# Organic Anti-counterfeiting Techniques in China

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Key words: Organic, Anti-counterfeiting, Label, Traceability, QR Code, China

**Author's Background**

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## Summary

*The development of anti-counterfeiting organic labelling technique in China is introduced, including three generations of the techniques, especially the third-generation QR Code anti-counterfeiting traceable organic label. How to use the anti-counterfeiting technique to enable the organic products to be "easy in identification, traceable in information and controllable in quantity", how to enhance consumers' recognition and how to power the government's regulation enforcement on organic market were demonstrated.*

## Background

With the rapid development of Chinese organic industry in recent years, the National Regulation for certification and management of organic products becomes more and more strict, and the new issued organic regulation system which is even so-called "the world's most strict" has been implemented. From the policy level, the Government continuously encourages the organic certification bodies to implement stricter anti-counterfeiting and traceable measures, ensuring every certification label can be traced back from the market to its corresponding organic certificate, the product and the producer. It is very important to make innovation on the organic label anti-counterfeiting technique and make it adapted to the requirements of new situation. Under this background, the Organic Food Certification and Development Center of China (OFDC) conducted a study and exploration on the development of Chinese anti-counterfeiting organic label technique.

## Main chapter

In recent years, more and more attention has been given to the anti-counterfeiting technique for the labelling of organic products. After continues innovation, the organic certification system has been gradually entering into a better stage of self-improvement and self-development.

The first-generation label for organic products worked with laser anti-counterfeiting technique, which lacked effective regulatory control on the quantity of organic products. According to the National Organic Regulation of that time, only China organic product certification label and the logo or the name of the certification body were required to be put on the outer packing. However, this Regulation was not strong enough on the excessive printing and sticking of organic labels conducted by some unscrupulous businesses, and was insufficient in the supervision and identification of organic products.

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**Figure 1. The first & second-generation anti-counterfeiting organic label**

From March 1, 2012, with the implementation of the new version of China's National Standards for Organic Products-GB/T1963-2011, the second-generation anti-counterfeiting organic label technique was developed. It stipulated that each smallest package of all organic products in the market must have a traceable label with a unique 17-digit code for ensuring the identification for each packed organic product. In addition to the inclusion of China national organic product logo and the related certification body logo, the second-generation label also contains product label coding and 17-digit code, all of which can ensure the authenticity and uniqueness of each organic product, and enable China organic products to be "traceable in information and controllable in quantity". Therefore, the anti-counterfeiting technique for organic products label in China has taken the first step towards self-improvement—from traditional packaging anti-counterfeiting to quantity control on organic products.

After the implementation of the new organic regulation for more than one year, we realized that the second-generation organic anti-counterfeiting technique still has its limitations in some ways based on the authors' many studies and repeated proofs. Firstly, the grey part of the label for the 17-digit organic code can be scraped and queried only after the purchasing of the product. It is impossible to identify the certification status of the product before purchasing. Secondly, manually entering the national government authority's webpage to verify the 17-digit organic code is somewhat inconvenience and takes time. Thirdly, the query rate conducted by the consumers is low. Fourthly, the potential of extending the contents of the online database platform of the national authority for the secondly generation of the label is low due to the restrictions on database capacity and manpower.

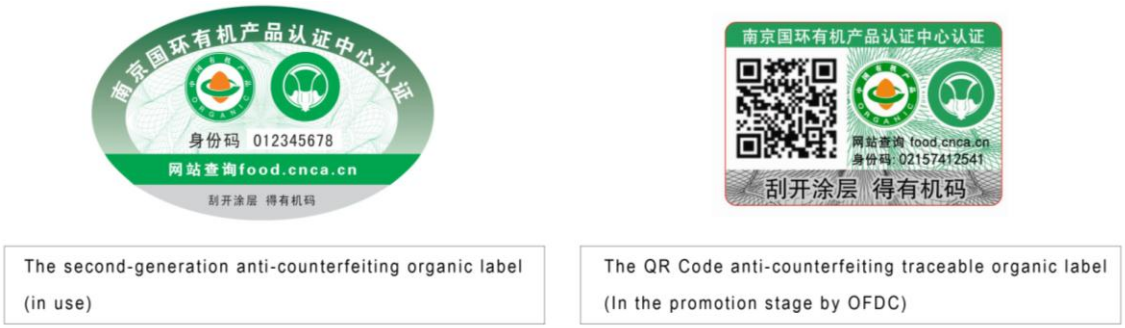


**Figure 2. The second-generation & QR Code anti-counterfeiting organic label**

In order to make it more convenience for consumers and enable the anti-counterfeiting techniques to work more effectively, the Organic Food Development and Certification Center of China (OFDC), has tried to further develop a new generation of label, that is, the QR Code anti-counterfeiting traceable organic label and its management system.

In view of the popularity of smart phones and QR code in China, and considering the technology of the second-generation anti- counterfeiting traceable organic label and QR code, we designed the QR Code anti-counterfeiting traceable label, and has promoted to pilot use in some certified organizations. The QR Code organic anti-counterfeiting traceable organic label and its management system consists of QR

codes distribution system, inquiry system and traceability system database. The working process is as follows :(1) The certified operator submits the product information to the certification body; (2) The management system generates the QR codes in accordance with the uploaded information and prints the labels; (3) The certified operator sticks the QR codes included label on organic products; (4) Organic consumers inquire the products through scanning the QR code by smart phone and give feed back if needed.

It is one more innovation after the implementation of the second generation anti-counterfeiting label organic products. It can not only allow for instant query but also could have traceable system with the whole-process monitoring for organic products from farm to table. In addition, the new label and its management system can also provide some extended services, such as uploading company profile, related information, E-commerce and activity experiencing.

While using the QR Code anti-counterfeiting traceable organic label, the consumers can scan the QR code by their smart mobile phones as long as they are installed with QR code scanner to get the information before purchasing. The information that the consumers can get include names of products, certification body, producer, and product specifications etc. The consumer can know the certification status of the organic products before purchasing, which will effectively promote the consumption of organic products. With the increase of awareness in self-protection and the vigorous business promotion and media campaigns, the QR Code anti-counterfeiting traceable organic label will be more and more widely used in the future.

Now, we have been gradually promoting the use of this third-generation anti-counterfeiting technique, and trying to make it more perfect on the road of exploration of such techniques. By this way, it will promote the combination of organic sector and information technology, regulate organic certification activities and organic market, improve the effectiveness of organic certification, enhance the credibility of organic products, advance the sustainability and soundness of organic production and further facilitate the construction of social credit system.

**Core messages and conclusions**

We hope, the application and popularization of third-generation anti-fake organic labelling technology (QR code technology) in China can not only check the authenticity of China's organic products and make it be traceable, but also provide reference and experience to our organic colleagues in the world in guaranteeing the integrity of organic products and promoting the sustainable development of the world organic movements.