

# The cleaning and hygiene partnership in meat processing

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**H**ygienic and cleaning are inextricably connected with each other. Hygiene has become more complex during the last decade and to keep control of cleaning a food company requires a good partnership with their chemistry supplier.

Hygiene comes from the Greek word *Hygieia*. *Hygieia* was the God of health and purification and was one of the daughters of *Asklepios* (God of medicine and healing).

Hygiene is still the collective noun for all actions and methods of actions that make sure that people and animals stay healthy by keeping pathogens out of their reach.

Translated to the current food industry, we arrive at HACCP (Hazard Analysis of Critical Control Points). HACCP refers to a structural approach to guarantee the safety of the food and the health of the consumer.

Since the 1990s HACCP has been taken up in the European legislation, namely in the European guideline 93/43/EEG of the Council of 14th June 1993 concerning food hygiene, meanwhile the European regulations 852/2004 and 853/2004 are operative now.

## Goal of legislation

The goal of the legislation is to take care of safe and healthy food in the field of microbiological, chemical or physical contamination in all phases of the food chain in order to protect the health of the consumers.

The legislation obliges proprietors of food companies to take care of the implementation, the management and the maintenance for one or more permanent procedures which are based on HACCP principles.

This also includes the main hygiene regulations, which require the design and construction of the rooms to enable effective cleaning. The cleaning equipment is also required to be effective and suitable to enable easy cleaning.

From both sections in the legislation an operator has the need of a cleaning and disinfection plan.

Additional requirements such as those of the British Retail Consortium (BRC) and

International Food Standard (IFS) still tighten the demands and if one wants to work according to allergens legislation, cleaning is a very important factor.

In real terms, however, productivity, technology and speed take precedence in production. The person who is responsible for the cleaning and disinfection package is thus between two opponents and has the difficult task to reconcile them. Hence, cleaning and disinfection in the food industry requires a more professional approach.

The support of the chemistry supplier is essential in that approach. The services of a good chemistry supplier is no longer limited to only providing chemicals, but consists of a complete concept and partnership with the customer.

CID LINES implements, in consultation with the client, a customised concept that guarantees all necessary aspects for 'safe food' in terms of cleaning and disinfection.

## Choice of products

Intensive study is the basis for the implementation of the final 'hygiene program'. An important factor here is the configuration of the production lines. The arrangement of the various rooms and the placement of the machines will determine the method of cleaning and disinfection. This method in turn determines the choice of cleaning products.

The study also includes a follow-up of a daily cleaning where all the additional parameters are examined (water pressure, water consumption, temperature, contact time, quality materials and working hours).

Mechanical action, time and temperature must be in equilibrium with the applied chemistry and are therefore important for the chemistry selection.

The choice of chemicals is, however, highly dependent on the type of pollution and this will in turn depend much on the activity of the client. In the food production industry remains of starch, fats, proteins, or mixtures of these elements can generally be found.

A second modifying factor is the quality and composition of surfaces and objects. Many cleaners are aggressive or dangerous, so they can cause damage. Hence a thor-

ough knowledge of materials is needed. The concentration of cleaners is also an important issue. The amount of active material per kilo or litre and the capacity (sequestrants, stabilisers) are also often an indication of the quality of the products.

A direct result of this is the required dosage and dilution. Most of the products require an application with water, but unfortunately water also contains many substances that have a disturbing effect on the outcome. The water hardness (calcium and magnesium) is, for example, an important factor.

A quality product will be less susceptible to fluctuating water hardness, because it includes some (more expensive) components in the basic formula. Another important point of interest is the pH value of the detergent.

Acids have the ability to turn most inorganic substances (lime) into water-soluble salts that can be washed away.

Alkaline products, in turn, have the capacity to dissolve water repellent components (fats, oils and proteins) effectively in water and, as a result, this ensures effective cleaning. However, the range of different alkaline and acid cleaners is very extensive and the right choice of a disinfectant will also play a major role. Often a good selection can advance a synergy between cleaning and disinfection.

Naturally, the objective is to develop a KIS (keep it simple) hygiene program. A strong limitation of the number of products and the ease of application remain a priority for a successful hygiene concept.

## Training

The right results are made more certain by an intensive and repetitive training program, adapted to the different levels and responsibilities of the employees.

Emphasis in this training is placed on the interaction between different parameters, method of cleaning and disinfection, and determination of the critical issues that require particular attention.

If desired, HACCP and hygiene can also be discussed more thoroughly. Naturally, the

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products themselves, their application and the safe handling of chemicals are also discussed.

As part of the registration there can also be held, at the end of the course, an oral or written test, and then afterwards training certificates are issued.

## Hygiene audits

In practice, the results and impact of the training are followed closely. Through regular hygiene audits during the cleaning action, the quality of the cleaning can be put into perspective. In dialogue with the client CID LINES develops a custom control system that improves the efficiency of the cleaning and disinfection. This is often done by determining the total bacterial count on all surfaces after the cleaning and disinfection process. This is done by sampling with swabs, Rodac plates or petri plates. A very convenient way of sampling 'in the field' is with dip slides.

There can be up to three different agars on the plates which means that in addition to the total viable count, germs like *E. coli* can also be determined. Samples of liquids can also be taken with these dip slides, such as the final rinse water of CIP circuits.

Because of the attached cap, there is no problem handling in difficult circumstances. An ATP meter can also be a useful tool for evaluating the cleaning.

The fact that all ATP meters measure all organic and microbiological pollution is often seen as a disadvantage.

As support for a visual check it is a great tool. Sector values vary by type of contamination and so it is very important that each company sets its standards. In the meat industry, for example, the values before cleaning will be between 1,000 and 8,000. After cleaning these values are around 100 and after disinfection the values fall below 10.

After a visual check, both after cleaning and after disinfection, there can be a quick evaluation if the results are sufficient. If the results are insufficient, they can be corrected.

In addition to the measured result it gives a clear signal to the operator about the action he just has done. As feedback to the training and as a stimulant to improvement, it is a useful tool.

Finally, there can be residue determination during the audits to determine whether everything has been rinsed sufficiently. Parallel to the findings, the results are always displayed in standardised reports.

## Poster program

Following the training, CID LINES also provides a custom poster program that responds in a playful way on the above mentioned topics.

In these posters three various aspects are highlighted that have a direct impact on food safety – awareness, safety and method.

## Dosing equipment

The dosage plays a crucial role in the cleaning process and adjustment of the levels is sometimes the solution for poor results. Therefore, a good chemical supplier should also pay attention to this.

Customers can not just come for advice on purchasing equipment, but can also come for maintenance of existing or leased equipment to get the proper dosage. These maintenance and calibration visits are always substantiated by a calibration report.

With the whole hygiene concept, CID LINES wants to support their clients in the realisation of a firmly based and practical cleaning and disinfection method so that their customers can continue to ensure safe food to their consumers. ■

# Latest meat inspection certificate

Everyone in the meat sector thinks that meat inspection could be done better and fairer. In reality what they are looking for is to 'play on a level playing field'! One way towards achieving this is to train and examine meat inspectors. The Royal Society for Public Health (RSPH) does just that with its Certificates for Proficiency in Poultry Meat Inspection.

Recently RSPH launched its level 2 Certificate for Proficiency in Poultry Meat Inspection and International Meat Topics took a look at it.

The level 2 Certificate is a qualification designed for new entrants/ learners who wish to qualify as Official Auxiliaries (Meat Inspectors) and be appointed by the UK's Food Standards Agency to work in British plants.

This qualification is one of two which are required so an Official Auxiliary can comply with EC Regulation 854/2004 (Article 5(7)) and the mandatory units in this qualification meet the requirements for the training and tests and the theoretical and practical knowledge and practical skills defined in Annex I, Section III Chapter IV(B) of the Regulation.

The other certificate required is Level 4 Certificate for Proficiency in Meat Inspection. Holders of the level 2 Certificate have to be able to demonstrate that they have the skills, knowledge and understanding to carry out post mortem inspection of poultry and can apply the required food safety management procedures while at work.

This qualification consists of five mandatory units and one of four optional units. The four optional units are for broilers and hens, ducks and geese, non-hunted game and turkeys and all follow a similar format.

Each unit considers preparation, which includes selection of protective equipment, use of protective equipment, selecting

equipment for inspection, checking facilities are appropriate and safe and personal hygiene. The post mortem section includes carrying out an inspection, identification of abnormal material, judging conditions that render material unfit for human consumption, ensuring such material does not enter the human food chain, sorting material into relevant by-product categories and recording.

The mandatory units are:

- Principles of post mortem inspection of broilers and hens.
- Principles of post mortem inspection of ducks and geese.
- Principles of post mortem inspection of non-hunted game birds.
- Principles of post mortem inspection of turkeys.
- How to understand and use food safety management procedures for post mortem inspection of poultry.

The first four of these five units are very similar in their content and focus on preparing and undertaking post mortem inspection and being aware of the conditions likely to be encountered, the legislation and recording results. The fifth unit focuses on food safety management procedures and understanding their role in the plant.

This syllabus is thorough and comprehensive. Candidates will have access to more straightforward summaries that will be easier to follow.

A sign of the world that we now live in is that this qualification has a specific section that highlights the importance of providing opportunities for contributing to the understanding of spiritual, moral, ethical, social and cultural issues as well as providing an awareness of environmental, health and safety and European issues.

Further information can be gained from [www.rspth.org.uk](http://www.rspth.org.uk) ■