The **Extru-Tech**nician

How critical is petfood safety?

How critical is petfood

EXTRU-TECH, INC.

The short answer is **very**. Assuring safety in the petfood industry is critical at all levels: producers, manufacturers and consumers. We are all responsible for the welfare of our respective clients. If we do not focus on the hot topics regarding petfood safety, we risk losing business, credibility and customer trust and being subject to increased government oversight and regulation.

Developing a proper plan

Due to the importance and prominence of petfood safety in today's atmosphere, we have decided to continue the safety discussion from our last issue of *The Extru-Technician*. As we begin this journey, the first step will be the development and application of a proper HACCP (hazard analysis critical control points) plan.

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HACCP is a widely accepted method for controlling hazards that is employed within many food safety management systems. As your investigation begins, you will most likely find a few common systems—for example, SQF (Safe Quality Food), BRC (British Retail Consortium) and ISO (International Organization for Standardization). Selecting and developing the correct type of system and HACCP plan for your market and products is as critical as the plan itself.

At the time of this publication, a specific and documented legislative rule-set regarding use of HACCP in the US has yet to be developed for petfood. What we do see are petfood producers adopting existing formats as required by 9 CFR Part 417 (Code of Federal Regulations) for the human food industry.

Within these formats, developing and implementing a HACCP plan can be broken down to a very basic set of steps (also called principles).

7 principles of HACCP

Whether you call them steps or principles, the key components should be the same for every HACCP plan:

1. Analyze the process for potential hazards
2. Identify critical control points (CCPs)
3. Establish a critical limit for each CCP
4. Establish CCP monitoring procedures
5. Develop corrective actions
6. Establish verification procedures
7. Develop recordkeeping procedures

Step 1. Analyze the process for potential hazards

This step has three key stages:

1. List all potential hazards. Look at every component and step of your operations, including but not necessarily limited to:

- Raw materials and ingredients
- Processing activities
- Equipment
- Methods of storage/ distribution
- Microbial contamination
- Parasites
- Chemical contamination
- Unlawful pesticide residues
- Decomposition
- Natural toxins
- Unapproved use of food or color additives
- Presence of undeclared ingredients that may be allergens
- Physical hazards.

2. Evaluate all potential hazards for severity and likelihood of occurrence. Severity. Consider the seriousness of the effect and:

- Susceptibility of intended consumers
- Impact of secondary problems
- Magnitude of duration of illness and/or injury
- In the absence of control, will the hazard hurt, injure or kill your consumers? Why or why not?

Likelihood of occurrence. If not properly controlled, how likely is the hazard to have an effect in these areas:

- Association with ingredient/product
- Method of preparation in facility
- Conditions during transportation
- Expected storage conditions
- Likely preparation steps before consumption.

Petfood safety in the US and other developed markets is far ahead of where it is in some parts of the world.

3. Determine if each hazard needs to be addressed in the HACCP plan.

- Eliminate the ones of low severity and/or likelihood of occurrence
- Include all significant hazards – based on severity and "reasonably likely to occur"
- Justify your decisions
- Remember this is a difficult, often subjective, process
- Keep a record of all your findings and deliberations during this step—even the hazards you end up not including in the plan.

Step 2. Identify critical control points (CCPs)

If deemed significant—passing all the criteria specified in step 1—a hazard must be controlled by a CCP. The point in a process that is the **last** step at which a control measure can be applied **and** that is essential to prevent or eliminate a specific food safety hazard or reduce it to an acceptable level is the CCP for that hazard or process.

Remember, a CCP defines the type of hazard and the process location. A regular, non-critical control point in a process is typically not safety related but rather about maintaining quality or regulatory compliance. A critical control point **is** about safety.

> **Tip**
> Check 9 CFR Part 417 (Code of Federal Regulations) for what FDA requires in human food HACCP plans.

Examples could include measures such as:
- Sieving to remove foreign bodies
- Employing thermal treatment to destroy pathogens
- Using a metal detector to alert for metallic contaminants.

A proper HACCP plan should end up with only about five CCPS. If you have more, they likely are not all critical—i.e., safety related. By choosing a small number of CCPs, you can concentrate your resources in the places where they have the strongest impact. This is the essence of HACCP.

Step 3. Establish a critical limit for each CCP

What is the operational reference point that guarantees the hazard has been identified and killed or removed from the process? That is a critical limit: the maximum and/or minimum value to which a biological, chemical or physical parameter must be controlled.

Basically, a critical limit establishes the absolute limit between safe vs. unsafe. So in identifying these, you want to look at food safety limits, not operational ones. Focus on studies done in your own plant or others. Other sources of data include:
- Government guidelines, such as Codex
- University publications
- Scientific journals and publications
- Industry experts,
- including your key suppliers.
- Research.

Step 4. Establish CCP monitoring procedures

Formally this step is defined, according to NACMCF (1997), as conducting a planned sequence of observations or measurements to assess whether a CCP is under control and to produce an accurate record for future use in verification.

The only way to ensure CCPs are working is to constantly monitor them. Loss of control must be identified as soon as possible. Be sure your procedures include the "four W's plus H": who, what, when, where and how to monitor.

> **Tip**
> NACMCF (1997) has helpful definitions and information, including about critical control points monitoring and corrective actions.

One of the more common mistakes with this principle is the "when," particularly when the monitoring is not continuous or is periodic. Some basic points to consider include:
- Interval (must be short enough to detect possible deviations)
- Frequency (should not be overly burdensome to the process)
- Amount of variability in the parameter
- How close the operating parameter is to the control limit
- How much product you are willing to sacrifice.

Step 5. Develop corrective actions

What do you do if an issue arises—a CCP falls out of control? As mentioned on page 4, petfood safety is not yet regulated in the US, but any rules put into place by the Food and Drug Administration (FDA) will likely follow human food regulations. For example, FDA requires documented corrective actions (CAs) in food HACCP plans.

At the least, per NACMCF (1997), the CA procedures outlined in the HACCP plan should:

- Determine and correct the cause of non-compliance. How was the critical limit exceeded or otherwise not met? If applicable, determine the root cause, not the "symptom."

- Determine disposition of non-compliant product. Was it identified and isolated, reworked or destroyed?

- Record the corrective actions, and cause thereof, that have been taken. In other words, how will this be situation be corrected or addressed to prevent recurrence?

For human food, FDA requirements are exhaustive and can be onerous. For example, according to 9 CFR 417.3 (Corrective Actions):

- The HACCP plan shall describe the corrective actions to be taken, and assign responsibility for taking corrective actions, to ensure:
- The cause of the deviation is identified and eliminated

- The CCP will be in control after the corrective action is taken
- Measures to prevent recurrences are established and
- No product that is injurious to health or otherwise adulterated

as a result of the deviation enters commerce (special note – must be "signed off" by documented personnel in the plan, and is prosecutable in court of law if found un-true).

Step 6. Establish verification procedures

These are activities other than monitoring that determine the validity of the HACCP plan and verify that the system is operating. The procedures should include short-term and long-term measures, such as audits.

Verification should be ongoing and answer this basic question: "Are we getting it right?" Your procedures should address two issues:

1. Is everything we planned actually being performed? Activities aimed at answering this question should include:
- Visual monitoring (live or taped)
- Review of records
- Internal auditing.

2. Are the desired results actually being attained? Measures to answer this question should include:
- Testing finished product
- Analyzing customer complaints
- Challenging tests (simulating a safety event and monitoring the performance of the system).

Tip
9 CFR 417.3 outlines the exhaustive FDA requirements for corrective actions in human food HACCP plans.

Tip
Find more information in *HACCP: A Systematic Approach to Food Safety* from the Food Processors Institute, www.fpi-food.org.

Step 7. Develop recordkeeping procedures

This is fairly straightforward: You need written documentation that the HACCP plan is being carried out. The documentation should include all activities and discussions that have occurred during the first six steps and all ongoing activities and decisions within the HACCP plan.

Many good examples and tools for documentation already exist. For ideas, look to:
- Key suppliers or other business partners already using HACCP
- Textbooks, such as *HACCP: A Systematic Approach to Food Safety*, 4th edition, Food Processors Institute, available at www.fpi-food.org or Amazon.com
- The International HACCP Alliance, organized by Dr. Kerry Harris at Texas A&M University, www.haccpalliance.org/sub/index.html.

Be proactive

Again, it is important to remember that currently there is no legislation for safety in the petfood processing industry. FDA simply states now that petfood suppliers must produce *Salmonella*-free products.

If FDA puts petfood rules in place, it will most likely copy the protocols set up for the human food industry. For example, with food, all CCPs must be tested and verified by a third-party laboratory, outside the production facility. While the samples are being tested by this third party, the product cannot be distributed or sold. Think of the warehousing and logistic challenges that can arise.

It is up to petfood producers to develop their own strategy or system. If they don't, FDA most certainly will. ∎

Tip

A good resource: International HACCP Alliance, www.haccpalliance.org/sub/index.html.

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