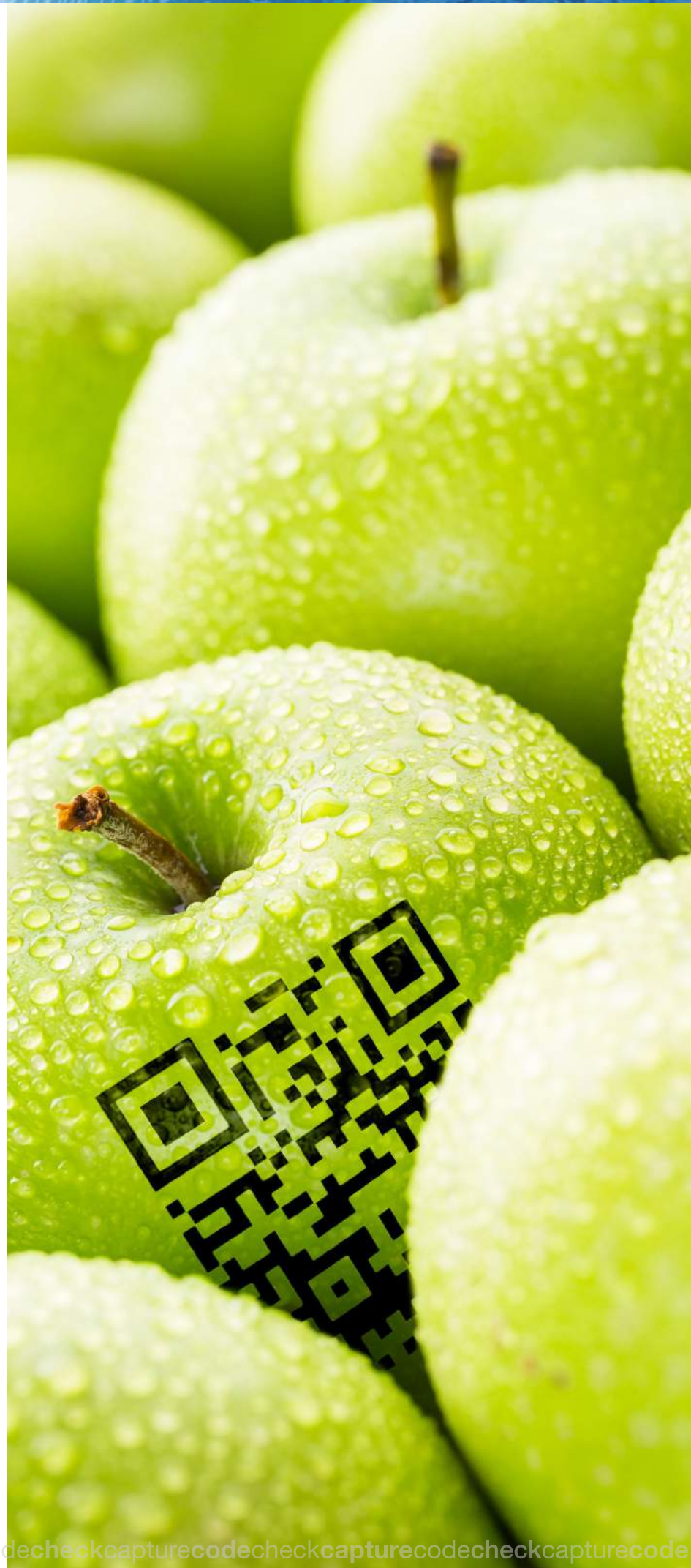


# Ultimate Guide to Serialisation in the Food and Beverage Industry



## Fact: Counterfeit products are on the rise.

Counterfeiting is a global issue and has been for years. But advances in technology have given counterfeiters the ability to make ever more convincing counterfeit goods, and fast.

But it's no longer only luxury products and electronics that are being counterfeited. Today we're seeing a rise in counterfeit food and beverage products. And while it's obviously a global issue, counterfeiters are increasingly preying on Australian goods, taking advantage of their reputation as superior, high-quality produce.

Just look at the "Barossa" wine that has never been within a sniff of Australian air, or the "Benfolds" wine bottles that had an eerie resemblance to those of Penfolds. Then there's Australian farmer David Blackmore who found out his premium Blackmore Wagyu Beef was being sold in China as a cheaper cut. And the Tasmanian cherry growers whose produce was being sold in counterfeit "Tasmanian-grown" packaging in China and Vietnam .

Aussie beef farmers, breweries, fresh produce growers, wine makers, honey producers and dairy processors need to be aware of the threat that counterfeit products pose to their brand integrity. These counterfeit goods are competing with Australian exporters for shelf space overseas, and in many cases are actually outselling the real deal – the fake "Tasmanian-grown" cherries were outselling the authentic produce five to one!

And it's not just profits that can be hurt; counterfeit food and beverage products can do everlasting damage to a brand and put consumers in danger – especially because we can't be sure what's inside the packaging.

That's where serialisation comes in. With the growth in goods exports, the time has come for the food and beverage industry to apply serialisation for better traceability and authenticity. After all, protecting their brands and their consumers should be priorities for every business.

**So welcome to the Ultimate Guide to Serialisation in the Food and Beverage Industry. Here you'll find valuable insights and expert tips to help you get started with serialisation.**



# What is serialisation?

First things first – what do we mean when we talk about serialisation?

Simply understood, serialisation is the process of putting a unique mark on every product and packaging level to enable traceability and facilitate authentication to assure customers the product is genuine.

**In practice, serialisation combines three processes into one solution:**

- 1. Authentication:** Encompasses any techniques that confirm the product (such as a wine bottle) is authentic. For example, unique codes can be generated to authenticate the product.
- 2. Track and trace:** Enables the product to be traced through the supply chain, all the way to the consumer, for example, using barcodes on product packaging.
- 3. Marketing:** Adding QR codes or other scannable codes to labels means consumers can scan the code with their smartphones to access interactive, engaging and trustworthy online content.

## Why you need serialisation

There is one supreme reason why the food and beverage industry needs to look to serialisation: **the rise of counterfeiting.**

While the increasingly global supply chain can be great for business, it comes with its fair share of complexities and risks. Counterfeiting is hurting Australian products here and overseas, and the food and beverage industry is a growing victim. The value of fake goods was expected to soar to \$AU2.3 trillion worldwide in 2015 – a staggering 10,000% increase from two decades ago.

This has huge implications for any Australian company that wants to sell in China. Australia is the second biggest exporter to China and growing. But here's a scary fact: China's CTV reported that 50% of wine sold in China could be fake. Some argue that it could be as much as 90% for high-profile brands, like Penfolds Grange.

## So, what's the answer?

Good branding alone itself isn't enough. After all, many Chinese consumers don't know what to look for on the labels, especially when the name and logo are altered to look like the original. With an inability to read French or English, it can be difficult for unsuspecting buyers to discern what's real and what's fake.

Serialisation provides a way to counteract the counterfeiters by making it more difficult, and less financially viable, for counterfeiters to enter the supply chain. This helps minimise the risk to consumers and improve consumer safety, while also protecting the brand.

- **Counting products:** Ensure all products are present, for example, that there are no gaps in a chocolate box.
- **Dimensions / measurement:** Checking various aspects such as open flaps on a carton, height, width, diameter, distance etc.
- **Item present / missing:** Does the pack contain the correct number of items; e.g. is there a knife, fork and spoon in each meal?



# 7 Ways serialisation can benefit your business

**Take a look at these key benefits of serialisation:**

## 1. Better transparency

In most supply chains, products change ownership a number of times, and the more complex and global the supply chain becomes, the more difficult it is to obtain real-time transparency. That's where serialisation comes in.

Much of the information companies currently collect to track products is not enough to provide real transparency. A serialisation code can be as deep and detailed as the manufacturer or trading partner requires – apart from the unique identifier for each individual product it might include the Global Trade Identification Number (GTIN), product description, stock-keeping unit (SKU), lot or batch number, expiration date, and more. As such, serialisation gives the finite visibility manufacturers and retailers are striving for.

## 2. Fight counterfeiting

Counterfeiting is a real risk to consumers in the food and health industries, and it can cause irreparable damage to a company's bottom line. However, serialisation makes it tougher for counterfeiters to enter the supply chain. This helps minimise risk to consumers and improves consumer safety.

## 3. Minimise recalls

With greater granularity of data, serialisation helps manufacturers / brand owners with timely recalls, returns, withdrawals and rebates, while simultaneously shrinking loss recovery.

## 4. Protect the brand

Serialisation empowers suppliers and retailers with the ability to detect and manage counterfeit product threats, thereby protecting the integrity of real brands. Also, by speeding up recalls and withdrawals, a brand's reputation is protected.

## 5. Build consumer trust

Serialisation gives companies the ability to build and enhance consumer trust through product verification or authentication. Consumer trust is the Holy Grail for any business and will ultimately empower you to drive customer loyalty long into the future.

## 6. Control inventory and shipping accuracy

With serialisation, manufacturers can capture all the necessary information as a product moves through the supply chain to the consumer. With improved supply chain visibility, you can see the exact item and quantities delivered at each point in the supply chain. This gives better insight into, and therefore control of, raw materials ordering, process scheduling and shipping accuracy. It also provides a better understanding of the impact of any disruptions through the supply chain, so processes can be optimised to improve efficiencies and control costs.

## 7. Trace returns

Serialisation enables you to detect returns that were not originally sold to the customer.

## How serialisation works

With serialisation at the consumer unit level, each product has a unique code, which can then be scanned by a consumer to verify the product's authenticity. This also enables a direct marketing opportunity and, at the same time, the brand owner receives data of where the product is being scanned.

### **A serialisation system typically consists of four building blocks:**

- Unique identification codes
- Data capture
- Links management
- Data communication

### **Using these building blocks, and depending on your brand objectives, there are three possible ways to implement serialisation for your products:**

1. Serialisation at the consumer unit level with a unique number placed on the unit using a data carrier e.g. data bar, 2D code, numeric code
2. Serialisation using the existing Global Trade Item Number (GTIN) – a serialised GTIN can be used for a more integrated approach
3. Serialisation across the supply chain, including consumer unit, cartons and pallets, for complete supply chain visibility and end-to-end track and trace

The stage you choose depends on the needs of your business. Talk to your serialisation software partner for advice.



# How to implement serialisation

**Once you know that serialisation is right for your business, how do you get started? Easy – follow the steps below:**

## Step 1. Lay the groundwork

As with every new process, you need to make sure serialisation really is right for your business. If you're unsure, you can always start with a pilot program and evaluate from there.

## Step 2. Choose a serialisation software partner

The first step is to choose the right serialisation software partner. Their job is to can generate unique codes and provide a simple front-end for validating them. A serialisation expert like Matthews Australasia will help you determine future requirements and work out whether traceability needs to be achieved at secondary and tertiary units. They will also take into account the requirements from a compliance perspective as well as your brand's objectives. Get this right and the rest is smooth sailing.

## Step 3. Select a data carrier

Select a data carrier that best suits your business goals and process, such as a Datamatrix code, QR code, DataBar, Numeric code, or GTIN. Your software partner will be able to help you identify the right solution for your business. Learn more about the different types of barcodes in our Barcode FAQs.

## Step 4. Evaluate technology options

Assess the various technology options to apply the code in-line. For food and beverage companies there are four options: laser, print & apply labels, thermal transfer, and inkjet. Which one you choose will depend on your unique product and environment.

**Here's a quick guide to get you started:**

- **Laser coding and marking a serialised code:** Lasers are an extremely fast, cost-effective way to mark high quality, permanent codes onto products. Lasers can code onto a range of substrates, including cardboard, glass and metal packaging. This is often the preferred choice for serialisation as it creates a high quality, indelible mark authenticating your brand.
- **Unique code on film packaging using TTO:** Thermal Transfer Overprinters (TTOs) are already a popular coding method for fresh produce processors, as they can produce crisp and durable marks on flexible packaging films. Use TTOs to print a unique code onto film packaging. Because a thermal transfer code is highly resistant to any chemicals, humidity, UV rays, abrasion and climatic changes, you can be sure that the code will remain clear and crisp right through to the end consumer.
- **Printing and applying labels with a unique code:** Many food and beverage use a cost-effective print and apply labelling solution. This can also be used for serialisation by adding the unique code to the label. It is the recommended option for shippers and pallets. Security labels, if used, make sure the product is uniquely identified with a number while also being resistant to scratching and abrasion that may occur through the supply chain.

## Step 5. Bring it all together

Work with your coding and labelling partner to apply the code using the right technology. The key to a successful serialisation system is flexibility. Don't design and build a system that complies with the current regulations but cannot handle any change if the regulations change in the future. Think ahead!

## Step 6. Take it further for full track and trace

For complete track and trace through the supply chain, serialise your secondary unit and tertiary units too. As products change hands, your serialisation software partner will track and trace the custodial history of the item each time a pallet is scanned. Information is available for each unique item produced, including ownership and the owner's retail location.

From there, all products produced and distributed are protected by the serialisation software partner's system. Consumers or any other interested parties are able to verify these products simply by scanning the barcode, QR code or other data carrier using a smartphone app in most cases.

Because each serialised data carrier can only be assigned to a single product, and each product can only be in one location at any one time, counterfeiters seeking to copy or reuse these barcodes will be caught out.

# Top factors to consider for serialisation

## **Stop! Don't implement serialisation until you've considered these important factors:**

- Consider the impact of serialisation on your existing processes and line speeds.
- Review all the SKUs to be serialised and all existing packaging artwork to determine the location and permanency of the code.
- Choose the right data carrier (i.e. QR, Datamatrix, GS1 Datamatrix barcodes, GTIN barcodes).
- Make use of GS1 Standards, if thinking of taking serialisation beyond the consumer unit.
- Consider aggregation strategies for shipper and pallet serialisation.
- Choose a technology partner that understands serialisation and is able to provide 'serialisation ready' devices and solutions.
- Implement in-line verification technology to ensure the codes are right and can be scanned.





# Serialisation In Action: Camperdown Dairy International

## Challenge

In 2013, China clamped down on the flood of foreign infant formula companies. Importing manufacturers must provide the Certification and Accreditation Administration of China (CNCA), plus meet a series of requirements under the Infant Formula Milk Powder Production License Examination Rules (2013). Product inspection, product safety-control and product traceability come under the Infant Formula Milk Powder Production License Examination Rules.

Camperdown Dairy International needed to have strong product traceability processes in place to meet these guidelines and gain Chinese government accreditation.

## Solution

Starting from scratch, Camperdown researched cutting-edge product ID technologies over 12 months, investigating a wide range of suppliers. They chose to work with Matthews Australasia because of the company's total hardware and software solution, flexibility in getting it up and running, knowledge, and partnership approach.

"This is a rapidly evolving area in terms of consumer product, and Matthews provided excellent insight into the market trends around this style of coding and the equipment," says Gavin Evans, Camperdown's General Manager – Powder. "They provided the solution for both the hardware — the laser — and the software and cloud-based traceability system through their relationship with Trust Codes. But they were also prepared to share the risk with us and to move this forward on a tight timeframe, which showed their partnering spirit rather than just as an 'arms length' equipment supplier."

Working in conjunction with Trust Codes' cloud-based platform, the solution uses a Matthews' Solaris scribing laser to mark each tin with a unique, serialised QR code (generated by Trust Codes). Matthews' production-line software iDSnet integrates with Trust Codes and the advanced Solaris laser scribing system on the production line to provide Camperdown with an end-to-end solution.

The Trust Code provides advanced cryptographic code generation and fraud-tracking algorithms, as well as the consumer interface. Using their smartphones, consumers can scan the QR codes on individual formula tins to identify and authenticate that individual product and see its history. Scanned information also shows key data about Camperdown, Australian dairy products, and how best to consume the product.

## Results

- **Accreditation:** The track-and-trace system's effectiveness resulted in the Chinese Government accrediting Camperdown to import powdered infant formula. The Australia manufacturer could therefore sign deals with distributors, with a retail value of around \$9 billion.
- **Anti-counterfeiting:** The laser technology gives Camperdown depth of information, speed with in-line marking, accuracy, and supports business growth – all with the confidence the code is both secure and difficult to reproduce from an anti-counterfeiting perspective.
- **Authentication:** The solution at Camperdown's factory incorporated in-line validation with a camera-based system by ensuring each printed code is verified and scannable, before it's uploaded to the secure Trust Codes cloud. Consumers can use their smartphones to scan the code and authenticate the product is genuine.
- **Consumer connection:** Chinese consumers use the scanning capability in the free, popular Chinese messaging app, We Chat. With no need to download a separate program, scanning is easy and the consumer can interact with the manufacturer at POS.
- **Future flexible:** Camperdown has found the solution simple to use with the intuitive, user-friendly iDSnet. The software's flexibility means they can continue maximising its benefits long into the future.

**Read and watch the full case study online!**



## 10 Must-know tips for serialisation success

From our experience implementing serialisation for many companies over the years, we've found important tips and lesser-known tricks that will help make sure your serialisation is a success:

- TIP #1:** Move 2D barcodes away from other barcodes on the packaging so your scanning is efficient.
- TIP #2:** Test the code printing on several different substrates, especially if you're planning in changing your packaging down the track.
- TIP #3:** Use barcode grading to ensure your barcode can be scanned consistently at all stages of the supply chain.
- TIP #4:** Be aware of the compliance requirements if exporting.
- TIP #5:** Ensure your existing systems can operate together seamlessly with serialisation-control software.
- TIP #6:** Make sure your existing network can handle the data flow.
- TIP #7:** Use validation processes in line, such as vision inspection, data readers etc.
- TIP #8:** Develop clear processes on how any rework will be handled and make sure any rework or removing samples for Quality Assurance doesn't cause aggregation issues.
- TIP #9:** Control pallet aggregation and avoid cartons being moved around before a pallet is completely wrapped up and labelled.
- TIP #10:** Control products being picked up from the line.

Doing your homework at the start avoids project delays. A pilot project for proof of concept is also a good idea if financially viable.



## 5 Lessons On Serialisation From Healthcare

The healthcare industry is the “poster boy” of serialisation, with well-defined processes and standards in EU and USA – especially in the pharmaceuticals sector.

It might not be perfect (and indeed probably never will be, given the complexity of the industry), but healthcare players are continuously improving and developing their approach in order to enhance patient safety.

**If you're considering serialisation, here are five lessons you can learn from the healthcare industry:**

### 1. Be flexible

When properly implemented, serialisation should allow manufacturers to prepare a serialised item to meet any country's rules and regulations, now and in the future, without having to start over each time. The key here is flexibility: don't design and build a system that complies with China's regulations, but won't handle future laws of other countries you may want to export to.

For example, in 2015, South Korea introduced a requirement for serialisation of medicine packs to protect against counterfeiting and provide a more secure supply chain. All products must be serialised by the end of 2015. So leading pharmaceutical companies are thinking beyond the imminent U.S. requirements and looking at how their systems will support regulations around the globe.

The best approach is to track regulations in all countries, even those in which you do not currently export to. Because if you are ready to export when the time is right, you could get the jump on your competition.

### 2. Take a structured approach

Success in both designing and implementing a serialisation program comes down to a structured approach. Think of serialisation as an ongoing process, rather than a project with a set end date. Countries modify and establish new regulations. Trading partners come and go. All these things require updating of a serialisation program. Be sure to get early input and buy-in from all stakeholders and prepare them (and yourself) for the long haul.

### 3. Collaborate for success

The goal of serialisation is for everyone to share reliable, standardised information across the supply chain. The healthcare industry recognises that with so many players in the supply chain the only way to achieve this is with a common set of standards. It's taken a long time, but the industry is moving decisively towards adoption of GS1 standards for serialisation.

This means industry players need to collaborate. In 2014, Australia's Community Service Obligation (CSO) wholesalers – Symbion, Sigma, API and National Pharmacies – set aside their competitive differences to implement a common, central source for all medicine supply chain product information under the framework of global GS1 Standards (read more here). By using unique Global Trade Item Number (GTIN) identification encoded in GS1 barcodes, product identification is already proving to be more robust and traceable than ever before, helping to safeguard against counterfeiting, assist with management of medicine shortfalls and enhance the ability for recalls.

The lesson here is that industry players of all sizes **need to collaborate**. It's only by working together that serialisation can truly work for everyone.



## 4. It all starts with coding

While serialisation reaches deep across multiple parts of the organisation and supply chain, it all starts with one simple physical code applied to the packaging. Take time to work out which code you need, where it should go and what changes you will need to make to accommodate it.

For example, when a pharmaceutical manufacturer was printing a 2D code for a temperature-sensitive product, they needed to move the code from the side flap to the end flap. This required a slightly bigger carton, which therefore required a slightly bigger shipping case, and led to revalidation of the entire chain. Look at your coding equipment – is it serialisation ready? It's not just about printing a 2D code, but having built-in two-way communications that can receive and transmit information.

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## 5. Never forget the big picture

The healthcare industry stays focused on the big picture: how serialisation can enhance patient safety. After all, this is a sector that deals with human lives. Global product identification can help reduce the growth of counterfeit drugs and allow faster responses upon detection in the supply chain. This understanding of the big picture continues to drive the industry forward in how it implements serialisation.

But why should this be restricted to the healthcare industry? Consumer safety is critical in almost every industry, including the food and beverage. It's easy to lose sight of the “why” while implementing the details, but by keeping your eye on the big picture, you are better able to maintain momentum and achieve success.



## Final thoughts

**Counterfeiting is here to stay.** But while you must accept that counterfeiting is a fact, you shouldn't wait to be targeted. Serialisation provides a very effective way of protecting your brand integrity and consumers' safety from being compromised by fake products.

The best thing any food and beverage company can do is act now. Spend some time working out whether serialisation is right for your business. Better yet, talk to the specialists at Matthews Australasia for advice. We are the experts in providing serialisation-ready devices and solutions for food and beverage suppliers. When you're ready to go, we will make sure you've got everything you need to make serialisation a success.

**Get access to more free resources, blogs, ebooks and videos on our website.**

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i <http://www.abc.net.au/news/2014-12-15/nm-chinese-counterfeits-for-monday/5961030>

ii <http://www.abc.net.au/news/2015-06-05/cherries-in-fake-'tasmanian-grown'-boxes-sold-overseas/6526438>

iii <http://www.smh.com.au/business/retail/labelling-liars-how-australian-food-is-hot-property-20150805-girzir.html#ixzz3lazCkuEe>



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