HACCP in the Pet Food Industry
Taking Advantage of Legislation

Contents

1 Pet food safety
1.1 Pet food safety is becoming a major issue
2 The market mood is changing
2.1 Pet food markets are emerging from the global recession
2.2 Understanding the lifetime spend of pet owners
3 High standards of safety
3.1 HACCP is now being adopted for pet food safety
4 What is HACCP?
5 Using HACCP as a competitive advantage
1 Pet food safety

All around the world, pet food safety has become a major issue, with HACCP recognized as a significant part of the answer. Smart companies determined to gain market advantage are exploiting HACCP experience gained in the equally demanding human foods industry.

The pet food market, well established in the USA and Western Europe, has seen clear signs of a return to growth. In the meantime, pet ownership is thriving in developing regions such as Asia, Latin America and Eastern Europe. In each market, the safety of pet food is the major issue – pet food accidents have made world news alerting pet owners to food risks, and manufacturers are increasingly coming under the influence of statutory bodies legislating for pet food quality, vigilance and safety.

The knowledge gained from decades of experience with HACCP in human foods is being referenced to make dramatic improvements in Pet food safety. Introducing HACCP, however, makes many demands on manufacturers and producers. As an example, Dr. David Rosenblatt’s complete HACCP step-by-step checklist, a ‘simple’ guide to setting up HACCP, includes as many as 100 steps.

Pet food manufacturers must rely on the experience of the Human food process and packaging industries in adopting this highly effective manufacturing discipline.

As with most paradigm shifts, many manufacturers will exploit this opportunity to the full, taking maximum advantage of the movement to HACCP. There will also be others who will find this journey a ‘business changing’ chore.

1.1 Pet food safety is becoming a major issue

A recent Euromonitor survey showed that "95% of owners think of their pets as family members"1, while reporting by PetIndustry.com identifies "Humanization" as a major feature of the developing pet food market. When it comes to food quality and safety, pet owners are thinking of pets as they think of themselves.

A report issued by the American Association of Veterinary Laboratory Diagnosticians showed that almost 350 North American pets – 236 cats and 112 dogs – had died from eating contaminated food. This news spread rapidly world wide.

WASHINGTON PRESS – United States Health Officials received thousands of complaints earlier this year about pets killed by contaminated pet food. A major recall was begun last March after ingredients imported from China were found to have contaminated some pet food. Canadian manufacturer Menu Foods Income Fund was hardest hit, recalling over 60 million packages of private-label wet pet food products.

"The US Food and Drug Administration said it received 17,000 complaints of related pet deaths, although it had confirmed just 16."

News travels fast and far – In Asian markets, pet owners have been alerted to accidents involving pet food around the world (Son Ji-hui, a spokeswoman for the Seoul-based CJ Group).

The Greenfield Online survey, based in the USA, found that 93% of pet owners were aware of the issues of pet food recalls. When asked if the recalls had affected their pet food purchases, 30% said yes and specified as follows:

- "I changed the brand of pet food I buy": 62%
- "I made homemade pet food for my pet": 28%
- "I switched to organic pet food": 16%
- "I changed the retailer from which I buy pet food": 15%
- "Other reasons": 18%

Pet owners will go to great lengths to care for their pets and keep them safe.

2 The market mood is changing

2.1 Pet food markets are emerging from the global recession

The “great recession“ has caused many people to reconsider everything; to adapt and re-evaluate the way we live and what we spend our money on. This has materialized in more of us staying at home, less unusual expenditure, but a move to more, but low-value, “little luxuries”. This, possibly, is an indicator for why the growing pet owner community is becoming more indulgent toward their animals or “trading-up” to higher-priced, more highly specified pet food brands.

Growth is returning to pet food markets around the world.

According to Euromonitor International data, the global retail value of pet dietary supplements are predicted to grow by 18% between 2010 and 2015. Over-the-counter pet healthcare and supplements are increasingly viewed as a means of both maintaining pet health and preventing costly veterinary bills. This has led to increased demand for such products as probiotics and prebiotics, which are often marketed as a means of preventing disease.

Compliance with HACCP based standards and consistent quality for brand protection are of primary concerns for pet food and animal feed manufacturers.
Understanding the lifetime spend of pet owners on pet food is crucial to pet food manufacturers as it provides a good indication of the lifetime value of their customers.

Each pet food business has a customer base, and each customer (i.e. pet owner) represents a quantifiable value that goes beyond the first sale. The lifetime spend of the pet owners refers to the measure of worth (value) over the lifetime of the pet owners, indicating how much revenue pet food manufacturers could potentially generate from them.

Fully understanding and leveraging the concept of lifetime spend of pet owners on pet food can then help pet food manufacturers to strategize their business and make better decisions on how and where to spend their money and ultimately get a larger share of wallet of their customers.

Data parameters used to calculate lifetime spend on dog and cat food:
- Average expenditure on dog and cat food per household for the period 1998-2010 (expenditure on dog and cat food/total number of households owning a cat or a dog)\(^\text{(1)}\);
- Average life expectancy of pet owners for the period 1998-2010 less 20 years \(^\text{(2)}\);
- Formula \(= (1) \times (2)\).
- Assumptions used to calculate lifetime spend on dog and cat food:
  - There is only one pet owner in each household owning a cat or a dog (therefore, total number of households owning a dog or cat equates to total number of pet owners owning a cat or a dog);
  - The number of households owning a cat and the number of households owning a dog are mutually exclusive (i.e. households owning a dog would not own a cat, vice versa);
  - Pet owner starts to own a dog or a cat and has the financially ability to support the pet by themselves from the age of 20 years.

<table>
<thead>
<tr>
<th>Households owning dogs and cats</th>
<th>Lifetime spend per household US$</th>
<th>Total lifetime market value US$</th>
</tr>
</thead>
<tbody>
<tr>
<td>US 38.2</td>
<td>45.6</td>
<td>10,377</td>
</tr>
<tr>
<td>China 26.9</td>
<td>17.1</td>
<td>550</td>
</tr>
<tr>
<td>Russia 6.3</td>
<td>7.2</td>
<td>1,450</td>
</tr>
<tr>
<td>France 4.8</td>
<td>6.1</td>
<td>15,000</td>
</tr>
<tr>
<td>UK 3.8</td>
<td>5.5</td>
<td>18,000</td>
</tr>
</tbody>
</table>

Figure 2: Source: Euromonitor International, APPA, FCI, pfma reports and statistics
3 High standards of safety

3.1 HACCP is now being adopted for pet food safety around the world

In the last few years, pet food safety has come under the increasing attention of national authorities.

The Chinese government has approved new food safety laws aimed at raising standards at every level of production. The quality of Chinese goods has come under international scrutiny following scandals involving products ranging from toothpaste and pet food to toys and fish. The Chinese State Council is working on important food safety laws. This legislation introduces control in production, processing, sale and supervision of all food products, including pet foods.

"China officials assert that they have been moving aggressively to improve their food safety system and to close unsafe plants": US Congress Research Service Sept 2008

In the USA, the Federal Drug Administration (FDA) launched a Reportable Food Registry requiring feed (including pet food) companies to report incidents of adulteration. HACCP is identified as the best approach to pet food safety:

"Manufacturing facilities should take all measures necessary to prevent adulteration. These measures could include implementing a Hazard Analysis and Critical Control Point (HACCP) plan."*: USFDA Guidance for Industry #122 Food manufacture and labelling for "COMPANION AND CAPTIVE NONCOMPANION CARNIVORES AND OMNIVORES"

The Federal Food, Drug, and Cosmetic Act (FFDCA) requires that pet foods, like human foods, be safe to eat, produced under sanitary conditions, contain no harmful substances, and be truthfully labelled: Title 21 Code of Federal Regulations (CFR), Part 113

"Responsible pet owners should help protect their pet from potentially harmful products. While it is impossible to ensure that your pet will never come in contact with unsafe pet food or treats, you can greatly reduce the risk by purchasing products that have a valid HACCP program in place." FDA consulting Services USA

In Europe, European Community regulations now extend to pet food. Animal feed businesses are required to apply the principles of a HACCP system, "the general implementation of procedures based on the principles of hazard analysis and critical control points (HACCP), which, together with the application of good hygiene practice, should reinforce feed business operators’ responsibility." EC Reg 183/2005.

HACCP provides undeniably the best route for pet food manufacturers to ensure standards and safety.

HACCP has been proven in human products – ensuring high standards of safety.
The FEDIAF (European Pet Food Industry Federation) guide for the manufacture of safe pet food (March 2010) includes legislation on food process control:

The regular act of reviewing all aspects of the HACCP plan to ensure: (i) it accurately reflects the reality of the process on the factory floor; (ii) continuous identification of new food safety hazards and performance of risk assessments of all factory practices; and (iii) that all verification data trends are consulted and acted on appropriately. The frequency should be set at least once annually and in response to any change in product, process, procedures or practices which may affect food safety. In principle any change should be assumed to have an impact and therefore should be risk assessed. The review is to be performed by a multidisciplinary team.

From the FEDIAF Guide to Good Practice: “The basis of the pet food manufacturer’s pet food safety system shall be a HACCP Plan which shall be systematic, comprehensive, thorough, fully implemented and maintained. It shall be based on HACCP principles and reference shall be made to relevant legislation, codes of practices or guidelines.” FEDIAF – European Pet Food Industry Federation – Guide to Good Practice for the Manufacture of Safe Pet Foods Version 2010
4 What is HACCP?

HACCP (Hazard Analysis and Critical Control Point)
- Is a process control system that identifies where hazards might occur in the food production process.
- Puts into place procedures to prevent the hazards from occurring.
- Strictly monitors and controls each step of the process, to decrease the probability for hazards to occur.

Why is HACCP important?
- It prioritizes and controls potential hazards in food production.
- Controls physical, micro-biological and chemical contamination risks.

HACCP is based on 7 core principles
1. Conduct a food safety hazard analysis
2. Identify the critical control points (CCP)
3. Establish critical limits for each CCP
4. Establish CCP monitoring requirements
5. Establish corrective actions
6. Establish record keeping procedures
7. Establish procedures to verify system is working as intended

HACCP was introduced in the 1960s by the Pillsbury company to regulate the production of safe food for astronauts. The World Health Organization (WHO) and Food Agricultural Organization (FAO) commission, CODEX Alimentarius, set the global standard for HACCP.

For the human food industry HACCP is an obligation in the US and Europe and is increasing acceptance in Asia. All manufacturers supplying into these countries must comply. Most major retailers insist that manufacturers adhere to one of the GFSI/HACCP based standards as the risk of not having a HACCP program could destroy a brand and financially cripple a company.

Equipment qualification in the pet food industry – IPac
METTLER TOLEDO has developed the IPac to ensure your pet food manufacturing facility meets the requirements of the HACCP based standards, including IFS, BRC, SQF and ISO 22000. Once you have installed a METTLER TOLEDO piece of equipment as a Critical Control Point (CCP) we can take care of the rest. With the IPac you will get all the required documentation, installation and training support necessary to pass your audits first time.
5 Using HACCP as a competitive advantage

Retailers have long since identified the high potential of the pet food market. Safety is of paramount importance especially in the premium niche of this market where the end customer is expecting the very best quality – and is willing to pay for it.

Pet food customers are very loyal to a specific brand if it is readily accepted by their pet. However they are willing to change brand or point of purchasing very quickly at the first sign of poor quality or if they feel that their pet is at risk. With this in mind retailers are now insisting that manufacturers invest in safe production process using tried and tested procedures already in use in the human foods industry. Only the manufacturers who invest in a complete food safety program will have access to all markets.

5.1 HACCP – the accepted method

HACCP is recognised as the Industry’s best route to safety.

Just as in food for human consumption, HACCP is the most thorough of food safety programs that, when properly developed and implemented, will greatly reduce the chances of contaminated pet foods from ever reaching the retailers’ shelves.

Your comprehensive HACCP program is a clear way to set your company’s products apart from the competition. A well defined HACCP Program will pro-actively control all potential food safety and sanitation hazards.

To keep the watch on pet food active and vital, the US Food and Drug Administration and the National Institute of Health have launched a new portal to allow people to report problems with pet products more easily. This portal was set up to be a key detection tool in improving the country’s nationwide surveillance system and will strengthen the ability to protect the health of the nation. This will enable the quick analysis of animal safety-related events and identify the measures needed to protect the public. The Safety Reporting Portal includes a special feature for pet owners and veterinarians to report product problems with pet foods and pet treats.
Appendix – pet food legislation

References and background reading

While most regions of the world have import regulations that, from time to time, restrict the import of specific products, the legislation and guidance shaping the pet food industry is dominated by European and USA activity.

In Europe, the EEC, the Recommended International Code of Practice-General Principles of Food Hygiene including Annex on Hazard Analysis and Critical Control Point (HACCP) System

Guidelines for its application were adopted by the Codex Alimentarius Commission in 1997. Amendments regarding rinsing adopted in 1999. HACCP guidelines were revised in 2003. The Code has been sent to all member nations and associate members of FAO and WHO as an advisory text, and it is for individual governments to decide what use they wish to make of the guidelines.

European Community legislation:

76/211/EEC: Directive on the approximation of the laws of the Member States relating to the making up by weight or by volume of certain pre-packaged products

183/2005/EC: Regulation of the European Parliament and the Council laying down requirements for feed hygiene

• Provides the primary responsibility of the feed business operator for feed safety.
• Registration of all establishments manufacturing pet food.
• Approval of establishments (only feed business operators producing certain additives).
• Minimum manufacturing conditions requirements with regards to facilities & equipment, personnel, production, quality control, storage, and register, which must be fulfilled by the pet food manufacturer.
• HACCP implementation is mandatory; permanent, written procedures shall be based on HACCP principles as mentioned in Article 6.
• Conditions and arrangements ensuring full traceability of feed materials and compound feed.
• Industry Guides are voluntary, they shall take into account the relevant codes of practice of the Codex Alimentarius; they are finally assessed by the Community and periodically reviewed; published in C series of Official Journal of European Union;
• Provides that the Rapid Alert System applies to feed animals not kept for food production including pet food.

Installed equipment produces product of the right quality

Directive 76/211/EEC (I)
Regulation 183/2005/EC Annex II (Facilities and equipment) (XVIII)
Directive 2002/72/EC (VII)

Controlling the risk of the inclusion of hazardous material

Regulation 1774/2002/EC (art. 25(1cii)) (IX)
Directive 2002/32/EC (VI)
Recommendation 2006/576/EC (XXIII)
Codex Alimentarius Commission, Recommended International Code of Practice, CAC/RCP 1-1969, Rev. 4-2003
EN ISO 22000:2005(E) (XXI)
Suitability of weighing equipment

Regulation 183/2005/EC Annex II (Facilities and Equipment) (XVIII)
EN-ISO 22000:2005 part 8.3 Control of monitoring and measuring (XXI)

Establishment HACCP

Codex Alimentarius commission recommended international code of practice – General Principles of Food Hygiene
CAC/RCP 1-1969, Rev. 4-2003
Codex Alimentarius, 1997 (IV)
HACCP handbook for Small and Medium-sized Enterprises (III/5087/96) (III)
Regulation 1774/2002 (IX)
Regulation 183/2005/EC, Article 6 (XVIII)

The major ISO Standard for pet food safety is laid out in ISO 22000 § 7.2 Food Safety

Best guide to regulations and recommendations is the FEDIAF – European Pet Food Industry Federation – Guide to Good Practice for the Manufacture of Safe Pet Foods 2010

NB – Metal detection is identified as an important CCP and OPRP for all pet products – in tables identifying specific CCPs and OPRPs

In the USA all pet foods are regulated by the FDA Food and Drug Administration under the Federal Food, Drug and Cosmetic Act and Federal Code, Title 21

The Act requires all pet foods to be produced like human foods; under sanitary conditions, containing no harmful substances, with a correct and truthful label, and safe for consumption.

Processes are laid out in FOOD AND DRUG ADMINISTRATION COMPLIANCE PROGRAM GUIDANCE MANUAL 10/21/2003 Page 1 FORM FDA 2438 7371.009

2010 indication of Feed Hazards and the recognition of HACCP are laid out in:

Fourth Draft of the Framework of the FDA Animal Feed Safety System.

A Feed Hazard is defined as:
- A biological, chemical or physical agent in, or condition of feed, which has the potential to cause illness or injury to animals or humans – physical feed hazards include glass and metal

Products safety is further defined in:
- General Recognition of Safety (GRAS) Petitions – FDA (21 CFR 570); GRAS Notification proposed rule 62 FR 18938 (CFSAN is accepting notifications now)

HACCP has been recommended in:
- Fourth Draft of the Framework of the FDA Animal Feed Safety System, 2010
METTLER TOLEDO is a world leading supplier of equipment for use at CCPs in HACCP programs

Metal detector and X-ray systems
A large percentage of metal detector and x-ray systems are sold to act as a CCP in the manufacturers' HACCP program. Metal detection systems act as CCPs to protect against the risk of metal being introduced into the product. X-ray systems are included to protect against the risk of dense physical contamination.

Checkweighing systems
Auditors are increasingly including CCPs which support the manufacturers to adhere to legislation. As a result the checkweigher is included as a CCP to adhere to the local weights and measures legislation. If a product cooking time is dependant on the weight of a product, the checkweigher will be included as a CCP.