RESOURCE ARTICLE · TRACEABILITY

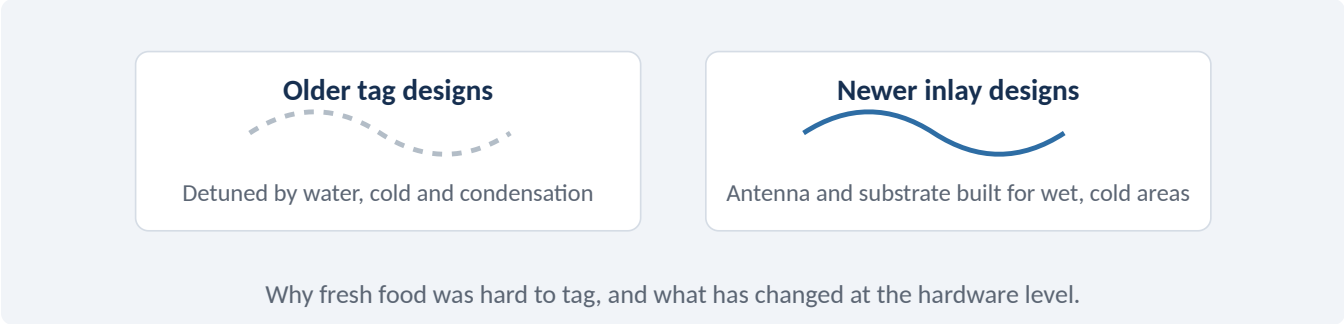
RFID in Fresh Food Supply Chains

Why item-level RFID is reaching categories that were historically too difficult to tag.

RFID has been used in retail and logistics for years, but fresh food has mostly been left out of the conversation. That's starting to change, and it's worth understanding why.

Why RFID Has Been Hard for Fresh Food

RFID tags communicate using radio waves, and radio waves don't travel well through water. Meat, seafood, dairy, and produce are exactly the categories where moisture, condensation, and cold storage are unavoidable. Those conditions have historically caused standard RFID tags to lose reliability or fail outright. For a long time, that physical limitation kept fresh food out of most RFID programs entirely.



Why fresh food was hard to tag, and what has changed at the hardware level.

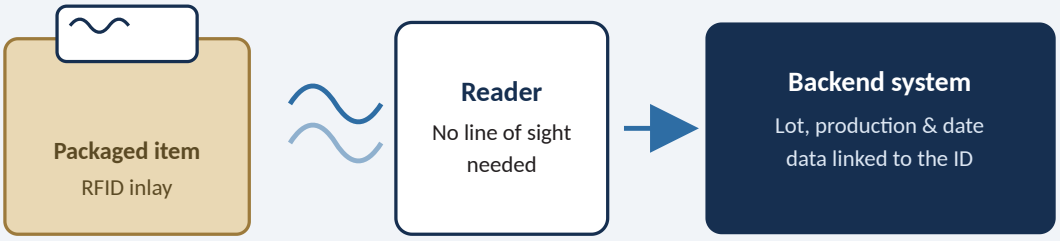
What's Changed

Newer RFID inlay designs address this at the hardware level. The antenna and substrate construction is engineered specifically to maintain a reliable read in cold, wet environments, rather than detuning the way older tag designs did. That shift is opening the door to item-level tagging in departments that were essentially untaggable just a few years ago.

The Business Case: Beyond Just Compliance

It's tempting to think of RFID adoption as purely a response to retailer mandates, but the operational case stands on its own. Unlike a barcode, an RFID tag doesn't require line-of-sight scanning. A reader can identify tagged products automatically as they move through a facility, without anyone manually scanning each item. That translates to real-time inventory visibility, faster counts, and less manual labor spent on tracking.

It also directly supports freshness management. Automated tracking of production dates and lot information makes it easier to rotate stock properly and catch aging inventory before it becomes waste, a priority for major retailers with public sustainability commitments.



Simple tag = unique serial ID only. Detailed data lives in the backend.

Item-level tracking: the tag carries an identifier, and the freshness and lot details sit in the systems linked to it.

The Recall Argument

Item-level data changes the math on recalls. Without it, a contamination issue affecting a small number of lots can force an entire product category off shelves nationwide, simply because there's no way to tell which specific units are affected. The industry has seen that play out before with widespread, costly recalls on products like packaged produce. With item-level RFID or serialized barcoding, only the specific affected lots need to come down, protecting consumers and the rest of an otherwise unaffected supply chain.

Where This Is Headed

Current industry encoding standards favor keeping the tag itself simple, generally just a unique serialized identifier. The detailed freshness, lot, and production data lives in backend systems linked to that ID. That approach avoids slowing down packing lines or requiring more expensive tag hardware, which matters for cost-sensitive categories like fresh food.

> **The takeaway:** Packers who start planning now, rather than waiting for a specific mandate, tend to have a much smoother transition.

If you're trying to figure out where your own operation stands, our Item-Level Traceability service is built to help with exactly that.

Planning for item-level tracking?

Let's look at where your operation stands today and what a realistic next step looks like.

Contact Us

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