

RFID

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Growers and Grocers Get Into Plastic Pallet Pool

While the plastic pallets' lightweight and environmental benefits first wooed its customers, iGPS hopes RFID-powered traceability will convince more to begin using its pallets.

By Claire Swedberg

Several fresh food providers are beginning to use plastic RFID-enabled pallets made by Intelligent Global Pooling Systems (iGPS) rather than wooden pallets without RFID tags. Thus far, RFID has helped iGPS better manage the flow of its pallets, through more accurate and timely shipping and receiving records, while end users are still weighing the benefits of using the pallets' embedded RFID tags for shipment tracking within their own management systems.

Schoeller Arca Systems (SAS) makes the plastic pallets used by iGPS and its clients (see iGPS Rolls Out RFID-Enabled Plastic Pallets). To help meet the growing demand, SAS will double its capacity to manufacture iGPS pallets, using Xterprise's XARM 6000 solution to embed RFID tags at three additional assembly lines at its Michigan plant.

Despite the RFID-enabled tracking capabilities offered by iGPS, companies that ship food products say the pallets' primary attraction is their plastic composition, which they claim is lighter, more hygienic and sturdier than wood. Martori Farms, a produce grower in Scottsdale Ariz., and HEB Grocery Co., based in San Antonio, Texas, are among the iGPS converts.

Martori Farms ships the broccoli and melons it grows to distribution centers nationwide, which then transfer the produce to local retailers. "We have been urging our pallet suppliers to develop a plastic product for many years," says Paul Fleming, VP of marketing and business development for Martori Farms. "iGPS presented an option that included the benefits we desired in a pallet." Such advantages included the elimination of broken boards, wood pieces and nails from wooden pallets, which he says "were littering our warehouse floors."

The grower was attracted to the pallets because they are 50 percent lighter than wood pallets, which reduces shipping costs associated with fuel consumption, and also because they are washable and made of recyclable material. While Fleming says he hopes to eventually use the RFID tags more extensively for tracking the movement of Martori's products in the supply chain, he currently employs an RFID reader only at the distribution center, to verify the shipping and receiving of pallets.

"Integration of our WMS [warehouse management system] with the iGPS [tracking] system will take some time," Fleming states. Using Martori's WMS, he says, he hopes to marry the RFID number

encoded to the pallet tag with the company's own pallet license plate number—printed on a label attached to each shipment, and associated with a specific shipment and product being shipped—and use that to advance its own product-tracking and trace-back systems. "We currently use our own pallet tag number for advance shipping notices and billing, and the RFID union will enhance that process [by making it automatic]," he says.

Martori began using the iGPS reusable pallets with RFID tags about one year ago, for shipping a single product to its distributors and retailers. However, the company says it plans to expand its use of iGPS pallets and service offerings this year. Using hardware and software provided by iGPS, Martori used the RFID tags to reconcile shipments received at its distribution centers against its orders. In 2007, the company utilized about 42,000 iGPS pallets. However, Fleming says, Martori plans to nearly double its usage of iGPS pallets and services across its entire product line in the coming year, to about 80,000 iGPS pallets.

Each iGPS pallet comes with four ultrahigh-frequency (UHF) Gen 2 passive RFID inlays, one embedded in each corner. The inlays are sealed between the top and lower plastic deck when the pallet is manufactured. iGPS uses a variety of inlay manufacturers, says the company's CIO, Jack Sparn; among those commonly used is Avery Dennison RFID. "There are a half dozen good, solid passive tag manufacturers we will order from that can provide quality at a low cost."

iGPS employs printers from Zebra Technologies to print and emboss plastic labels that include a visual bar code on all four sides. The bar code represents the pallet's serial number, which is also printed on the label. That, Sparn says, provides three ways to identify any specific pallet: via RFID, bar-coded or human-readable data. All three numbers are "married" in iGPS' database and linked with future RFID scans with times, dates and locations as the pallets are moved.

"On our database," Sparn says, "we have authorized predetermined locations for shipping." When a customer such as Martori Farms places an order for pallets, it uses iGPS i-Trac software system, which is based on Xterprise's Supply Chain Network Execution (TraX) and Xterprise Asset Management (XAM) applications, built on the Microsoft BizTalk 2006 R2 platform. The software system that provides online data access to iGPS and its customers for pallet orders by that client, as well as the online status of all orders,

access to inventory information and historical reports on prior transactions.

iGPS accesses the order and contacts its exclusive third-party logistics services provider, Ryder Logistics, to ship a trailer of pallets to a specific customer location. The bill of lading is electronically recorded and transmitted to the iGPS depot that will be providing the pallets, and to the recipient. iGPS employs Alien Technology 9800 interrogators to read the unique electronic product code (EPC) encoded to each pallet's tags as it is shipped from its iGPS pallet pool locations.

Most of the iGPS pallets used by Martori Farms come from iGPS pallet pool site in Phoenix. When Martori ships its products, it carries the loaded pallets through an Alien 9800 RFID portal at its dock doors, provided by iGPS. The interrogator sends data to an edge server at the warehouse and linked to its LAN, using iGPS software known as iSUM. This makes the data available at the iGPS data center in Grand Rapids, Mich., via the Internet. Martori and iGPS can then access that data to confirm the shipment or receipt of the pallets at a specific location.

The RFID system provides iGPS with data regarding where the pallets are located, how long a customer has them and specific information about return dates that allows iGPS to bill for the exact number of days the pallets were in the user's possession. Its customers can also access that data.

Texan retailer HEB began using the iGPS system at its San Antonio warehouse about six months ago, Sparn says, and currently utilizes thousands of pallets per month. HEB initially used the pallets to ship such heavy items as dog food and beverages to test the plastic pallet.

When HEB receives the pallets from iGPS, it drives them past the Alien readers, where the tag ID numbers are captured and sent to the iGPS data center (using the iSUM system) via the Internet. When a product is packed on the pallets to be shipped to a retail location, the pallet tags are again read as they are loaded onto trucks. Once the pallets are emptied at the store, they are returned to one of the iGPS depots, where their tags, like Martori Farms' pallets, are interrogated. At that point, iGPS knows they have been returned.

"It appears the marketplace is extremely excited about the pallets," Sparn says, based on the numbers of requests he receives for more information. Still, he adds, the plastic, reusable and hygienic nature of the pallets is currently the greatest draw.