Mandarin Orange Packager Puts the Squeeze on Inefficient Marking
Porterville Citrus, a premier packager of multiple citrus fruits, including Mandarin oranges, improves packaging operations with the help of the MPERIA® platform.

Summary

Plant managers and production line operators alike are on a constant mission to improve their facility’s Overall Equipment Effectiveness (OEE). In the pursuit of this goal, every advantage makes a difference that impacts not only the organization’s overall bottom line, but also its reputation. Successful traceability initiatives depend on accurate, reliable marking and coding while increases in profitability require equipment that supports efficient operations and reduces downtime.

Accuracy, efficiency, and reliability are exactly what Porterville Citrus, Inc. (PCI) got with their Matthews Marking Solution.

Matthews worked with Porterville on their Mandarin processing production line. The Matthews solution helped PCI boost productivity, improve reliability, increase mark quality, and reduce expenses. Overall, PCI anticipates a one-year ROI, and has started considering other projects in their additional facilities which could yield similar results.
The Challenge

Founded in 1992, PCI is an employee-owned citrus processor affiliated with Sunkist Growers. They have eight packing houses located throughout Tulare County in California, and they pack approximately 14 million cartons of citrus each season. Their Mandarin processing production line alone processes, packages, and ships approximately 5 million boxes of Sunkist Mandarins each year.

Prior to working with Matthews, PCI was using stickers or print-and-apply labels to mark these boxes of Mandarins. As General Manager, Ken Wileman explains, “We were using stickers for our labeling purpose, and with all the mess and all the cost that’s associated with the stickering, it continued to be a problem over the years.”

Clearly, labels were neither an optimal nor a cost-effective solution. There were multiple issues:

+ The consumable labels were expensive and not always readily available.
+ The label printed by the print-and-apply labeling machine was often difficult to read or completely illegible.
+ The labels often fell off, creating a mess and even getting into equipment.
+ The equipment required a lot of maintenance, which slowed productivity and reduced efficiency by regularly causing line stoppages and rework.

Though Porterville had been researching possible alternatives to their labeling system for years, they hadn’t come across any solution that made the switch seem worthwhile. That was, until they discovered Matthews Marking Systems.

As PCI and Matthews began to work on a custom solution, they kept several key objectives in mind:

+ Improve product traceability
+ Reduce costs
+ Optimize product-line efficiency
The Solution

Matthews designed a solution based on PCI’s overall objectives. The solution includes three core elements:

MPERIA® Platform Controller

At the heart of the solution is the MPERIA Platform Controller, the only universal marking and coding automation platform that works with virtually any hardware or software, providing a centralized, adaptable marking and coding platform. PCI was keenly interested in centralizing control of their marking operations. They also needed to link their backend business database to the traceability information printed on their product in order to provide the full visibility needed by their traceability initiative. MPERIA helped Porterville accomplish both of these goals, and was also instrumental in bringing together a vision system as well as a production line diverter.
“The equipment is installed in the carton conveying system right before it’s loaded onto the pallet—a very difficult, high-volume area of the whole process. That’s where a lot of the cartons come out very quickly, and are transitioning from a carton to a hand to a pallet. The equipment needs to be very quick, and it needs to be accurate so that the gentleman can read the box appropriately.”

– Ken Wileman, General Manager

Three MPERIA L-Series L12 Thermal Inkjet Printers

A cost-effective alternative to continuous inkjet and thermal transfer printers, the MPERIA L-Series delivers the ultimate in flexibility and precision, keeping products in compliance while ensuring brand excellence. In PCI’s case, the L-Series L12 systems print a data matrix (2D) code after the cartons are loaded. That data matrix code contains all the information needed to ensure accurate product marking by the T-Series, which in turn ensures that PCI’s different cartons of Mandarins are correctly marked and traceable.

One MPERIA T-Series T100E Piezo Inkjet Printer

Offering exceptional print resolution and versatility along with unparalleled levels of readability, the MPERIA T-Series Piezo Inkjet Printer is perfect for high-visibility branding and product information. PCI relies on the T-Series to mark their cartons of Mandarins reliably every single time. The T-Series prints all relevant product traceability information on each carton, including clearly legible barcodes with pack dates and additional product data.
The Matthews solution integrated seamlessly with PCI's existing line components and workflow while also improving speed, accuracy, and ease of operation. Here’s what the new flow looks like:

+ The process initiates when a production employee scans the relevant Mandarin orange variety into MPERIA.

+ MPERIA interprets the barcode and creates a data matrix code, which it then routes to one of the three L-Series thermal inkjet printers installed on each production line.

+ From there, the data-matrix-marked cartons travel along the conveyor, passing by the vision system, which is linked to the MPERIA controller.

+ Within milliseconds of receiving the scanned input from the vision system, MPERIA sends the correct data to the T-Series printer. This data includes product information, pack date, lot code, and barcodes for shipping traceability.

In addition to the core solution components, Matthews also integrated a conveyor diverter, which is linked to MPERIA via a plug-in. Though this was not part of the original solution, it has proven to be a very valuable enhancement that helps PCI avoid costly mistakes. For example, before the new system was installed, there was an instance of an errant carton of Mandarins being incorrectly routed to the pallet-loading station and put into the wrong shipment. As a result, the retailer rejected the entire pallet, and levied a substantial fine for the mistake. With MPERIA providing system-wide control, accurately reading the Mandarin codes, and deploying the conveyor diverter to send the product to the correct pallet, this kind of mistake is no longer a concern.
The Results

The Matthews Marking solution delivered on all Porterville’s original objectives:

+ Provided a big boost for productivity
+ Improved reliability, which in turn increased speed and efficiency
+ Improved the quality of the mark, which elevates the PCI brand
+ Reduced consumable expenses by approximately 80%
+ Reduced the demand for maintenance and the occurrence of production line delays and stoppages
+ Reduced costly errors

Overall, PCI anticipates that the solution will deliver a full ROI within one year.

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We really enjoy this equipment. It’s clean, easy to maintain, easy to read, and very quick. I highly recommend Matthews to other suppliers. They have a great product, and they have also provided great service.

– Ken Wileman
About Porterville Citrus, Inc.

Established in 1992, Porterville Citrus, Inc. (PCI) is proudly affiliated with Sunkist Growers, Inc. and their 120-year history committed to family-owned farms. Today, PCI is 100% owned by its employees. The company owns and operates 8 packing houses located throughout Tulare County and packs approximately 14 million cartons of citrus each season. PCI remains dedicated to being a world class provider of citrus to the world while maintaining the “small company” approach that growers and fruit buyers have trusted through the years.