



Disposal of Gastro Waste in the Czech Republic Related to Valid Legislation

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Abstract

Although the decisive Council Directive 1999/31/EC, on landfilling of waste, which binds the EU member countries to drastically reduce the landfilling of biowaste, the European legislation has not dealt with the questions of gastro waste disposal in detail to date. The directive decrees to reduce the volume of such waste disposed in landfills to 35% by 2020 related to 100% of the produced biodegradable waste in 1995. Directive 2008/98/EC of the European Parliament and the Council on wastes requires changes in the legislation of the EU member states in the form of accepting relevant legislation regulating biowaste disposal. Apart from the major goal of making a legislative framework for the use of such waste, the legal norms concerning the issue of biodegradable waste also strive to ensure the protection of public health and environmental soundness during waste processing. The importance of meeting the legislative principles becomes especially clear in gastro waste disposal as the risks of microbial contamination are particularly high.

Keywords: legislation, gastro waste, biodegradable waste, health risks

Gastro Waste

The recent years have seen an increased interest of the authorities of the European Union and of the member states as regards food waste disposal. Such wastes may be expected to be soon included in the programmes of waste prevention. This large and varied group of wastes generally divides into several basic groups, namely wastes from the primary production and processing of food-industry materials, wastes from food-processing, wastes from packaging, transport and sale, as well as kitchen waste (gastro waste) arising from the consumption of food in households and various catering facilities.

Among gastro waste there are various types of biodegradable wastes, such as plant waste (root crops, vegetables, fruit, herbs, etc.), waste of animal origin (meat, bones, feathers, egg shells, sea shells, skin, etc.), waste fat and oil, as well as high amounts of closely unidentifiable leftovers. According to the valid Decree 93/2016 Coll., on the Catalogue of wastes, as amended, gastro waste is classified under catalogue No. 20 01 08 – Biodegradable waste from the kitchen and canteens, while this group includes, apart from the gastro waste from the municipal sphere, wastes filed as No. 02 02 – Wastes from the production and processing of meat, fish and other food of animal origin and No. 02 03 – Wastes from the production and processing of fruit, vegetables, corn, edible oils, cocoa, coffee and tobacco.

It is important to emphasize that gastro waste of animal origin falls into the above mentioned group of biowastes, but at the same time, it must be considered as an animal by-product that is not meant for human consumption, in line with Council Directive 749/2011/EU of 29 July 2011 thus amending Regulation 142/2011/EU of 25 February 2011, implementing Regulation of the European Parliament and the Council 1069/2009/EC laying down health rules for animal by-products and obtained products not intended for human consumption, and implementing Council Directive 97/78/EC, as regards certain samples and items exempt from veterinary checks at the border.

Considering the fact there is no legal obligation to collect separated gastro waste, only estimations of its production volumes in the Czech Republic (CR) may be given. One citizen of the Czech lands annually consumes approximately 830 kg of food. Based on the experience from Germany, we assume that at least 10% of the food turns into waste. This means that recalculated to the population of the CR (10 505 445 people according to the data by ČSÚ of 2012), the total country annual production of gastro waste is about 870 million of kilograms. In fact, this figure must be underestimated. According to the qualified estimates of the European Council concerning the division of the food waste flows, we may say that households produce as much as 42% of the overall gastro

waste, food production is responsible for 39% of gastro waste, sale for 5% and the sector of public catering is accountable for about 14%.

Large volumes of gastro waste arise not only in households, but also in the facilities of public catering. In practice, the disposal of such waste is often neglected within waste management. We may say that gastro waste from restaurants, hotels, cafés, school canteens, hospitals, welfare institutions, food stalls, etc. is not usually in the centre of catering facility operator's interest. Unfortunately, it does not get due attention of authorities responsible for the state administration.

Disposal Of Kichten Waste

Dealing with the issues related to gastro waste management and disposal, it is vital to take into account that all food products of animal origin may be sources of potential health risks both for humans and animals, or may cause serious contaminations of the constituents of the environment. Those potential risks need to be diminished, which may be achieved via a complete elimination of the waste in question by means of direct and controlled disposal or its material recovery. In case of the material recovery option, strict legal obligations need to be complied with.

Incorrect management of gastro waste of animal origin may cause the genesis and spread of a wide range of serious human and veterinary diseases, whose pathogenous originators find suitable conditions for their development and replication in such biological material. This way, they may fast spread contagious spongiform encephalopathies (including BSE), foot and mouth disease, swine fever and endemic diseases caused by bacteria of *Escherichia coli O157*, *Campylobacter* spp, mycobacteria, representatives of the bacterial genus *Salmonella* and many others. Other risk factors in dealing with gastro waste are odour, abundance of microorganisms and occurrence of insects and rodents. Such risks may directly endanger the staff who handle the waste, but the forming bioaerosols may contaminate the air in the radius of several tens of meters in the waste processing facility. It is thus always important to strictly adhere to valid sanitary, operation-technological and other regulations, which leads to a minimisation of the impending risks.

The decisive legal regulation for handling gastro waste and prevention of health and environmental risks is the above mentioned Regulation of the European Parliament and the Council 1069/2009/EC of 21 October 2009 laying down

health rules for animal by-products and obtained products not intended for human consumption, which substitutes the earlier Regulation of the European Parliament and the Council 1774/2002/EC of 3 October 2002, laying down health rules for animal by-products not intended for human consumption. The implementing regulation of the document is Commission Regulation 142/2011/EU of 25 February 2011, whose substantial part is the definition of limit concentrations of pathogenic microorganisms in gastro waste.

Although there is no legal regulation, either in the European Union or the Czech Republic, to solely concern gastro waste management, other legal provisions may be used for the issue. For catering services, it is mainly Regulation of the European Parliament and the Council 852/2004/EC on the hygiene of foodstuffs (valid since 1 January 2006). It is a horizontal legal norm that determines general hygienic conditions for all levels of food production, processing and distribution. There it is possible to find the basics of other principles for handling gastro waste (e.g. definition of clean and dirty areas, hygienisation, sanitation, etc.).

In section 5 of the above mentioned Regulation, operators of food business (i.e. including community feeding premises) are obliged to make and introduce one or more continuous procedures based on the principles of Hazard Analysis and Critical Control Points (HACCP) and adhere to them. This system may be considered one of the basic tools to prevent the risks related to the safety of food and gastro waste. The general HACCP requirements have been implemented into relevant national regulations and are stated in Bulletin of the Ministry of Agriculture 2/2010 of September 2010.

Among the most important measures arising from the above mentioned principles and rules there are the requirements for separation, collection and storing of wastes in the place of their origin. This means that food-industry waste, inedible by-products and other wastes must be as fast as possible removed from the premises where food occurs, while they must not be stored in places where foodstuffs or food products are handled. The wastes must always be placed in due vessels if operators of food businesses cannot persuade the relevant authority on the suitability of other types of vessels or clearance systems. The vessels must have a suitable construction, must be made from material easy to sanitize, must be lockable and clearly labelled for their purpose.

In addition, they need to be kept in the proper manner and be easy to clean and disinfect when needed. Single-use plastic bags may be used to collect the waste in the premises, where there are not the conditions for sanitation of the collection vessels or if the waste character requires so. Storing and disposal of the mentioned waste must be ensured in a due manner. Waste disposal site must be designed and managed in a way that permits their upkeep and undesirable access of animals must be prevented.

The regulation also stipulates the fact that all the food waste must be disposed of in a hygienic and ecological manner in line with the relevant EU legal regulations and must not constitute a direct or indirect source of contamination. When handling and storing the waste, possible cross-contamination must be prevented. The facility for waste compression must be separated from the all the premises, where food is handled. Similarly, bins, vessels and means of transport used to carry the waste must be cleaned in a specified area. This area must be situated and constructed in a way that prevents the risk of contamination of the processed products.

Health Safety Measures

If we handle gastro waste that shows the presence of pathogenic microorganisms which may cause or already have caused infection diseases, it must be treated as hazardous waste and all regulations related to such waste management must be adhered to. It is always important not only to prevent the penetration of pathogens into the surroundings, but also to protect the health of the staff who come into contact with the waste, when performing their work duties. In line with the legal regulation, the minimisation of risks when dealing with contaminated gastro waste and staff health protection may be divided into three mutually interconnected areas.

In the first place, it is the legislation included in Act 262/2006 Coll., Labour Code, as amended, to which relates Act 309/2006 Coll., stipulating further requirements for health and safety at work in labour - law relations and ensuring safety and health in activities or within services provided outside of labour - law relations, as amended, as well as Government Decree 361/2007 Coll. laying down conditions for employee health protection at work, as amended.

Next, there are legal regulations in the area of health care, among which the most important is Act 258/2000 Coll. on the protection of pub-

lic health, as amended. Logically, when dealing with gastro waste containing infectious agents, it is vital to adhere to the provisions of Regulation 432/2003 Coll. determining the conditions for classifying work into categories, limit values for indices of biological exposure tests, conditions for sampling biological material for doing exposure tests and requisites for reporting work with asbestos and biological agents, as amended, or the relevant requisites of Decree 306/2012 Coll. on conditions for the prevention and spread of infectious diseases, and hygienic requirements for the operation of medical facilities and social care institutions, as amended.

Last, but not least we must mention the legislation on waste management. Currently, a new act on waste is being discussed in an amendment procedure, which should simplify and clarify the legal framework of waste management, including the implementation of relevant European standards. In connection with this act, an amendment is being prepared to Decree of the Ministry of the Environment (ME) 294/2005 Coll., on the conditions of waste disposal in landfills and their utilisation on ground surface, and amendments to Decree 383/2001 Coll., on the details of waste management, as amended. This last Decree has already been amended, namely by Decree 83/2016 Coll. of 16 March 2016, as amended.

In connection with the prepared changes, Decree of the ME 381/2001, Coll. on the Catalogue of wastes, as amended, has already been cancelled and substituted by Decree of ME and of the Ministry of the Agriculture 93/2016 Coll. on the Catalogue of wastes, as amended, which takes into account the Commission Decision 2014/955/EU of 18 December 2014, amending the Commission Decision 2000/532/EC, on the list of wastes, according to the Directive of the European Parliament and the Council 2008/98/EC.

For the same reason, the Decree of the ME and of the Ministry of the Agriculture 376/2001 Coll., on the evaluation of waste hazardous properties, as amended, was cancelled, and it was substituted by Decree 94/2016 Coll., on the evaluation of waste hazardous properties, as amended, the wording of which especially mirrors the provisions of Regulation 1272/2008/EC of the European Parliament and the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation 1907/2006/EC (Text with EEA relevance), or also the wording of Commis-

sion Regulation 1357/2014/EU of 18 December 2014 replacing Annex III to Directive 2008/98/EC of the European Parliament and of the Council on waste and repealing certain Directives. In the regulation in question the lawmaker stipulates that materials in which contents of infectious agents are identified must be evaluated in line with Annex I of the Regulation – Complementary limit values and criteria to assess waste hazardous properties HP 9, HP 14 and HP 15, while the classification of HP 9 Infectious is determined based on the rules set in Government Decree 361/2007 Coll., which determines the conditions for health protection at work, as amended, and in line with Decree 306/2012 Coll., on conditions for the prevention and spread of infectious diseases, and hygienic requirements for the operation of medical facilities and social care institutions, as amended.

The assessment of a hazardous property is always carried out taking into account a number of aspects (description of waste formation, processing technology, the risk of occurrence of infectious agents). In a joint assessment the occurrence of microorganisms is evaluated especially in terms of their pathogenicity, namely in the place and time of waste production, while the dead specimens are not considered infectious. Toxins that are produced by such microbial pathogens are taken as chemical substances, which implies the following classification of waste hazardous property H 6 Acute toxicity.

Based on the above stated legal regulations the contaminated gastro waste must be classified in line with the valid Catalogue of waste in Waste Group 18 01 03 – Wastes, for the collection and disposal of which there are special requirements with respect to infection prevention. Infectious waste is all the waste with identified occurrence of infectious agents or waste from all premises/spaces, where waste may get infected by an infectious agent in an amount that makes the waste a waste with a hazardous property HP 9 Infectious.

No matter what processing technology or disposal methods for gastro waste, evaluated or classified as mentioned above, are used, it is vital that health and environmental protection rules are strictly adhered to throughout the whole waste handling cycle. It is essential that gastro waste with property HP 9 was stored in closely lockable, impermeable and duly labelled vessels. The labels must be placed visibly and must contain all the necessary requisites (name of waste type, catalogue number, waste category, time of waste formation, name of a person responsible for waste

loading and labelling, waste mass – estimate, graphic symbol for the waste hazardous aspect in line with § 13 of Act 185/2001 Coll., on wastes, as amended, and labelling for further waste disposal – combustion, etc.).

Prevention

The issue must also be considered from a different perspective that is represented by the declared strategy of waste management in the European Union countries, as for example stated in the Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions “Towards circular economy: A zero waste programme for Europe – COM 2014: 398 final”. One of the major aims of modern waste management is the principle of waste prevention. In the national conditions it is the case of fulfilling the wording of § 9a Hierarchy of waste handling of Act 185/2001 Coll., on wastes, as amended.

Currently, there are two topical documents concerning the prevention of gastro waste formation on the EU level. It is a set of guidelines to create programmes focused on the reduction of such waste production (Guidelines on the Preparation of Food Waste Prevention Programmes - EC) and a methodology manual Prevention of Food Waste in Restaurants, Hotels, Canteens and Catering- Norden. In the working committees of the European Parliament they have been preparing an amendment to Council Directive 2008/98/EC of 19 November 2008, on wastes and amendments to some directives that should also consider the desirable prevention strategy.

It may be said that the currently valid Waste Management Plan of the Czech Republic (WMP CR) is taking the same course. It was published as an annex to Government Decree 352/2014 Coll., on Waste Management Plan of the Czech Republic for 2015-2024, as amended, the binding section of which declares some aims in order to comply with the above mentioned strategic principles. It is predominantly the aim to reduce the quantity of gastro waste of animal origin in the mixed municipal waste that originates from public catering facilities (restaurants, fast-food stalls) and central kitchens (hospitals, schools, etc.).

The other related regulations in WMP CR declare, for example, the need to duly handle waste from catering facilities, by-products of an animal origin with the aim to reduce health risks related to such activities, as well as support for a sys-

tem of regular collection and transport of animal by-products and gastro waste into approved processing facilities, particularly biogas plants and composting plants. In WMP CR the lawmaker also requires an introduction and execution of consistent checks of the disposal of waste from catering facilities and animal by-products in accordance with Regulation 1069/2009/EC of the European Parliament and Council of 21 October 2009, laying down health rules as regards animal by-products and derived products not intended for human consumption, as well as the duty of the responsible state administration bodies to observe and evaluate the development of waste disposal from catering and animal by-products, suggest and accept corresponding measures.

Material Recovery in Gastro Waste

At present, gastro waste disposal is regulated by Regulation 1069/2009/EC of the European Parliament and Council of 21 October 2009, laying down health rules as regards animal by-products and derived products not intended for human consumption, which says that gastro waste that contains components of an animal origin or has come into contact with such components cannot be used as food for animals. With regard to the fact that the majority of kitchen leftovers have such a character, their disposal must comply with the relevant legal regulations.

The European regulation in question divides all organic origin wastes into three groups. Gastro waste is Category 3 which is characteristic of the least strict requirements for biological risk protection and final processing. However, this classification may be seen as disputable due to frequent and easy contamination of gastro waste by diverse microbial pathogens. This category does not include gastro waste from international means of transport, though.

The stated legal document permits processing of gastro waste in biogas plants and composting plants, while such facilities must comply with very strict requirements in terms of protecting the health and environment. The requirements particularly include the size reduction of the feed material to particles of and below 12 mm, obligatory hygienization in a fermentation unit at 70°C for at least 1 hour, the final substrate or digestate must be separated from the feed material and must be subject to regular sampling and analyses in order to identify the potential occurrences of biopathogens, etc.

More simple is the situation during the processing of sorted residues of a plant origin from gastro waste uncontaminated by animal material and classified as 20 01 08 in line with the valid Catalogue of waste, as the wording of the above mentioned directive does not concern this fraction. Its processing is subject to Decree 341/2008 Coll., on the details of the management of biodegradable waste and amending Decree 294/2005 Coll., on conditions of depositing waste in landfills. It is also important to mention Act 156/1998 Coll., on fertilizers, as amended, and related Decree 474/2000 Coll., on the determination of requirements for fertilizers, as amended, and Decree 377/2013 Coll., on fertilizers storage and methods of the use of fertilizers, as amended, as they relate to the final products of gastro waste processing if used as fertilizers or applied on farmland and in forests.

In conclusion, we may state that the legislation dealing with gastro waste does not form a compact whole. Some legal regulations contradict one another in certain details or are ambiguous. In future, it is vital for lawmakers to clearly, concisely and accurately define the principles and requirements for such specific waste management and disposal, for example when approving a new act on wastes.

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Regulacje prawne dotyczące składowania odpadów gastronomicznych w Czechach

Dyrektywa Rady 1999/31/WE w sprawie składowania odpadów, zobowiązuje kraje członkowskie do radykalnego zmniejszenia ilości składowanych bioodpadów, jednak w ustawodawstwie europejskim brak szczegółowych regulacji dotyczących odpadów gastronomicznych (kuchenne). Dyrektywa odpadowa stanowi, że ilość odpadów biodegradowalnych ma być zredukowana do roku 2020 do 35% ilości odpadów składowanych w 1995 r. Dyrektywa 2008/98 /WE Parlamentu Europejskiego i Rady w sprawie odpadów wymaga wprowadzenia zmian w przepisach państw członkowskich UE w postaci przyjęcia odpowiednich przepisów dotyczących utylizacji odpadów organicznych. Oprócz głównego celu jakim jest tworzenie ram prawnych dla składowania tego typu odpadów, wprowadzane są normy prawne dotyczące ochrony zdrowia i stanu środowiska podczas utylizacji odpadów. Regulacje prawne dotyczące odpadów gastronomicznych są szczególnie ważne z uwagi na zagrożenie mikrobiologiczne.

Słowa kluczowe: prawo, odpady gastronomiczne, odpady ulegające biodegradacji, zagrożenie zdrowia