Foreign Material Controls - A Focus on Prevention

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INNOVATION CENTER FOR U.S. DAIRY®
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The Innovation Center for U.S. Dairy® (IC), formed in 2008, provides a forum for the dairy industry to work together pre-competitively. Collectively, the IC represents over 500 dairy manufacturers and over 80 percent of the U.S. milk supply. One important IC initiative is the Food Safety Team, which helps assure dairy products are safe by providing resources and training in all facets of dairy manufacturing. The IC Food Safety Team is very active with over 100 experts from 50 organizations involved across multiple platforms. Learn more at: www.usdairy.com/foodsafety. If you have specific questions, please email innovationcenter@usdairy.com

Acknowledgements

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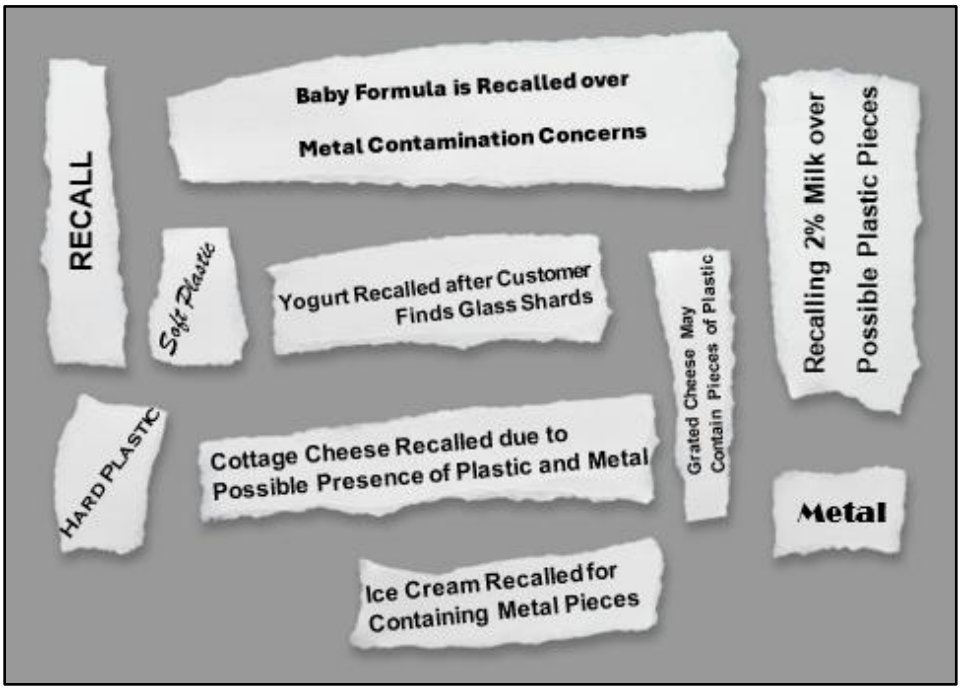
To The Reader

For generations, the US consumer has trusted Dairy processors to provide wholesome, nutritious, and safe products to their families. Tens of thousands of food safety professionals have ensured that safety on a daily basis, and that focus continues with today's quality professionals. Much of our focus as an industry has been on biological and chemical hazards, like listeria, salmonella, residual antibiotics, and allergens. The food safety concern that is not as frequently discussed is physical hazards. These **physical hazards** or **"foreign materials**" can cause choking, mouth lacerations, dental damage, intestinal complications, or worse. They not only impact consumers and company reputations they can also cause significant product waste, lost line time, and financial damage.

This white paper provides a "Best-in-Class" set of practices based on the experience of volunteers from dairy product manufacturers. These are not theoretical ideas; they are in-plant, established methods to reduce or eliminate foreign material risks. Our hope is that the reader can learn, educate on, and implement some or all of these principles in their facilities.

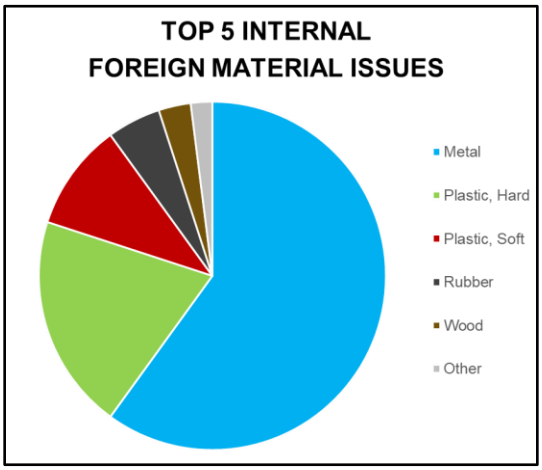
Foreign Material Incidents in the News

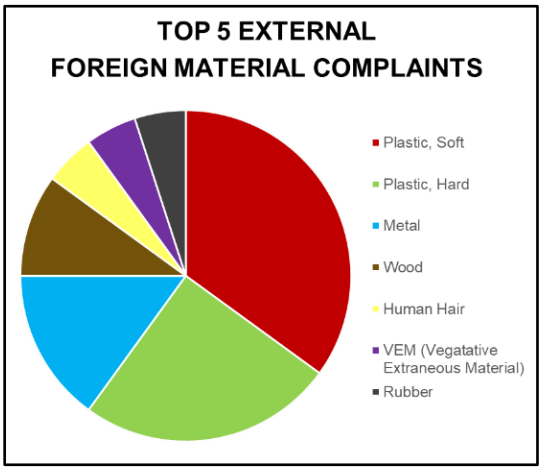
Here are some recent news Headlines on food recalls.



Leading and Lagging Indicators of Foreign Material Risks

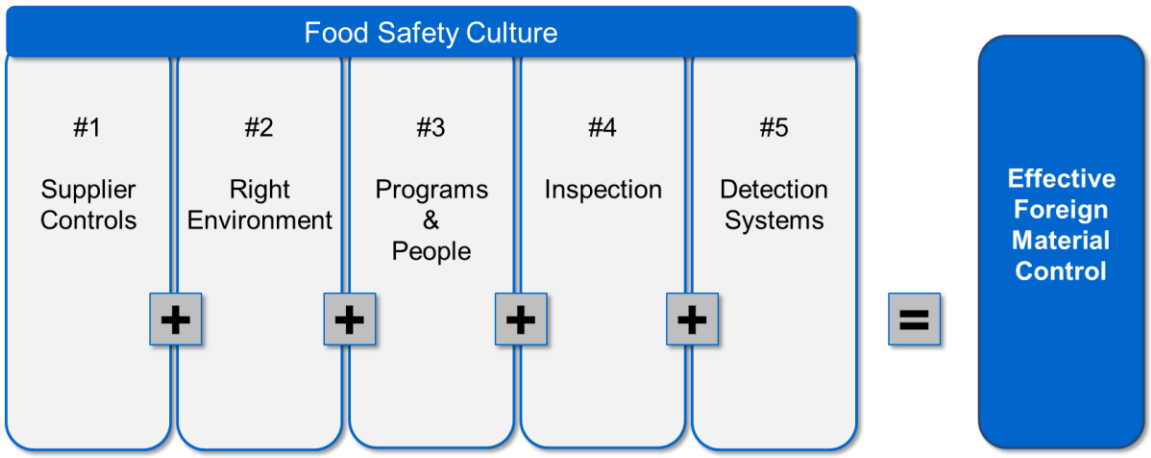
A group of leading dairy manufacturers was asked about foreign material issues that they have dealt with internally over the past two years, and foreign material issues that they have received as customer or consumer feedback. Within plants, metallic foreign material accounted for over 50% of the risks that had to be mitigated and investigated. On the other hand, Customers and Consumers complaints identified soft and hard plastic over 50% of the time. Most manufacturing facilities have metal detectors or x-ray units that identify a metal issue but these devices cannot find soft plastic and have limited success with hard plastic. The focus must be on prevention!





Introduction to The Foreign Material Control "Equation": A Food Safety & Quality Principles Approach

Utilizing over 300 years of food industry experience, a team convened by the Innovation Center for US Dairy (**IC**) developed The **Foreign Material Control Equation** which is a food safety and quality principles approach to foreign material prevention.



This paper will break down each element of the equation and describe industry-proven techniques and methodologies to drive a prevention mindset into your plant Food Safety Culture.

- Strong **Supplier Controls** start with knowing your incoming risks and setting expectations and specifications with your suppliers.
- The **Right Environment** for manufacturing includes the plant infrastructure, utilities, and sanitary design, and it introduces a creative methodology for focused prevention.
- **Programs and People** are the lifeblood of any manufacturing facility. This guide outlines the day-to-day routines and systems for foreign material prevention, including FM exclusion zones and a close partnership between quality and the maintenance team.
- **Inspections** Which ones are key to foreign material prevention? Did we do what we said we were going to do?
- **Detection Systems** allow us to leverage technology in an automated manufacturing environment and provide forensic tools for root cause analysis investigations and future prevention.
- **Food Safety Culture**, the company values, and individual commitment needed for a sustainable program of producing safe food.

Strong Supplier Controls

Barry Nalebuff, an American author, once said, “Only recently have people begun to recognize that working with suppliers is just as important as listening to customers.” Strong supplier controls start with knowing our inputs. How well do you know your suppliers? When procurement identifies a new supplier for a new ingredient or as an alternate to an existing ingredient, do your homework on them. Check for recent recalls or withdrawal, and search for warning letters on regulatory website(s).

Know the location of the manufacturing site that will be supplying your plant. Is it in a country where food fraud is prevalent? Are there unique conditions in that country that would make the ingredient more prone to foreign material?

The Food & Drug Administration (FDA) and Canadian Food Inspection Agency (CFIA) have risk assessment tools readily available on their websites. The IC also has a Supply Chain Risk Calculator to assist with your risk assessments.

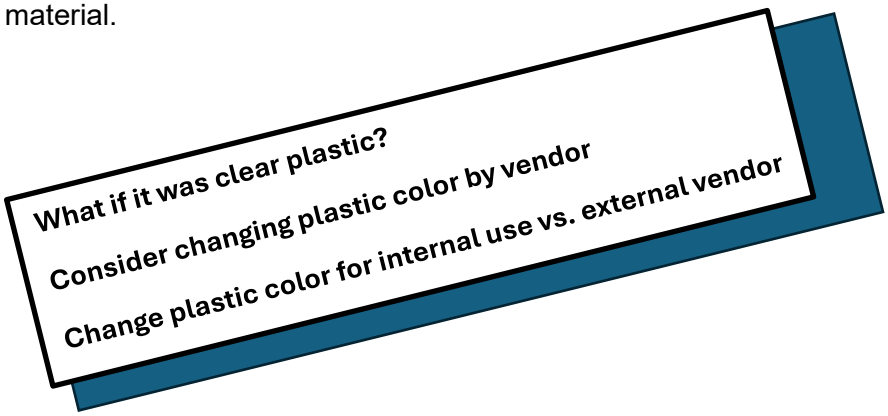
- Innovation Center Supplier Risk Calculator
- FDA Appendix 1
- CFIA Risk Assessment Model

Each company should have a set of supplier expectations and they should be included in the Terms and Conditions of any contract. If not, reach out to your procurement team and ask them to include it. The Supplier Expectations Manual should be well defined and understandable. These should cover food safety and quality systems, corrective and preventative actions, and third-party audits. Be sure to include routine checkups for compliance, using a supplier scorecard. Develop a program for feedback should an unfavorable situation arise.

When reviewing the documentation provided by the perspective supplier, be certain to review their third-party audit, specifically the non-conformances. What were their gaps? Were they able to close them? How would they impact your facility? While reviewing the HACCP flow diagram, where are their foreign material controls? Do they align with your company's expectations (e.g., contaminant size used to challenge a metal detector). What do they have in place upstream in the process to further reduce or eliminate hazards?

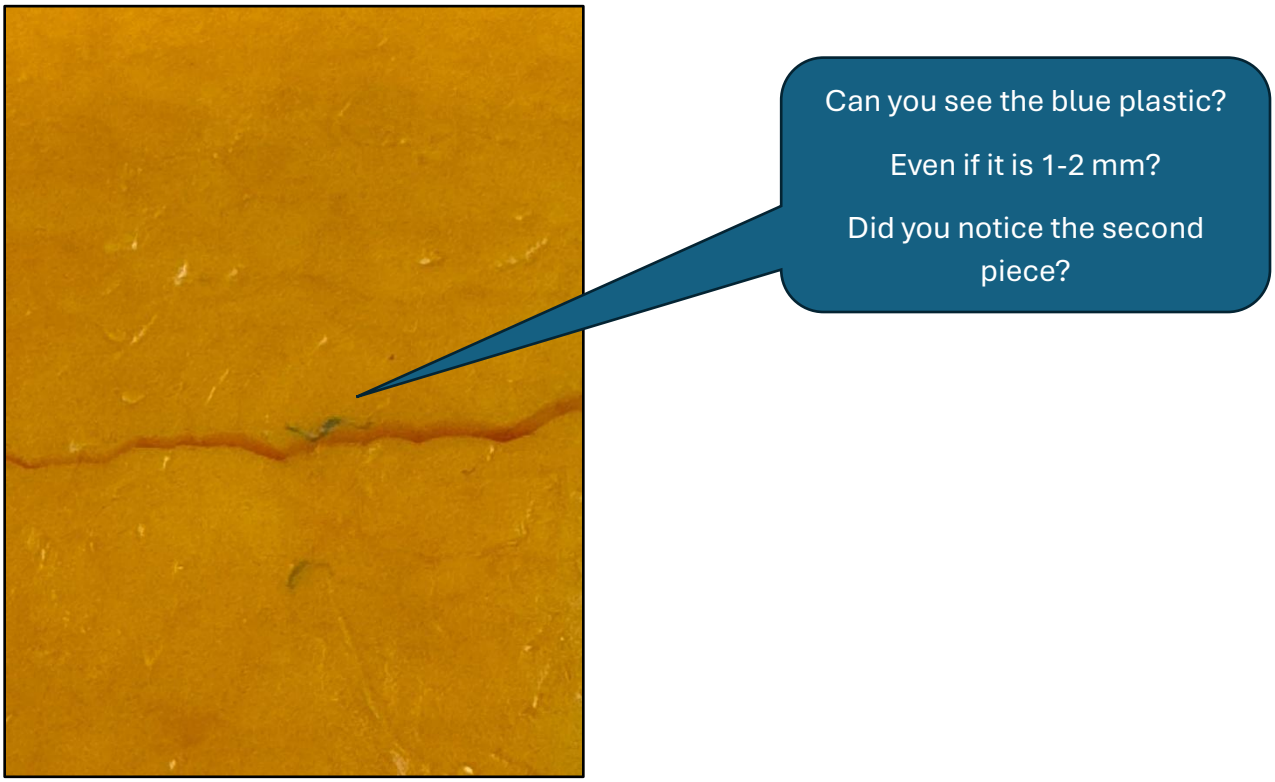
Next, communicate detailed expectations through specifications for ingredients and packaging. Is there an allowable amount of foreign material? For example, if you are making butter pecan ice cream, what is the allowable amount of broken pecan shells? Note the size and quantity. Do you understand the inherent risk of each ingredient or package? Have you visited the supplier's factory? Whenever possible, leverage industry standards and/or regulatory standards.

When you review a supplier's quality system programs, pay close attention to their glass and brittle plastic program. Are they performing routine audits? Have they developed detailed work instructions for containing and disposing of broken glass? Are cracked or broken plexiglass guards and windows replaced in a timely manner? Does their preventative maintenance program contain instructions for mechanics and electricians to account for tools, spare parts, shavings and debris before returning the area to production personnel? It is essential to re-inspect an area that has undergone construction or maintenance work as this is a well-known risk area and source of foreign material.

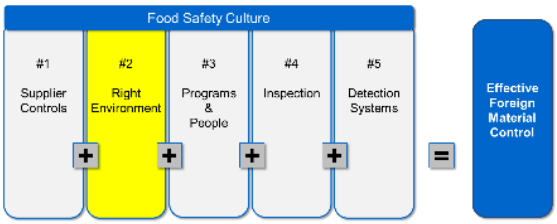


While conducting the ingredient hazard assessment for your facility's Food Safety Plan, you should consider how the ingredient performs when it is introduced to the product stream and how it performs during processing. For example, can the ingredient packaging fall into the process during addition? What control do you have in place to prevent this? How are bags cut open? Is the outer bag of a three-layer bag removed first? For an ingredient that is shipped as a 'bag in a box' is the bag pulled over the box first? Some ingredients have security seals to prevent tampering and production personnel should know how to remove them and dispose of them before opening or using the ingredient. Observe how the product performs during processing. Could the ingredient itself become a foreign object? What happens when the ingredient is over processed or improperly hydrated?

Lastly, consider the product's primary packaging as a potential foreign material source. Machinery could shave, cut, splinter, smash, or further damage the packaging and make it a hazard in the food product. The same supplier controls should be in place. Examine with the Food Safety Team, how could part of the primary package become a hazard? This type of hazard is very challenging to detect once it is in the product.



Right Environment for Manufacturing



Whether your plant is new or fifty years old, the facility's infrastructure and its utilities can directly impact food safety. The first priority that should come to mind is hygienic design.

Let's start with the food production room itself. The building and fabric must be suitable for food production. An improperly built or poorly maintained plant can create many potential physical hazards. Our goal is to identify them and develop a plan to mitigate or eliminate them.

Has it been built with proper materials? Have they deteriorated due to age, abuse, or chemical use? Remember to look up. Many unforeseen hazards can fall from structures above the food processing area. Focus the assessment on open product zones.

All plants should be access-controlled. Know what can come into your facility. Pay close attention to visitors and contractors. It's our responsibility to set the expectations for them, and every plant team member's duty to enforce them. (This touches on Food Safety Culture which will be discussed in more detail later).

Two great resources to leverage for hygienic standards are:

- Innovation Center for U.S. Dairy Sanitary Design Checklists at www.usdairy.com/foodsafety
- 3-A Sanitary Standards at www.3-a.org

As food safety professionals, we monitor plant utilities for biological hazards but they can present physical hazards as well.

1. Potable, incoming water should be filtered to prevent potential sediment. Depending on your facility's product type, additional water treatment may be necessary. Certain filter types can also become foreign material if they become damaged or are not well-maintained.
2. Utilize backflow preventers to avoid contamination
3. Plant ambient air must be free of particles and filtered appropriately for the product.
4. Positive air pressure should be used in areas identified as high risk.
5. Compressed air can come into contact with some products but should be eliminated or reduced in product contact zones. Oil-less compressors are strongly recommended. Compressed air should be filtered near the point-of-use and use sanitary/cleanable piping or hoses from filter to point of use.
6. Use only food-grade lubricants, equipment oils, and greases when near product-contact zones. Avoid over greasing.

One Best-In-Class practice identified by the team is the use of a **Foreign Material Exclusion (FME) zone**.

This is a designated area that safeguards equipment, systems,

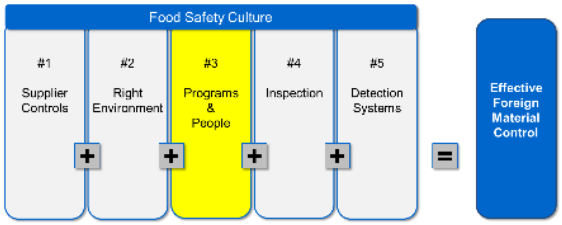
An FME designation raises awareness of the importance of exclusion measures. It also requires documented approval of any maintenance work and tools to be used in the area to ensure traceability and control of all materials and tools used in the area. Visitors entering an FME zone must leave any items not specifically needed to work in the zone in a designated area before entering or they should be required to sign them in/out of the room. The local management team and quality team should govern compliance. The plants who have implemented this concept have observed a significant decrease in foreign material (some to almost zero)

Items For Consideration

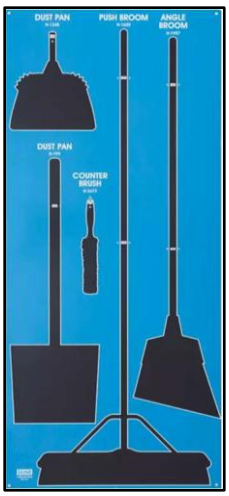
- □ Mark the area with signage. Use doors and other physical barriers to ensure people know they are entering a higher risk area
- □ What do you need to do the job? Only bring the tools you need into the FME zone.
- □ Do you know what's in your parts inventory? (e.g., ink pen, calculator, PPE, sampler, sample vials, Whirl-pak bag, needles, plastics cups, etc.)
- □ If it is not needed in the room, remove it permanently!
- □ Have an accounting system. List what tools and parts are **going into** the FME zone and what tools and parts are **coming out**.
- □ Who is inspecting the area after maintenance or contractor's work is completed?
- □ Who is verifying the inspector's work?
- □ Train visitors, contractors, and employees (local and corporate) to the FME zone's requirements.
- □ Good housekeeping is a must!
- □ **If you bring it in, you have to take it out; if not, report it.**

People & Programs

The famous Coach Don Shula was quoted saying, "The one thing that I know is that you win with good people." This is true in food manufacturing! Our people make the difference.



We use a lot of tools during food production, and those tools can quickly become foreign material. Let's look at a few things to review in your facilities. A good place to start is with your Intentional Adulteration Assessment which will also indicate key areas where you are at risk for contamination.



Shadow boards are a great way to quickly identify if a tool is missing. If you have an area where multiple tools are needed but can also inadvertently enter the product, we encourage shadow board to help with accountability.

Can you add autosamplers or injection systems? Are there ways to use automation to reduce human interaction? Can you add decartoning or debagging stations? Remember to do a good **risk assessment of any new automation** to ensure they don't inadvertently become foreign material too (e.g., blades breaking on the decartoning/debagging.)

Knife requirements are always an ongoing discussion between quality and safety teams. You need to have those discussions within your company. A few key takeaways are to not have breakaway blades, keep the blades sharp to prevent multiple cuts, have an accountability system for damage (sign-in/sign-out), and utilize tethering when possible to prevent the knife from falling.

Flashlights are an essential tool in quality, sanitation and other team members' toolboxes. How is it stored? Is the lens cracked or broken? How do you prevent it from falling into a product zone?

Pens should be metal detectable. No pen caps. You could color-code them by area or zone.

What is your **Gasket control program?** Which gaskets are allowed onsite? How often do you replace them? A best practice is the use of detectable gaskets (by x-ray and metal detectors).

Personal Protective Equipment (PPE) is essential in ensuring team member safety, but PPE controls may also protect the product from physical hazards (e.g. arm guards) or they can themselves become foreign materials (e.g. ear plugs, gloves…)

Examine PPE. Is it metal detectable? How would you find it if it entered the product stream? For example, most ear plugs are now metal detectable and can be tied or attached to a bump cap.

How do team members know what is required in different areas of your plants? This is a list of some of the standard PPE requirements we see across the food industry and a visual aid we use to easily communicate those requirements.

Determining Risk

Earlier we discussed ingredient hazards and processing hazards, these will be the baseline for determining the risk level (high, medium, low). We also need to look at other data points that can inform us of the level of risk.

Your facility's hold data, incident management, and complaint records may identify where there are recurring issues that are not being properly controlled. This may indicate you need to modify your current control points, inspections, or other programs. For example, if you are seeing an increase in holds for metal contamination you should find where the failure is happening and what programs need to be improved to reduce the contamination events (sanitation, preventive maintenance, etc.).

Good Quality Programs

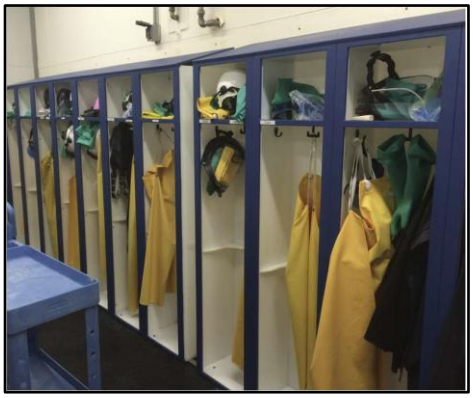
Many of these programs were covered earlier in the supplier review, and we also need to control them in our own plants. To help minimize the introduction of foreign materials start with your **Food Safety Plan** and verify that controls that are not identified as critical are still understood and implemented on the floor with a strong level of understanding and engagement. An example is magnets and screens - they are not always a PC or CCP but they will identify foreign materials. If there are findings, is your investigation and escalation as strong as if they were a PC? Do you have a plan to take action and are you following it for every event?

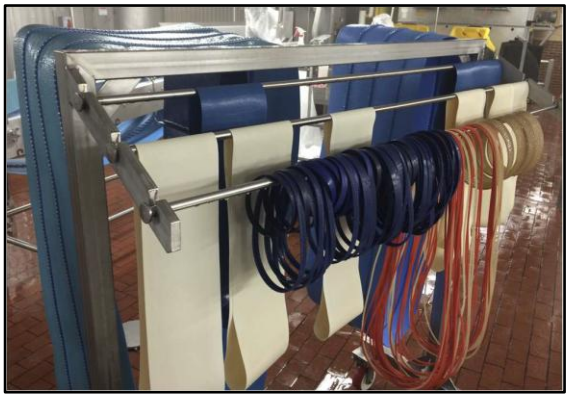
Food Safety Plan
Control of Non-conforming Goods
GMP's and Personal Items
Gasket Program
Sanitation tools
Vulnerability Assessment
Preventative Maintenance
Accountability for tools
Glass and Brittle Plastic
Mitigation strategy

Good Quality Programs, continued

It's a great idea to routinely do a vulnerability assessment. Having a good self-assessment checklist that you walk through periodically will help identify new risks that have entered the environment.

Examples of Good Solutions for Tool Storage:





These photos are recent examples from several dairy plants. The first photo shows an example of inverting buckets in a small area. The next photo shows sanitation gear storage. If left in the production area, sanitation gear can become foreign material.

The bottom left photo is from a plant that didn't have wall space to hang brooms & shovels between production lines. This cart keeps them off the floor but also accessible to where they are needed. The bottom right is a good example for belts and gasket storage.

These are different ways to properly store equipment, and we encourage you to think of how you are storing these in your facility…and if there are opportunities to improve.

The Maintenance Team – A Partner in Food Safety Prevention

The Quality and the Maintenance departments are service organizations that support food production - they are also natural partners in driving food safety in a plant.

There are many examples where maintenance activities unintentionally create a foreign material event. However, preventive maintenance programs are also critical in preventing foreign material.

Here are several key items to review with your Maintenance team:

- Are PMs being completed on schedule? Is the frequency appropriate?
- Are visual work instructions and other processes referencing the risk of foreign materials?
- Are temporary repairs documented, tracked, and inspected until a permanent repair is made?
- Are you prioritizing food contact equipment work and is it completed in a timely manner?
    - Afterwards, are all parts accounted for? Are you missing a bolt or washer?
- Often the work is done during downtime. How do your maintenance and sanitation teams communicate and is that robust enough?
- How do you monitor contractor activity?
- How do you protect the product if maintenance work is done during production? We have seen examples in the news when dust/debris from activities impacted product.
    - Plan for constant checks while maintenance activity is occurring in product contact areas.
    - Ensure the area is recleaned and inspected prior to startup.
- During planned production downtime, are infrastructure repairs being made?

Bookends of a Hold

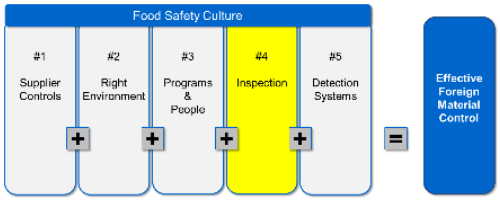
When an event occurs and you need to place finished product on hold, remember that our #1 priority is to **protect the consumer.** Determining where to start the hold and where to end the hold is commonly known as “the bookends” of a hold. It’s always better to go broad and then narrow the hold as you get more information.

Your team will need to **move with a sense of urgency.** It is crucial to balance customer service and completing the investigation. This is even more critical if some of the product has left your control.

Be careful to **document all the facts** you know and not just theories. The facts are what you should be using to determine the scope. Create a timeline where you can overlay maintenance activities, production schedule, sanitation, shift leader reports, and any other information you have. Using your incident team protocols, communicate frequently when appropriate. A Failure Mode and Effects Analysis (FMEA) may be appropriate depending on the size and complexity of the hold.

Inspections

"Inspect what you expect," - Dr. Edward Deming. This is one of the most well-known quotes in the world of quality assurance. Our primary focus has been about preventing foreign material contamination, but some of that strategy may be through inspections. The following are some key inspection points:



Incoming inspections are our first line of food defense.
We inspect ingredients and primary packaging upon receipt for tears, punctures, and debris on top.

Receiving **trailer inspection points** include intact packaging, no debris on pallets or within the trailer, and pallets in good condition.

Packaging should be inspected during use to ensure it doesn't become a hazard itself. For example, if you are opening boxes of raw materials, is there potential for the plastic liner to enter the product stream? Does your finished product filling include material trim, dust or glue?

Your facility should have a **pallet quality** program. Poor quality or damaged pallets can puncture raw materials and create a foreign object hazard. Eliminate pallets with broken boards, exposed nails, or splintering to prevent wood contamination. Eliminate any scenarios where a pallet may be above an open product zone.

When utilizing plastic containers or tools in food processing areas, these also require inspection to **prevent plastic** introduction.

Think about parts of your **process** - Are they necessary? Could they lead to high risk of contamination? Do you have controls in place?

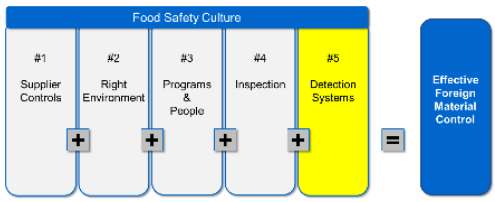
During and after **sanitation**, equipment and tools should be **inspected**. This is a good time to identify wear on equipment that should be repaired. It's also important to review the scrub pad and brushes being used. Are they single use? If not, are you visually inspecting before and after each use to ensure they are intact and in good condition?

Your **pre-operational inspection** should be completed by someone that did not perform the cleaning. This person will verify that all parts are accounted for and are in good condition.

During **changeovers**, your operators should ensure nothing remains in the area that isn't needed. Reference earlier in this document when we discussed shadow boards and the Foreign Material Exclusion zone.

Finally, one of the most critical inspections is the production area **after maintenance activities**. This is a high-risk time for foreign material contaminants and has been the cause of multiple recalls. Do you have a solid program to clear the area including parts, tools, shavings, dust, and other contaminants?

Detection Systems



Legendary statistician Harold F. Dodge was quoted, "You cannot inspect Quality into a product." Even though the focus of this guide is **prevention**, detection systems are essential monitoring tools for physical hazards in food. They not only catch unwanted materials, they should be viewed as warning systems that indicate there is a problem which needs further investigation. They may catch one issue but shouldn't be relied upon to 'filter out' or eliminate hazards.

First, based on the ingredient hazard analysis (IHA) and the process hazard analysis (PHA), determine **what you are looking for** and **where it could be introduced** into the product stream. Then monitoring devices should be near those risk points. Then, assess what device is best to find the hazard. It could be a filter, strainer, magnet, screen, metal detector, vision system, etc. Many companies will place additional detection devices at the end of the line as a final check before the product is shipped to the customer.

Second, the device should be validated for the targeted physical hazard. **Does the magnet have the proper pull-strength? Can the metal detector or x-ray detect and reject effectively?** You want to detect the smallest possible contaminant size without increasing the false reject rate. Then, set the frequency of monitoring based on the likelihood of the hazard occurring and your company's risk tolerance. Re-validation can vary from annual to every three years, or after the settings have been changed.

Third, **conduct detailed training** with the team members performing the monitoring and verifying activities. Be prescriptive with corrective action steps.

Fourth, evaluate if we **do what we say we are going to do**. These verification activities can be performed through adherence monitoring and document review.

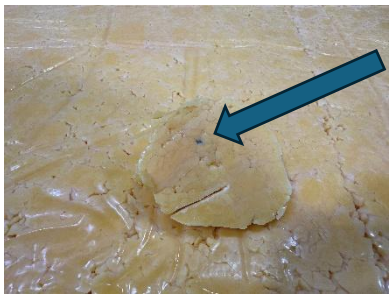
How would you find these?

What's New in Technology?

X-ray Fluorescence is used for metal mapping the facility. When a foreign material event occurs, it can help direct the investigation to the root cause.

Inspection for **Low Density FM** can be detected in several ways:

- Food Radar uses in-pipe microwave technology
- Dual energy x-ray to improve plastic or rubber detectability
- Vision systems can detect surface foreign material (e.g., plastic, wood)
- Hyperspectral Imaging alongside traditional Vision systems to improve detection of the smallest low density foreign material (surface only) regardless of color combination



Advance inspection and investigation with 3D CT X-ray technology improves visibility of uniquely shaped FM.

AI technology is already enabling entrepreneurs to develop inspection technology far beyond previous capabilities.

Guidelines Each FM Detection System:

Knowing the potential physical hazard will guide your team to choose the appropriate technology to detect and reject it.

TECH	DETECT?	GOOD	BETTER	BEST
Filters	Multiple types of FM (typically small; opening size)	Incoming goods (milk receiving)	Processing	Just prior to Filling
Sieves/ Screens	Multiple types of FM (size varies based on mesh size)	While pre-weighing ingredients	While adding ingredients to bulk tanks	Screen/ Magnet combo
Magnets	Ferrous metals	Incoming goods (nuts)	Before and after pumps	Screen/ Magnet combo
Vision Systems	Multiple types of FM, plus attribute defects	Incoming goods inspection	In-process inspection	Packaging and product inspection
Metal Detection	All metal types (product profile dependent)	Incoming goods (nuts)	Before and after pumps Finished goods inspection	Two metal detectors in series with product rotated 90°
Microwave Inspection	Multiple types, especially low-density FM	In-process WIP items (fruit puree, pastes)	Prior to filling finished product	Installed in-series with x-ray unit
X-ray Inspection (in-line)	All metal types, glass, some hard plastics	Incoming inspection and End of Line finished goods inspection	Dual energy system to improve lower density inspection	Installed in-series with metal detector
X-ray Inspection (offline)	Inspect finished goods cases after production.	Utilize 3rd Party Inspection service off-site	Utilize 3rd Party Inspection service on-site	Invest in offline X-ray inspection system (multi-site use)

Connection to Food Safety Culture

Your facility's food safety culture ties all the elements of the foreign material equation together. Ideally:

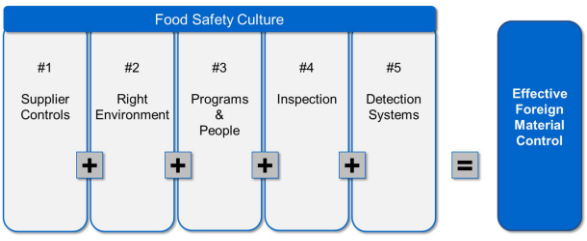
- You understand the hazards and risks
- The team has **created** the right environment for food production
- The company has **invested** in talent and their development
- Your talented people create, implement, and sustain the **systems and programs**
- Team members feel **empowered** to drive system effectiveness and inspire continuous improvement
- Inspection systems only served as a backstop and verification

These are all indicative of a **great Food Safety & Foreign Material Control culture**.

Conclusion

At the heart of our commitment to dairy excellence is a simple promise: every product we deliver is safe, pure, and crafted with care. Preventing foreign material isn't just a technical goal, it's a reflection of our respect for the families who enjoy our products and the trust they place in us every day. The Foreign Material Equation is more than a set of guidelines; it's a collection of real-world experiences and wisdom from dedicated dairy professionals who have spent their careers protecting both the quality of your favorite foods and the reputation of the brands you love. By embracing these proven practices, you're not only safeguarding your facility, but you're also joining a tradition of care that puts people first, ensuring every bite is as delightful as it is safe.

The Foreign Material Control Equation



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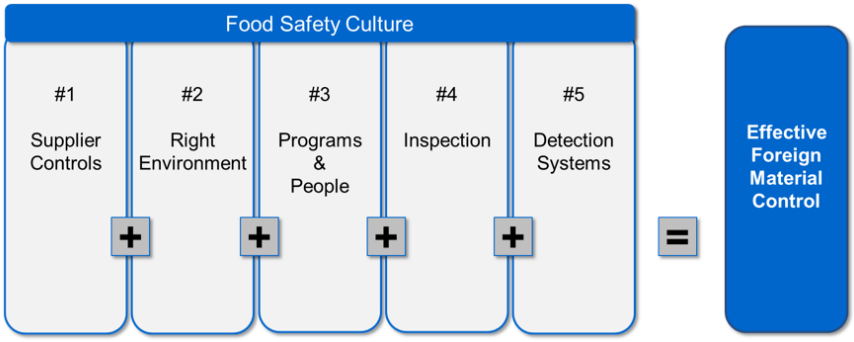
Appendix – Foreign Material Prevention Checklist



1. Supplier Controls

- Ensure supplier expectations are included in contracts
- Confirm their HACCP foreign material controls align with internal standards
- Define allowable foreign material limits, if any, for ingredients
- Review third-party audits and confirm closure of non-conformances
- Evaluate primary packaging for potential to splinter or break
- Assess ingredient introduction risks (bag cutting, seals, bag-in-box handling)
- Review supplier glass and brittle plastic programs
- Conduct background checks for recalls, withdrawals, and regulatory warning letters
- Use FDA, CFIA, and DMI Supplier Risk Calculator tools to determine hazards
- Verify country-of-origin risks and potential for food fraud

2. Right Environment for Manufacturing

- Implement *Foreign Material Exclusion Zones* (FME) where product is exposed
- Track tools and parts entering/exiting FME zones
- Install signage and access controls for FME zones
- Train all personnel and visitors on FME requirements
- Maintain access control for visitors and contractors
- Evaluate overhead structures for loose components
- Inspect all building materials for deterioration or chemical damage

- Filter incoming water and inspect filters regularly
- Maintain positive air pressure in high-risk areas
- Use oil-less compressors and point-of-use filtration
- Use only food-grade lubricants and avoid over-greasing

3. People & Programs

- Empower workers to react, correct, and report concerns
- Use shadow boards for tracking / accounting of tools
- Evaluate automation opportunities to reduce manual handling
- Prohibit breakaway blades; maintain sharp knives; track sign-in/out
- Inspect flashlights for cracked lenses and secure them
- Use metal-detectable pens without caps
- Implement a gasket control program with detectable gaskets
- Ensure PPE is metal detectable where possible
- Conduct routine vulnerability assessments
- Verify non-CCP controls (magnets, screens) are consistently followed
- Review hold data, complaints, and incident trends

4. Maintenance Partnership

- Build a culture of ownership/co-ownership for FM prevention
- Ensure strong communication between maintenance and sanitation
- Protect product during in-process maintenance
- Reclean and re-inspect areas before startup
- Have a system/program to track and inspect temporary repairs
- Include FM risk in work instructions and PM documentation
- Prioritize food-contact equipment repairs
- Account for all parts after maintenance work
- Closely monitor contractor activity

5. Inspections

- Inspect incoming ingredients and packaging for tears, punctures, debris
- Inspect trailers for debris, pallet condition, and intact packaging
- Inspect packaging during use to prevent liner contamination
- Maintain a pallet quality program
- Inspect brushes, wipes, and other sanitation tools before and after use
- Pre-op inspections conducted by someone other than the cleaner
- Clear unnecessary tools during changeovers
- Inspect production areas after maintenance

6. Detection Systems

- Analyze/react to any findings to identify root cause and take corrective actions
- Identify FM risks via ingredient and process hazard analyses
- Place detection devices near risk points
- Validate magnet pull strength,
- Validate metal detector and x-ray sensitivity
- Set monitoring frequency based on risk
- Revalidate devices annually or as needed
- Train operators on monitoring and corrective actions
- Conduct adherence monitoring and document reviews

7. Food Safety Culture

- Ensure team members understand FM hazards
- Empower employees to react, correct, and report risks
- Reinforce that detection systems verify prevention—not replace it

.

For More Information
Visit https://www.usdairy.com/foodsafety