

*Who would have thought a purchase of plastic balls from a Danish toy store would help drive innovations in fruit and vegetable transportation? It is probably not the first idea that comes to mind, but it's exactly what the R&D team set out to do a few years ago at Maersk.*



Maersk Container Industry (MCI) didn't just buy a few plastic balls but 116,000 of them; enough to fill a container and see how certain adjustments impacted temperature distribution, as if the toys were breathing fruit.

MCI sales and marketing general manager Anders Holm told [www.freshfruitportal.com](http://www.freshfruitportal.com) the study was triggered by a desire to understand more about how temperatures changed in reefer containers.

"When you look at reefer containers and reefer units, you are looking at the supply air and the return air," he said.

"But in reality, what you really want to know is the temperature in the cardboard where the fruit and vegetables are.

"What you quickly find is that there could be a big difference in temperature from the first carton where the air comes in to a carton in the middle of a reefer."

To test these differences, the team put temperature sensors on the plastic balls, as well as small heaters on some so they would mimic the natural heat given off by the respiration of different fruits.

"With that we can analyze the temperature distribution, to see what happens when we change something in the software, the hardware, or how we pack the cartons differently in the reefer.

"It is possible that these sorts of tests could be done with different packing. That is not something we're doing but in theory it could be done."

The ongoing studies take place at the company's testing facilities in Denmark, stimulating the actual conditions the containers would experience during transport, with heat temperature and replicating heat influx from the sun through the use of heat panels.

"We have been able to use these results in our development to optimize our efficiency, and you could say that some of the performance success of our Star Cool system is a result of these tests - it's not the only reason but one element.

"Star Cool reefers are the most energy efficient on the market, but when you're trying to improve energy efficiency it could be tempting to adjust down on the cooling temperature, so it's very important that fruit condition is the first priority.

"We do everything we can to ensure that fruit and vegetables are as close as possible to the highest condition."

Click [here](#) to see Maersk's video about its container trade and innovations.

Photo: Maersk

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