

# Effect of EU zoonosis and other legislation on European poultry meat production

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## Introduction

EU legislation in relation with poultry meat production is a fast and continuously developing field. As the number of EU member states is growing and there is urgent need to harmonize rules and regulations in order to create a level playing field.

There is a large number of Directives and Regulations in relation with poultry production and food safety aspects. Companies in EU Member States, but also companies exporting to the EU have to follow these Directives.

Mulder and Hupkes (2005) provide some background information on current EU Directives and regulations, which apply to poultry meat and equipment used for the production and safety of these foodstuffs.

In this paper the actual situation and ongoing developments concerning Salmonella, Campylobacter and other potentially pathogenic micro-organisms in poultry are highlighted and discussed, as are microbial criteria for foodstuffs.

Regulations with primarily economical, welfare or environmental impact will only be briefly mentioned.

## Background to European legislation

In the EU the use of hormones in all primary production is forbidden and as of 2006 all growth promoters are banned. There are increasing consumer concerns in relation to animal welfare friendly production under environmentally acceptable conditions.

EU animal production focuses on a number of areas such as food safety and animal welfare. Related legislative processes can be summarized as follows (Mulder and Hupkes, 2005):

- Safety (consumer health): by new methods to reduce the use of antibiotics /medicines; improve disease resistance; zoonoses control; traceability of animals and products
- Safety (product safety): stimulate and control hygienic processing, traceability of products and materials intended to come into contact with food
- Animal welfare: animals kept according to rules/systems; e.g. stocking density of broilers
- Product quality: improved quality and composition; quality and chain control systems; traceability of animals and products
- Environment: reducing environmental contamination, Nitrogen and Phosphorous. There is a critical look at the use of by-products of human food production. The re-use of by-products for non-food applications (feathers) should be encouraged.
- Rural impact, economic effects and bio-diversity

At forehand it is good to realise that all producers have to meet the criteria and processes mentioned in the EU directives. There is no different treatment for producers in the EU as well as for those who would like to bring their products to the EU.

## Legislation and Food Safety

As food safety has emerged as a top consumer concern, it has as a consequence, become an issue of the highest priority. The EU integrated approach to food safety aims to assure a

high level of food safety, animal health, animal welfare and plant health within the EU through coherent farm-to-table measures and adequate monitoring, while ensuring the effective functioning of the internal market. The implementation of this approach involves the development of legislative and other actions.

In the year 2000 the EU has announced a drastic change in legislation with regard to food. With the publication of the EU "White paper on food safety" ([http://ec.europa.eu/dgs/health\\_consumer/library/pub/pub06\\_en.pdf](http://ec.europa.eu/dgs/health_consumer/library/pub/pub06_en.pdf)) clear goals were set to introduce consistency and clarity throughout the whole production chain. The White Paper proposes an action plan with a wide range of measures to improve and bring coherence to the Community's legislation covering all aspects of food products from "farm to table". The new legal framework covers animal feed, animal health and welfare, hygiene, contaminants and residues, novel food, additives, flavourings, packaging and irradiation. It includes a proposal on General Food Law which embodies the principles of food safety such as

1. Introduction of the farm to table principle to hygiene policy,
2. The primary responsibility for the safety of food is with the food producers,
3. The traceability of all feed, food and food ingredients
4. The traceability of materials intended to come into contact with food
5. Proper risk analysis through a) risk assessment (scientific advice and information analysis), b) risk management (regulation and control) and c) risk communication,
6. The application of the precautionary principle if appropriate

On 21 February 2002 Regulation EC/178/2002 (General Food Law) came into force and by 1 January 2005 the law is full in force.

At the same time a new organisation was founded, the European Food Safety Authority (EFSA) with in each European country a related organisation, responsible for the "safety of food". Its opinions have to be based on sound scientific proof, which makes large parts of their work slow. The European Food Safety Authority (EFSA) is the keystone of European Union (EU) risk assessment regarding food and feed safety. In close collaboration with national authorities and in open consultation with its stakeholders, EFSA provides independent scientific advice and clear communication on existing and emerging risks

A new legal framework for food safety as well as a new legal framework for animal feed, improving animal health and welfare and product quality will be assured by better hygienic production conditions and less chances that products with contaminants or residues will come to the market.

The existing product specific directives, for instance Directive 71/118 on poultry meat and Directive 91/495 on rabbit meat and farmed game meat were repealed and replaced by three regulations: Regulation 852/2004 on food hygiene, Regulation 853/2004 on food hygiene of products of animal origin and Regulation 854/2004 on the organisation of inspections.

This proposal was already announced in the EU "White paper on food safety" and will introduce consistency and clarity throughout the whole food production chain.

### **EU Zoonosis Directive (2003/99/EEC)**

The EU Zoonosis Directive came into force in June 2004. Right now monitoring of 8 micro organisms in animals is mandatory (Table 1) and the risk related with these micro organisms should be evaluated. An additional list of zoonoses and zoonotic agents to be monitored depends on the local epidemiological situation and includes micro-organisms such as viruses, bacteria and parasites.

In the Directive regulations and provisions are taken with regard to the presence of micro-organisms which pose a potential threat to human health. EU member States have to monitor and control flocks and herds, although on this moment not all EU countries have an operational monitoring and control system

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Table 1. Micro organisms with potential public health priorities, listed in the EU Zoonosis Directive 2003/99/EEC

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Salmonella spp.  
Campylobacter spp.,  
Listeria monocytogenes,  
VTEC-E. coli,  
Cryptosporidium spp,  
Echinococcus,  
Trichinella  
Brucella

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Closely related with the Zoonosis Directive is Regulation 2160/2003, a framework regulation, with the primary aim to insure that effective measures will be taken to decrease the occurrence of Salmonella spp. of significance for public health in different categories of poultry and pigs.

In order to harmonize methodology, so called baseline studies provide the Commission with data which support the setting of Community targets as provided in Regulation 2160/2003. All EU member states have produced data on the Salmonella prevalence in poultry breeders, layers and broilers respectively. Similar data collection in turkeys and pigs is ongoing.

For the implementation of 2160/2003 specific regulations were produced. Commission Regulation 1003/2005 sets targets on the reduction of (5 specified serotypes) Salmonella prevalence in breeders; Regulation 1168/2006 sets targets on reduction of *Salmonella enteritidis* and *S. typhimurium* prevalence in layers and Regulation 1177/2006 gives requirements for the use of specific control methods of Salmonella in poultry, eg. vaccination or antibiotic treatment..

In this regulation the use of antibiotics is generally discouraged since the risk for selection and distribution of antibiotic resistant strains form a risk. Specific antibiotic use is permitted under two conditions:

1. in case of genetically valuable types of poultry and
2. when clinical problems in poultry occur.

The use of antibiotics should not be permitted in national Salmonella control programs with exception of before mentioned specified conditions.

Vaccination is considered to be an additional measure to increase resistance against Salmonella and to inhibit spread of the micro-organism. Use of a live or inactivated vaccine is permitted during the entire production period, with exception of the pre-slaughter waiting time. Live vaccines can only be permitted when the vaccine strain can be distinguished from field strains.

According to the Zoonosis Directive Campylobacter and Salmonella should be absent (in 25g of product) in poultry meat products in the future (2011). In actual practice this means that without additional preventive measures these goals can hardly be reached. Maximum hygiene in the livestock phase together with the optimal use of processing equipment might not be sufficient, so an additional measure being final product decontamination is allowed. Over the years the European vision on hygienic slaughtering of poultry has set the infra structural goals for the poultry processing industry. It is based on descriptive goals for management, building infra structure, equipment and utensils, inspection systems, refrigeration and storage, product temperature and product certification. It implicitly prohibited product decontamination ("only water of drinking water quality is allowed to be used as process water", but as mentioned above with the recent amendments product decontamination under conditions is accepted) and stimulates air (spray) chilling ("when immersion chilling is used a large number of specific demands have to be met"). It sets goals

for the knowledge and experience of the veterinary inspectors and it defines quite specific what product deficits have to be declared unfit for human consumption.

### **Anti Microbial Growth Promoters (EC Regulation 1831/2003)**

Since 2006 in animal feed no antibiotics, used as growth promoters are allowed. Antibiotics may only be used for therapeutical application. With the ban resistance problems can be controlled better. The regulation in fact is of concern for the last four products that were still allowed since the ban of human medicine related products.

The search for alternatives produces a long list of products that are approved by EFSA.

### **Microbiological criteria for foodstuffs (Regulation 2073/2005)**

Microbial criteria can be used as a validation and verification tool for HACCP based processes and other hygiene control measures. Microbial criteria can be used in EU legislation as a way of risk communication about the level of hazard control. They offer some assurance that particular pathogens will not be present in unacceptable high numbers, but cannot guarantee absence of these pathogens.

Regulation EC 2073/2005 on microbiological criteria of foodstuffs covers two types of criteria: 1. Food Safety Criteria and 2. Process Hygiene Criteria.

Food Safety Criteria cover the entire food production chain and “forces” producers to meet the criteria and indirectly may contribute to food safety and public health. Microbial criteria should not be considered without other aspects of EU food legislation such as HACCP principles and official controls to audit Food business operations (EFSA Journal 2007: 462; 1-29). Process hygiene criteria represent the indicator of the acceptable functioning of HACCP in food production systems. It sets indicative contamination levels above which corrective actions should be taken.

Microbial criteria covers meat including poultry, meat products, milk and dairy products, egg products, fishery products and vegetables, fruits and products thereof. Rules for sampling and sample preparations are also described. The regulation contains criteria for Salmonella, total aerobic colony counts and Enterobacteriaceae colony counts in poultry meat or egg products.

In this list Campylobacter is not included

### **Carcass decontamination**

In contrast with the US and other countries, carcass decontamination is not allowed in EU countries. International trade and the internal pressure to meet the future Salmonella and Campylobacter targets however, have contributed to a more open attitude. The subject is now on the agenda in Brussels, where EFSA advised on several decontamination chemicals in so called opinions (EFSA Journal 2005 297:1-27; EFSA Journal 2005 306:1-10; EFSA Journal 2006 342:1-6; EFSA Journal 2006 352: 1-6)

In EU Regulation 853/2004 of the European Parliament and of the Council of 29 April 2004 removal of surface contamination from products of animal origin is allowed under certain restrictions, with chemical substances that are approved. The use of decontamination shall however not be used without fulfilling the requirements of hygienic food production.

The Member States can propose which additional substances should be added to the list. Not all EU members do support the decontamination process and circumstances, conditions and environmental effects have to be defined. At this moment DG Envi concerns about resistance of bacteria against chemicals and the effect of these chemicals on the environment.

By adopting carcass decontamination a more harmonized processing situation will be developed worldwide.

### **Machine directive (Directive 98/37/EC)**

Directive 98/37/EC (updating 89/392/EC) sets general conditions for machine manufacturers to place only equipment and systems on the market that can be operated in a safe (general) and hygienic (machines for the food, pharmaceutical and cosmetic industry) way.

The new regulation, 178/2002/EC (General Food Law), fully in force since 2005, will not permit countries not to fulfil the requirements as described.

### **Avian Influenza (Directive 92/40/EEC)**

European legislation on Avian Influenza in Directive 92/40/EEC contains measurements to be taken in case of presence of the AI virus. A EU decision 2002/637/EU was made on the permanent surveillance system in poultry, including migration birds. Before that, legislation on the quarantine period of 30 days of imported birds was made (2000/666/EU). In legislation from 1991 (91/494/EEC) prohibits import of poultry meat from countries where AI was detected in the past six months.

From December 2005 European Member States were allowed to vaccinate against AI (2005/94/EU)

### **Welfare legislation**

Early May 2007 the European Agriculture ministers agreed upon the welfare regulation for broilers. There the stocking density of 39 kg/m<sup>2</sup> as off 2010 was defined. Depending on the welfare status of individual farms, the density may be extended up to 42 kg/m<sup>2</sup>.

The effect for the local broiler production industry cannot be predicted till its full extent now. Van Horne et al (2005) do expect a negative effect for the Dutch broiler industry when the density would descend.

### **Conclusions**

EU legislation in relation with food safety with its basis in the General Food Law is very complex and continuously under construction.

The new Zoonosis Directive (2003/99EC) is in force now, but the details for the framework legislation (EC/2160/2003) have to be filled in, so effective measures can be taken to decrease and control the occurrence of significant zoonosis agents for public health. EFSA plays an important and coordinating role in the collection of data on zoonotic agents and in the risk analyses with these data. The commission considers EFSA an important link in a chain of making legislation. EFSA writes scientific opinions on a wide variety of subjects, and addresses therewith epidemiological questions of food-borne zoonosis. EFSA is also responsible for publishing annual zoonosis reports.

Baseline studies on Salmonella were and are being performed and establish the present prevalence of zoonotic agents in EU member states. On basis of these baseline studies future targets for controlling Salmonella are set with different consequences for individual Member States. This will lead to a level playing field within EU and unavoidably sets targets for imports from third countries.

Recently legislation about the use of antibiotics and vaccines to control Salmonella in poultry was completed. Legislation about carcass decontamination is to be expected soon and contributes in harmonizing the international trade situation with countries outside of the EU.

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