Food plant personnel should consider a number of factors when assessing their pallet management protocols.

When is the last time you received materials at your plant that were not shipped on a pallet? Pallets play a key role in the movement of raw materials and finished products worldwide. But, have you ever considered the impact that pallets may have on your facilities and the products that you receive and ship?

Pallets, also known as skids, are a type of equipment used to move unit loads. They are designed to allow the forklift to pick up and move materials by inserting the forks between the top and bottom platforms of the pallet unit. The most common material used to manufacture pallets is wood, but they are also constructed of plastic, fiberglass, aluminum, and corrugated paper.

The use of pallets has been a fairly recent historical development. Pallets were not widely used until the 1940s when mass production of forklifts was implemented, revolutionizing the use of the pallet for assembly, storage, stacking, handling, and transporting goods and materials. Prior to that, barrels and crates were mainly used for the storage and transportation of goods.

The use of pallets greatly increased the amounts of materials that could be shipped and also maximized material storage in warehouses.

In the United States, pallets began being used for movement of materials during World War II, particularly in the Pacific arena. The U.S. government needed a standardized way of moving goods to the troops, and unitization of goods through shipment on pallets became the standard way of doing this. It allowed the government to ship a greater amount of goods to the troops more efficiently and did not require as many people to do it. This turned out to be a big cost savings in a wartime economy. By the 1950s, palletized shipping of goods became the industry standard.

A PALLET IS A PALLET IS A PALLET…
A pallet is a pallet is certainly not the case. Pallets vary in dimensions based on where they are being used (country or region) and what they are being used for. There are six basic styles of pallets, and ISO has sanctioned six different standard pallet dimensions based on keeping the load from tipping. These are based on the ISO container region. The materials that are used to manufacture pallets are defined by the type of load being transported.

POTENTIAL PITFALLS

Pallets are a vital component to storing and transporting materials. Although not a direct food contact surface, pallets can present food safety issues if not used and handled appropriately. There are many things to consider when handling and using pallets to store and transport food products.

Pallet Condition. The physical condition of the pallet itself is key to ensuring that the product that is stored on the pallet will not become damaged or contaminated as a result of its use. Wooden pallets that are damaged or splinted may cause product contamination through wood slivers or nails that protrude out of the pallet and penetrate the food packaging materials. This compromises the protective barrier that the packaging material provides, allowing the foreign material from the splinter or the nail to enter the food material. This damage may, in turn, provide an avenue for microbial or other pest contamination of the material.

Spillage from damaged materials creates additional cleaning issues, such as if the product leaks in storage slots or as it is transported. Material spillage may also create pest attraction or provide a food source to pests within the facility. One way to protect against damage and penetration of the packaging is to provide a slip-sheet.
Plant Sanitation

on the pallet to provide an additional barrier against damage from nails or splinters. Slip-sheets also may be used on top of pallets of materials that are double-stacked to prevent penetration of materials from a pallet load that is stacked on top of another.

Pallets with damaged stringers or decking may also cause the materials on the pallet to tip or fall, which may cause damage or loss of the material stored on the pallet.

Pallet Storage. Because pallets are not considered to be food-contact surfaces, where and how pallets are stored is often overlooked. Facilities that have limited warehouse space will often store pallets outside until needed. However, these may become dirty from environmental contamination, wet from rain or snow, or contaminated with insects, animals, nests, bird droppings, trash, or other contaminants. When pallets are brought into the facility to be used, these contaminants or pests are also introduced into the food manufacturing or storage areas.

So, what is your program for cleaning and inspecting pallets before they are brought into the facility? Think about what you could introduce into your facility if this is not managed or what your customers’ perception of your facility will be if you ship materials on contaminated pallets. An entire truckload of finished product could be rejected if it is shipped on pallets that have been contaminated with bird droppings or other outside contaminants. Do you want your customers to have a jaded opinion of your food safety program’s implementation?

Pallet Cleanliness. Spillage of insect-susceptible materials may also create issues with product stored on pallets. Materials, such as flour that may have been picked up due to bag damage in production or spillage from other damage materials, can become infested. This infestation can be easily transferred from the pallet to the materials placed on it.

Pallets that are wet cleaned or become wet through use can become moldy, especially if they have product spillage on them. Again, this could affect the product stored on the pallet or your customers’ perception of your facility if materials are shipped on a moldy pallet.

Where am I going? Pallets are traded throughout an entire country as well as regions across the world. Because of this, there are concerns with the transfer of quarantined insects. To prevent this from becoming an issue, there are international guidelines for pallets defined under the International Standards for Phytosanitary Measures (ISPM) 15. This standard defines the international requirements for packaging materials, including pallets, which are made of raw wood. There are three measures defined to prevent the spread of quarantined insects in wood.

1. Pallets must be constructed of wood that has been debarked.
2. Pallets may be fumigated with methyl bromide to eliminate any of the quarantined insects.
3. Pallets may be heat-treated in accordance with the guidelines defined in the standard to eliminate insect pests.

Pallets are provided with a mark to demonstrate that they meet these guidelines. Many countries do not accept pallets in international trade unless they bear the marks indicating appropriate treatment.

There are other internal issues that could also prevent the use of pallets. In the United States, the Animal and Plant Health Inspection Service (APHIS) can prohibit or regulate the use of wood used in pallets and where they may be used in intrastate commerce. Each of the State Departments of Agriculture can restrict movement and use of wood within the state itself.

Where have I been? In June of 1999, Coca-Cola withdrew millions of cans and bottles of Coke from the European market as a result of suspected product contamination with a fungicide used to treat pallets. It was later determined that the issues of illness experienced by Coke consumers were likely the result of an ingredient used in the product and not the pallet. This raises the concern of where the pallet has been and what impact it will have on a product. How do you manage these potential issues? There are several approaches to pallet management:

1. Some facilities only use new pallets to ship their products.
2. Some facilities use plastic or fiber-glass pallets that are cleaned (washed) every time they are returned to the site and reused.
3. Some facilities use a pallet pooling service to source their pallets. Pallets are reused and maintained by the pooling service.
4. A rigorous inspection program of pallets that are brought into the facility and reused is another way to identify potential issues. Pallets are treated as a raw material and are subject to the same inspection criteria as any other raw material received into the facility.
5. Finally, some facilities use only single-use corrugated pallets that are not returned or reused at the site.

The method of pallet management used in your facility will be determined by either customer requirements (e.g., the use of a pallet pooling service) or the types of products and packaging materials used at your facility.

SUMMARY

Pallets are not merely a means of storing and transporting materials. Proper management of the pallet program will ensure that potential issues from pallets do not impact the facility or the products manufactured.