs of food control.
- Then we come to **food safety**, the inspection of food premises and samples and
- finally I'll show you some **results** of the chemical and veterinary official laboratories of Baden-Württemberg.

1. some remarks pertaining to Europe

Since 1993 the common European market is a reality. We have an area without borders where the free exchange of goods, persons, services and capital is guaranteed. The common market has altogether 365 Million people (that means 365 Mio consumers!)

Safeguarding health and protection of the consumers interests against deception and fraud is essential. To reach this aim the European Community harmonized the food legislation. That's the reason why German regulations are dominated very much by the European legislation.

The enforcement of the EU legislation has to be done by the Member States. Responsibility for enforcement should remain primarily a national, regional and local responsibility. **However, each Member State has a duty towards not only to its own citizens but to all citizens of the EU for the food produced on their territory.**

2. German food regulation

2.1. History

- Initiated by Bismarck 1879 the first Law on Foods and Commodities was laid down. The implementation of this law was rather difficult because there were no trained persons to do the job. Even after years there was no satisfying development so that Bismarck created 1894 a totally new university education. **Herewith the profession of food chemist for official food control was born.** Since more than a century we have in Germany scientifically trained experts especially for the official food control. Sampling, analyzing and on-the-spot inspections have been up to now the backbone of food control.
- 1927, 1936 and 1958 the law was essentially amended.
- 1974 a new Law on Foods and Commodities with 9 chapters and 61 sections came into force

2.2. Regulation

The next chart shows the main chapters of the Law on Foods and Commodities

Chapter	
1	Definitions of foods, additives, tobacco products, cosmetics, commodities etc. We are all conscious of the lack of these definitions in the EU legislation. Each member state has different ideas about foods, drugs, additives etc.
2 - 5	Marketing of foods, tobacco products, cosmetics Marketing of commodities: commodities are products in people's environment e.g. eating, drinking, cooking utensils, other objects with contact of foods, cleaning agents, toys, textiles, bracelets etc.
6	General provisions: e.g. German food code, emergency powers in times of crisis, approval of exceptions
7	supervision and food monitoring
8	Imports and exports
9	Violations of German and European law

The Law on Foods and Commodities is the main act in food law in Germany. This Law is designed as a framework law. Specific provisions are laid down in separate ordinances like as horizontal regulations about additives, labelling, pesticides, contaminants etc.

2.3. Legislation process

Germany is a federal state with a central government and 16 Länder (states). The process of legislation is regulated by the German constitution. The central Government is for instance responsible for the defence, the Länder for the school system. On the area of food control we have a double system. Firstly, the central government is responsible for the legislation. If the central government does not pass a law the Länder may pass a law for their territory.

For instance before the hygiene council directive 93/47 came into force we had in Germany 16 different but very similar hygiene ordinances, one for each Land.

Another example: in Baden-Württemberg we passed a law about how to enforce the federal law on Food and Commodities. In the Baden-Württemberg-law we regulated for instance the problems of information of the public, the recall of foods or the internal control of premises. Some other Länder followed us.

Public warning is a delicate instrument: you have to take into consideration both the danger for the consumers health and the interests of the producers, importers or wholesalers in the specific case. The official food control has to avoid action for damages. Generally we talk a lot with the competent persons on the premises and usually we try to inform the public in concert with the premises.

An exciting public warning was necessary one week before Christmas 1997: our laboratories detected a forbidden veterinary drug, dimetridazol, in french turkey-hens. These products had to be removed from the market. It was a tense situation, because most of the turkeys were

already in the consumers kitchen. So we had to give the information to the press to warn all consumers.

But back to the legislation process:

the Länder participate in the process of the legislation by the Bundesrat, the chamber of parliament representing the Länder. No legal provisions are possible without approval of the Bundesrat.

3. German Food control

3.1. Principles of food control

Mentioned above the German official food control does not differ much from the EU principles:

Objective

- Safeguarding health
- Safeguarding consumer interests (protection againsts deception and fraud)
- Assurance of food quality and honest trading

Type of control

- routine (random) checks
- on suspicion
- in all phases of production, manufacturing, import, treatment, storage, transportation and sale
- as a rule without notice

Method of implementation

- Inspection of manufacturing premises
- Sample-taking and analysis of samples
- Inspection of written documents and data media
- Inspection of the companies own control systems, including measuring instruments

3.2 German Administration of food control

Central Government (for legislation only)

Länder Governments (for enforcement, that is the main task but the Länder are also responsible for legislation when the central government does not pass a law)

This "double system" is very innovative: one of the Länder has always an idea to pass a law, to pass some regulations, to require limits etc. and so the federal government and the other Länder as well have to react, have to form an opinion, have to think about.

An Example:

Baden-Württemberg implemented a Dioxin-monitoring of milk and registered suddenly an increase of dioxins in October 1997. Citrus pellets of the cow feed with contaminated lime stone from Brazil were the source of the contamination. We informed the competent authorities of the central government and of the other Länder. Half a year later the commission decided to set a limit for dioxins in citrus pellets. I'd like to emphasize: this monitoring was not caused by the central government but was the idea of an active food chemist in a state laboratory of Baden-Württemberg.

Another example

Some years ago a veterinary found a suspicious sample of calf liver. By looking at the heavy metals he detected high concentrations of copper. Other samples showed the same effect. Why do the farmers give copper to the calves? The answer is: for white meat ! Our labs analysed some hundred liver-samples, reported the results to our ministry and we convinced the central government to set a limit.

The federal structure supports the competition among the Länder and with the central government. We have a structure from the top to the bottom and from the bottom to the top. Sometimes the administration of 16 Länder and one central government is a little bit chaotic, but it is a creative chaos.

The Länder have a similar structure of administration on the area of food control. It is shown on the chart with special comments on the structure of Baden-Württemberg:

Administrative structure in the 16 Länder

Land Government/Senate

- Political leadership
- implementing regulations
- instructions to the local level

in *Baden-Württemberg*:

Ministry of Agriculture

middle tier of administration

- Supervision of implementation of area
- coordination

in *Baden-Württemberg*:

4 regional commissions

Administration area / communities

- Food control:
 - supervisory work
 - permissions
 - legal actions for infringements etc.

in *Baden-Württemberg*

44 local authorities

Beside the government structure we have a very active professional structure as you can see from the next chart:

Professional structure

The Gesellschaft Deutscher Chemiker (GDCh) is a very traditional association of chemists. The Society of German Chemists has about 30.000 members. The main group in the GDCh are the food chemists with 3000 members and 20 very active working groups. To all questions of food regulation or food enforcement there are competent scientific working groups of the GDCh. The administration and the science are interlocked.

To provide a uniform implementation the coordination between the Lander is very important. This work is done in the following way (see next table):

Coordination of Food Control

Food control is coordinated by several means to provide a uniform implementation:

Legislation

- meetings between the Lander and the Central Government
- discussions in the Bundesrat
- participation of the Lander in working groups in Brussels: at the Commission and in the Council

Enforcement

- working bodies and committees of the lander
- conferences of the ministers of the Lander

3.3 Staff in food control

The staff involved in food control in the different Länder has similar professions. The next table shows the kinds of professions with special comment on Baden-Württemberg:

Inspection of premises

- Scientifically trained experts: veterinarians, food chemists, medical doctors
Baden-Württemberg: ca. 100
- scientifically untrained persons: food inspectors
Baden-Württemberg: ca. 365 (food inspectors are basically educated policemen, after 6 years they get a 2 years special training for food control)

49 accredited state Laboratories in Germany

- Scientifically trained experts: veterinarians, food chemists, doctors
in specific cases: microbiologists, chemists
Baden-Württemberg: ca. 140
- scientifically untrained persons: specialized engineers, technical assistants, laboratory workers etc.
Baden-Württemberg: ca. 280

Staff involved in official food control in *Baden-Württemberg*: **nearly 900 people**

3.4 Costs of food control

- *Baden-Württemberg*:
Staff: ca. 100 Mio DM
compared with the 10 million inhabitants of BaWü each consumer pays 10 DM every year for the official food control
buildings: in the last 10 years new laboratories had been built for about 150 Mio DM

3.5 Samples

In all the Länder of Germany there exists the same key for the frequency of samples taken in the premises:

5 samples/1000 persons/year (2 samples/1000 persons/year for coordinated programs)

That means in Germany with its 80 million inhabitants we take nearly half a million samples. You may think that it is a big number but you have to realize the innovation rate of food industry: nearly 50.000 new products come into the market each year. But only half of the new products exist longer than one year (Makadom market analysis 1994 and 1998). I think it is absolutely necessary to analyse the new products. There is probably more danger with new products.

Some remarks to the organization of sampling in Baden-Württemberg

At the beginning of the year each of the 4 state laboratories makes a general sampling plan and give this plan to the food inspectors. 10 times each year the labs order a specific number of samples from the food inspectors. It is a very flexible system; you can adapt 10 times a year the general plan to the acute situation. The laboratories take into consideration the scientific information, the new technologies, the orders and the wishes of the ministry.

The food inspectors take the samples on all stages of production, manufacturing, trade etc. The samples are not payed. That is really difficult sometimes if you have to take 30 kilograms of pistachios for an aflatoxin-analysis or 30 kilograms of coffee for an ochratoxin A analysis.

Our food inspectors take samples of food, cosmetics, commodities, tobacco products. The consumers interests apart from these products is not their area of concern. I think that is a difference to your trading standard officers.

4. Food safety

4.1 Inspection of premises and samples

The council directive 89/397 says that each member state has to control premises and has to analyse samples. The frequency of premises inspection and of sampling has to be reported to Brussels each year. I think everybody knows these reports and I don't want to bore you with a lot of figures. Only two sentences: we do a lot of control and we do a lot of sampling. The main figure is: only 0,3 %/year of the samples are dangerous to health.

Control of premises in Germany 1999	
Number of all premises	1.123.667
Controlled premises	712.998
Number of controls	1.344.562
Premises with infringements	154.508
• hygiene (HACCP)	28.484
• hygiene in general	122.307

• composition	8.964					
• labelling	36.083					
• other	36.966					
Control of samples in Germany in 1999 (extract)						
Food	total	infringe- ments %	microbiol. contamin.	other contam.	compos.	labelling
Milk / milkproducts	82.377	4,7	1.631	447	1.131	3.869
meat, game, poultry	86.188	19,0	3.446	1.112	4.041	8.410
fruits, vegetables	38.083	9,2	317	812	603	1835
Wine	18.218	15,6	18	40	1.501	1.551
Icecream and desserts	26.627	22,0	1.632	70	494	1.652
food additives	13.054	15,6	41	95	291	1.810
commodities with contact to food	12.627	14,0	58	138	904	745
Dangerous to health: ca. 0,3 %						

In 1999 in Germany altogether 486.240 - nearly half a million - samples were taken and analyzed.

4.2 Chemical results

The chemical analysis in Baden-Württemberg is done by 4 official laboratories. To get an impression of the chemical work of these laboratories see next table :

Contaminants and residues in food in Baden-Württemberg 1999			
	Number of samples	with residues %	infringements %
Pesticides, total	5986		
• plants	2990	46	2,5

• food of animal origin	2248	51	0,4
Heavy metals	4772	-	3,3
Mycotoxins			
• aflatoxins B ₁ , B ₂ G ₁ G ₂	1075	27	8
• aflatoxin M ₁	440	0	0
• ochratoxin A	738	22	*
• patulin	128	20	*
• fumonisines, Trichothecens, Zearalenons	853	21,9	*
Veterinary drugs			
• antibiotics, chemotherapeutics	2086	5	2,3
• hormones	46	44	0
• β-agonists	63	0	0
• neuroleptica	240	0	0
PAH	254	38	4,7
Nitrosamines	105	0	0
Radionuclides	1155	-	-
PCDD/PCDF	631		*
genetically modified food	265	10,5	10,5
* no legal limit			

Remarks to the table

- The infringements of pesticides in plants have been increased since we use new methods such as extraction with carbondioxid and detection with liquid-chromatography and mass-spectrometrie
- A special chemical problem during the last years was high contamination of aflatoxin B₁ in spices and nuts especially from Turkey. The legal limit of 2 µg/kg was exceeded by 18 % of chilli-samples, by 50 % of nutmeg-samples and by 10 % of nut-samples. Concerning pistachio-ice-cream we also had complaints about 2/3 of the samples.
- It is absolutely necessary to set legal limits for ochratoxin A and the fumonisins
- Polyaromatic hydrocarbons were a problem both in unrefined oils (sunflower oil) and refined oils such as grape seed oil.

4.3 Microbiological results

Very important for food safety is the microbiological status of food. Diseases caused by Salmonella and other gastrointestinal infections were registered. The number decreased from nearly 200 000 cases in 1992 to 100 000 cases in 1999. In Baden-Württemberg we investigated several outbreaks of food-borne diseases. With a new method we detected the norwalk-virus responsible for 12 outbreaks.

5. Summary

The German food regulation is dominated by the European harmonization of **food legislation**. Because Germany is a federal state the Länder participate in the process of the legislation by the Bundesrat.

The principles of **food control** are full harmonized in the European Union. In Germany the 16 Lander are responsible for the enforcement of the food control. Working bodies and committees provide a uniform implementation and enforcement. The administrative structure on the area of food control is shown. The system is complicated but it works very well. The professional structure supports the creativity of the food chemists.

The **staff** involved in food control are food inspectors (in Baden-Württemberg policemen with a special training in food control) and scientifically trained experts like food chemists, veterinary and medical doctors. The whole staff are civil servants.

In Germany the **sampling** and analysis of samples is tradionally very important. 5 samples per 1000 people are taken in one year. The results show the necessity : 17 per cent of the examined samples have infringements. But only 0,3 per cent of the samples are dangerous to health.

The work of the 4 chemical and veterinary **state laboratories** in Baden-Württemberg is shown on the area of residues and contaminations. The principle from the bottom up to the top works very well and many ideas by motivated food chemist come via Länder-government to central government up to Brussels.

The official food control is regulated by the government and can not be privatized. The 49 accredited laboratories are state laboratories.