

Course in Food Hygiene



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This booklet is a complement to the course on Food Hygiene in which you participate. The most important points are presented here within the sections that make up the course. This material simplifies all the different sections and in order to get a deeper knowledge of each section you also need to watch the films. In some cases, you may also need to find information about your particular business elsewhere, such as through books or information on the Swedish Food Agency's website.

If you have further questions and thoughts about how to work in your particular business, please contact Krogarna.se

Best of luck!

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Legislation

The legislation that concerns food handling is flexible, which means that different businesses may have different requirements regarding facilities and equipment depending on the risks that are considered. EU regulations apply before Swedish legislation. There are also guidelines to help interpret the legislation.

The Food Act 2006: 804 - describes basic rules for handling food. It applies to everyone who handles food, except individual households. The purpose of the law is to ensure a high level of protection for people's health and consumers' interest in regards to food.

Food in this case is referring to edible products, drink, water, ice, stimulants or other products intended to be eaten by humans, with the exception of medicines.

Food facilities are all premises and areas where there is a constant and recurring handling of food. The facility also includes all associated spaces, such as warehouses, goods reception, staff rooms, cleaning scrub, garbage rooms, toilets and other associated premises.

Local requirements may vary based on the activity being conducted, but usually separate spaces are required for the dough room, dry cleaning, dishes and cleaning. The choice of material in the kitchen can also vary, as suitable materials are considered materials that are non-absorbent, durable and easy to clean. The areas where food is handled must be equipped with good lighting, good ventilation and functioning water and drains. The requirement for the number of work benches, hand wash basins and floor wells may vary depending on the business being conducted.

The concept **from soil to table** encompasses all stages of the food chain and all entrepreneurs bear their responsibility for managing food safely.

Contamination means that something becomes contaminated / dirty with substances that are not intended to be on the product.

Food inspection

The biggest inspection of the business is the process of self-inspection conducted by the entrepreneur.

Based on what risk class the business belongs to, the business is inspected by the inspection authority, in most cases the food inspector of the environment office. Inspectors are in charge of the inspection and shall conduct similar inspections throughout the country. The inspector has the right to enter the business and inspect, investigate, take samples and has access to various tasks and documents. Decisions made from an inspection can be appealed, in writing and within a certain time.

The licensee is obliged to pay a fee depending on the risk class it belongs to and how experienced it is. If the inspection authority needs to carry out an extra check, this will result in an extra charge.

The inspection is made to ensure that the consumer's health or interest is not jeopardized.

Food poisoning

In most cases, a **food poisoning** has a short incubation period. There is no significant increase in bacteria in the body and antibiotics are pointless. Food poisoning is not contagious among Humans.

A **food infection** has a longer incubation period and the symptoms usually persist longer and produce more severe symptoms than food poisoning. It can weaken the affected person significantly.

Symptoms of food poisoning or food infection

- Slightly upset stomach, tired, constitutional symptoms, headache
- Vomiting, diarrhea, fever
- Influences on the heart, blood, vision, breathing, muscles, brain, fetus during pregnancy.
- Death

It is most difficult for sensitive target groups such as children, the elderly and those with impaired immune systems / the sick.

If someone suffers from food poisoning, this should be reported as soon as possible to the environmental office in the municipality where they were affected, in order to prevent more people from getting sick.

Around 3000 food poisoning cases are reported each year in Sweden. The unrecorded figure is large and the authorities estimate that the actual number is around 500,000 cases per year.

The four dangers

There are four different dangers that can cause the guest / customer illness or injury. The entrepreneur has a responsibility to find out what dangers can occur in his or her own business.

The four dangers are microbiological danger, physical danger, chemical danger and allergenic danger, these will be presented below separately.

1. Microbiological danger

This danger involves several different living organisms that can cause the guest to become poisoned or ill by the food contaminated by these organisms. Below are the various microorganisms and what may be important to know about them in order to avoid and prevent anyone from getting sick from them.

Bacteria

Bacteria can be found all around us. Several bacteria can be carried by the staff themselves as part of their normal bacterial flora, but they can only cause food poisoning if they get in direct contact with the food. Some bacteria are brought in with the commodities being delivered to the business. The staff should always work from the outside to do everything they can to prevent the bacteria from growing and multiplying.

Bacteria's living conditions - what they need in order to grow and multiply.

- **Nutrition** - Protein, fat and carbohydrates
- **Moisture** - The bacteria does not thrive in dry conditions
- **Oxygen** - Some want access to oxygen, others do not
- **pH** - Most can withstand a pH value 6-9
- **Favorable temperature** - The danger zone is + 8 ° to + 60 ° where bacteria can grow
- **Time** - Determines how many bacterias grow if other factors are favorable

Killing of bacteria occurs at + 72 ° but not during freezing, where it rests. Some bacteria form spores that can form new bacteria. Other bacteria form toxin which is like a poison that can cause acute food poisoning. Some bacteria are both spores and toxins. Both spores and toxins are often difficult to get rid of and thus you could become ill from the food even though it has been treated under high temperatures.

When a bacteria multiplies, it divides itself. A common propagation rate for bacteria is once every 20 minutes. See the example below for how many bacteria may have grown after 10 hours.

Propagation of the bacterium *Clostridium perfringens*

Time	Number of bacterias
0	1
20 min	2
40 min	4
1 hour	8
2 hours	64
3 "	512
4 "	4096
5 "	32 768
6 "	262 144
7 "	2 097 152
8 "	16 777 216
9 "	134 217 728
10 "	1 073 741 829

Source: Hans Brådmark, 1998

Toxin / poison-forming bacteria - Often causes acute food poisoning

Staphylococcus aureus - naturally occurring on the skin and in wounds of many. A highly heat resistant toxin.

Bacillus cereus - often found in milk products, rice, vegetables, spices and powder products.

Clostridium botulinum - often found in soil, inlays, salmon and honey. Very toxic toxin. Bacteria that can form histamine.

Heat sensitive bacteria - Disappears when heated

Campylobacter - often found in chicken and pork but also beef.

Escherichia coli (EHEC) - mainly found in beef but also vegetables. The bacteria can form toxin.

Listeria monocytogenes - can occur in various places, equipment, salmon, dessert cheeses and cold cuts.

Salmonella - mainly in meat products, foreign eggs, salad and herbs.

Heat resistant bacteria - Hard to get rid of and may be persistent despite heating for a long time.

Bacillus Cereus - occurrence see above, forming spores and toxin.

Clostridium perfringens - is a soil bacteria that forms spores and toxins.

Clostridium botulinum - occurrence see above, forms spores and toxin.

Virus

Virus is also a microbiological danger. The most common virus that spreads through food in Sweden is Norovirus, what we call the Winter Sickness (Vinterkräksjukan). The virus can survive for weeks on different surfaces, it can not multiply in the food but a few virus particles are enough for someone to become very ill. Viruses are killed by heating to + 70 ° and with thorough cleaning and any disinfection. Risk foods are foods that should not undergo any further Heating.

Parasites

Another microbiological danger is parasites. Parasites are not very common in our food in Sweden. But they can be spread through vegetables, fish, meat, water, pets and pests.

Parasites are killed off when heated to above + 65 ° or below -20 ° for three days. This is why fish that will be marinated and sushi should be frozen before preparation.

Mold and yeast fungi

Mold can cause acute food poisoning, allergic reactions, pneumonia and, in the long term, kidney and liver damage.

Yeast mushrooms usually give a smell or change in taste and they can form gases.

Both mold and yeast fungi thrive in warm and humid environments and are prevented by proper handling of food.

2. Physical danger

A physical danger is various foreign objects that can cause damage or contaminate the food. Examples of a physical danger may be insects, stones, hair, glass, metal shavings, parts from packaging, implements, equipment and inventories.

Physical dangers are mainly counteracted by a good order and that the business has control over its basic conditions (see the next section).

3. Chemical Danger

A chemical hazard is a variety of foreign substances that can cause harm or poisoning. Examples of a chemical hazard are detergent residues, pesticides, it can be residues of medicines (for example, in meat), histamine (which is formed in tuna) and it can also be formed in foods when cooking.

The chemical dangers are usually counteracted by a good order and that the company has control over its basic conditions (see the next section).

4. Allergenic danger

An allergen danger is often proteins or substances that can cause the guest allergies or hypersensitivity. Examples of common allergens are nuts, fish, eggs, lactose, gluten, fruits and vegetables. For a person with allergies or hypersensitivity, extremely small amounts may be enough to cause symptoms. This may vary from person to person.

The allergenic dangers are usually counteracted by a good order and that the business has control over its basic conditions (see the next section). Therefore, you should be sure to separate goods, seal and label packaging, and to clean surfaces and equipment thoroughly.

Self-inspection according to HACCP

The licensee has the ultimate responsibility that the business has a functioning self-inspection program. Having a good self-control program is about preventive efforts to increase safety and traceability.

By regularly reviewing routines, the business gets a better overall control. The work is an ongoing process and the program must be updated as new knowledge, experiences or changes occur.

Working according to HACCP is to follow the seven steps presented below to achieve safety in your own business.

Step 1 involves performing a **danger analysis** that is representative of the business. The danger analysis should include a product description with the necessary facts to understand the process. Then you create a flowchart that should contain all the handling steps that occurs with the product. In the danger analysis, one must also identify the most common dangers in all stages and see what preventive measures the company takes in order to ensure that the dangers do not lead to someone becoming ill or injured.

In step two, identify any **critical control points** (CCPs) that may occur with the product. A critical control point is a point where you must always have control, because if you do not, there is a great risk that a consumer / guest / customer may become ill or injured. A CCP must always have a clear threshold for what is acceptable or not acceptable.

In step three, critical **limit values** are set, the entrepreneur decides which limit values should be valid in his or her business.

The next step, step four, is to set up **monitoring systems**, describing procedures for systems controlling the various handling steps.

When establishing the monitoring system, you go to step five, which is to introduce **corrective measures**. The entrepreneur decides in advance what to do if you find that the limit value has been exceeded / fallen below.

Step six is to **document**, this applies both to documenting routines and analyzes but also to the ongoing documentation for various inspections that have been carried out.

The seventh and final step is to regularly **verify** that the system is working. This means, among other things, that you check if you perform the pre established inspections and that the inspections are done correctly. If you notice that the inspections are not done properly or that you do not get what you want from the inspections, you have to revise your own inspection-program.

Basic conditions

In order for the business to function and be safe, many routines are well planned and based on the fact that they work through many different stages. These routines, which may be more general and apply as a basic framework in several management steps, are usually called basic conditions. The phrase good hygiene practice (GHP), includes several different basic working conditions.

Knowledge

Knowledge is one of the most important basic conditions. The staff must be trained and updated in food hygiene regularly and in proportion to the work being done. The licensee is responsible for the training of their staff so that they conduct a safe business.

Staff hygiene

Another important basic condition is staff hygiene. The staff working in the business must take responsibility for having clean hands, that nails are short and well-groomed, etc. If you have wounds, these should be covered with waterproof bandage. Jewelry should not be used when working with open foods, they counteract good hygiene and can end up in the food. Smoking is prohibited in premises where food is prepared, snus is not recommended. The business should also have devised hygiene routines for potential visitors. And when the staff should stay home from work, from a food-borne infection for example, it is usually recommended that they stay at home for two more days after the actual recovery. The staff should always inform the business manager / licensee about the status of their health, since he / she is responsible in preventing the spreading of infection.

Cleaning procedures

Cleaning procedures are also one of the most important basic conditions for a safe operation. It is recommended that you have cleaning instructions in writing and inform how often cleaning should be done. Cleaning equipment and the material used in cleaning must also be clean and the business must be able to show how these steps are followed.

Waste management

Another basic condition is the functioning of the waste management procedures. Waste must be sorted according to the municipality's requirements and containers should be placed so that they do not risk contaminating the food. The garbage should be emptied regularly and taken to spaces that are designed and taken care of in such a way that they do not attract pests.

Maintenance inspection

On a daily basis, the staff notices if something breaks and needs repairing. However, the operator should schedule regular maintenance inspections to ensure that all surfaces, all equipment (including scales and thermometers) and all inventories are easy to clean and are not worn, broken or leaking. A lack of attention in this area is noted in a maintenance plan, and also when action is being taken to restore deficiencies.

Pest control

Pest control means that you have control so that pests, which can carry disease or cause damage, have not entered - or have the opportunity to enter - the business. By carefully assuring the other basic conditions, you prevent the possibility of such problems.

Purchasing, traceability and labeling

In order to secure your operations and to have control over your products, an important basic condition is to keep track of your purchases and to have a functioning traceability system. The business must inspect and hire an approved supplier. The entrepreneur should be able to list all the suppliers and all the businesses they have delivered to. By saving leaflets and by asking suppliers to get information about any product being recalled, traceability can be maintained. Another important basic condition for this to work is that all products have the correct labeling (see rules in LIVSFS 2004: 27).

Materials in contact with food

Another basic requirement is that the materials that come into contact with food are classified as food. It shall be clearly stated what purpose the material is intended for. Marking must be in writing or with symbol (glass and fork). The material should, of course, be stored in a clean place to prevent contamination.

Separation

Separation is always important in all stages. Separation should be made of different types of food and one must distinguish between raw and edible foods.

The next chapter describes the flows of the business and many of these points are reckoned with good hygiene practices and are different basic conditions. For example, when we talk about separation in different parts of different types of food and handling them. Or how important it is with sealing, marking and cleaning in different parts.

Business flow and monitoring

In this section, we will go through various common management steps during an operation and some of the most important factors to consider in these steps. In some cases, the steps occur several times depending on how the business is structured. In the various stages, a lot is based on having control over their basic conditions and in making sure the business has a good hygiene practice (see the previous section).

Goods reception

Goods reception and arrival inspections are perhaps one of the most important steps to be in control of. This is where you chose whether or not to take responsibility for the product. It is important to inspect that all goods meet the given limit value. Refrigerated goods should maintain a surface temperature below + 8 °, frozen goods below -18 ° and hot foods above + 60°. Inspection is also carried out on labeling, packaging and wrapping.

Storage

At this stage it is important to separate different goods. Separation must be carried out in such a way that it does not risk being contaminated by other goods or by various hazards (see previous section on dangers). Packaging must be sealed properly and inspections of the temperature of the products must be done in such a way that the company can guarantee that no one is at risk of getting ill. Proper cold temperatures inside the fridges result in longer durability. Limit values for foods in fridges are usually max + 8 ° and even colder for sensitive goods. In the freezer you want -18 ° or colder. It is also important that there are descriptions of what to do if you find storage spaces that do not meet these requirements.

Preparation

The preparation process is very much based on good hygiene practice. It is important to separate the preparation surfaces for different types of food as much as possible, both raw and edible. Use coded cutting boards that can be washed in the dishwasher. Remember to always use clean equipment and tools when preparing. Preparation should be done for as short a time as possible to prevent unwanted bacterial growth.

Cooking

When cooking food, it is preferred that the core temperature in the dish reach + 72 ° to ensure that it has killed off pathogenic bacteria, parasites and viruses. Those who choose not to heat the food to these temperatures should be able to show all the preceding steps that ensure that the handling does not lead to anyone becoming ill or injured by the food they cook and serve.

Cooling

In some operations, there is the step of cooling down food, this should preferably be done with separate equipment. If you make a small amount of food, it may be allowed to do so under running cold water or in fridges / freezers. Then it is also necessary to check the temperatures of the goods that are already stored there. If you have cooling involved in your operation you must be able to show that the food has reached max + 8 ° within four hours. If you do not reach this requirement you have to throw the food.

Hotkeeping

In some businesses, you also have the step of keeping food warm. This process should preferably not last for too long as nutritional values of the dish diminish over time. During the process it is important to ensure that the surface temperature does not fall below + 60 °. The food can be reheated if the temperature drop is less than 10 °.

Sales and serving

One of the last steps is sales and serving. This operation is also based on good hygiene practice. Make sure that you do not use worn porcelain, avoid storing food open (preferably in a stand or use a lid in between servings). If you have a buffet serving, you must make sure that guests use new plates when returning to the buffet tables and that staff change canteens and utensils when refilling to prevent the spread of bacteria and viruses. What is presented to guests at the buffet should be discarded after serving.

Dishes

Dishes from serving are considered the "dangerous" dishes as they can spread viruses from the guests. Therefore, it is important that a flow is maintained in the dish space, from unclean to clean, there must be room for both. Before washing thoroughly scrape off food debris and rinse with lukewarm water, the wash water should maintain a temperature of + 60 ° and rinse water temperatures + 80 °. Drain and clean machines daily.