



Science For A Better Life

From farm to market  
– being **traceable**  
and **sustainable** in China



food chain partnership



## How it all started

**Agriculture** is an industry of significant national interest and people's livelihood in China with over 300 million farmers. China ranks top in agricultural output in the world, primarily producing rice, wheat, potatoes, sorghum, peanuts, tea, millet, barley, cotton, oilseed, pork, and fish. Despite rapid growth in output, the Chinese agricultural sector still faces several challenges. There is a chain of intermediaries between the production in the farmland and the end-consumer in the cities. Mainly due to a lack of information flowing through these different stages, farmers find it difficult to forecast the demand for different types of fruit and vegetables. To maximize their profits they therefore can only produce fruit and vegetables having generated the highest revenues in the region in the previous year.

Still, the gap between national and global trade standards in some areas of the Chinese economy leaves space to improve, especially to meet the growing demands for certified safety, quality, and sustainability standards set by the European and US markets. In order to support quality standards in Chinese production, to protect the environment, and to increase agricultural production incomes, Star Farm has set up a task force consisting of METRO Cash & Carry, Bayer CropScience, Rijk Zwaan, and Yara to implement a project in Jiaxing City of Zhejiang Province. The objective was to establish a transparent and sustainable sourcing process for the domestic market meeting the high-quality, safety, and traceability requirements of stakeholders along the value chain.





## Who is involved

**METRO Cash & Carry**, present in 29 countries with over 700 wholesale stores, is the leading international player in self-service wholesale: customer-focused, international, and innovative such as hotels, restaurants, caterers, and small retailers. The concept is oriented towards helping customers to successfully run their own business. METRO Cash & Carry is one of the sales divisions under METRO GROUP. In this project METRO shared with the producers the product specifications required to address the needs of the HORECA customers (hotels, restaurants, caterers) and agreed to buy products in accordance with their defined Quantity Plan and Quality Requirement. In November 2011, METRO GROUP and Bayer CropScience signed a global cooperation agreement with the main goal of further expanding joint Food Chain Partnership projects on a global scale to support the sustainable production of mainly fruit and vegetables but potentially also other food and non-food crops.

**Star Farm** is providing professional consulting services for nearly 1,000 agricultural producers and cooperatives. Established in late 2007 with the support of METRO GROUP and based in China, Star Farm is now expanding in Asia. By 2011, 816 agricultural companies have benefited from the consulting service, 12,000 staff have received training, and 25,000 farmers have taken part in the technical guidance. Star Farm is also managing a databank where the data of the field, processing, and packaging are collected and stored in order to create a transparent and traceable food safety platform. In June 2012 Star Farm and Bayer CropScience signed a Food Chain Partnership agreement, in order to raise the excellent collaboration over the past two years with good experiences in different crops in China to a global scale.

**Rijk Zwaan** is a vegetable seed breeding company and is a world leading specialist in creating high-quality vegetable varieties. With more than 25 subsidiaries all over the world they are an open, cooperative partner of the international fresh-produce chain with growers, traders, the food industry, and the retail trade. In this unique partnership project Rijk Zwaan provides technical service and crop advice and offers the right varieties for the METRO customer.

**Qingdao Yara Trading** supplied the necessary fertilizer for this project and guided the fertilizer solution implementation.

**Jubaowan Farm Base, Jiaxing**, is an agriculture technology company based in Jiaxing City of Zhejiang Province. The farm base mainly produces vegetables, using micro-drip irrigation equipment. In the project, the field activities were implemented and supervised by the Jubaowan team following the technical advice of the other partners.

**Bayer CropScience** is recognized in China both as a leading innovative crop protection manufacturer and as a partner in providing comprehensive crop solutions for high-quality and sustainable production through the development of customized spray calendars. Bayer CropScience also runs training programs for farmers on the safe and optimal use of crop protection products. Moreover, its experts pay regular visits to farmers and provide them with technical support and advice.

Standing from left to right:

Xiong Chuanwu, Senior Operation Manager of Star Farm  
Roger Tripathi, Regional Food Chain Manager AsiaPacific of Bayer CropScience  
Christine Brunel-Ligneau, Senior Key Relation Manager of Bayer CropScience  
Weiwei Wang, Technical Manager of Star Farm  
Tai-Choon Kuah, Head of Marketing of Bayer CropScience China

Sitting from left to right:

Hans-Peter Reust, Managing Director of Star Farm  
Robert Hulme, Country Head of Bayer CropScience China



## What we aim to achieve

The project started in 2010 with the objectives of implementing innovative agronomic solutions, improving agricultural practices compared to local standards, and fulfilling the market demand with high-quality, traceable, and sustainable produce. Moreover, the benefits for the farmers to establish a solid and efficient business have been in focus:

- Implementing innovative crop solutions with good seed varieties, an optimized crop protection spray calendar, and a good plant nutrition program
- Disseminating best practices to the farmers through training and ongoing technical advice
- Helping to generate better earnings for the farmers through reducing crop inputs, increasing marketable yields, and reducing crop losses
- Collecting all operating data in the Star Farm databank to make transparent to the customers the different phases of production and process. This also values the sustainable practices which have been implemented

## The sustainable solution

The crop selection was based on the market demand, evaluated by METRO Cash & Carry, the local climate of Jiaxing and planting habit, and available crop solutions from Bayer CropScience. Four crops were chosen for this project: tomato (Abellus), eggplant (Brigitte), pepper (Lamyu), and cucumber (Deltastar). The plot design was organized to compare local standard practices with Food Chain Partnership practices.

For each crop, Bayer CropScience provided an optimized crop protection spray calendar including innovative products and regular technical advice on the field to support the implementation of the program. Farm base team was also trained on safe use and IPM/ICM practices. All field activities were tracked in the field passport, a tool developed for farmers to record all inputs used in the crop production and the way they were applied.

Star Farm managed the whole process of guidance based on standard operation procedures, organized in-house training, and established an effective management system. Regularly, each technical partner ran on-site evaluations to check the progress achieved and applied corrective measures if something needed to be improved. Farm base team coaching on best practices was always the target of the partners involved.





## What we achieved

- For all crops, marketable yields were substantially higher with the innovative crop solutions plots compared to those employing local practices: for example, the marketable yield of eggplant is 66 % higher than the local practices
- The crop losses decreased considerably, for example by 38 % on average in tomato
- Farmer earnings improved dramatically, for example 137 % higher with eggplant than the local practices
- All residues checked were below the Maximum Residue Level (MRL)
- The crop quality achieved fully complied with the sourcing requirements of METRO Cash & Carry
- With all technical partners' involvement, the farming skill as well as food safety awareness of local farmers improved a lot, which is a good basis for long-term management

## Next steps

The **Bayer Sustainability Radar** will be implemented in farm bases to measure the sustainability performances of the farming practices and demonstrate the permanent improvement of the performance over the year. The Bayer Sustainability Radar is an excellent interface for all partners involved to steer their contribution towards sustainable agriculture.

The different partners involved will support further projects' implementation at farm base level. They will support the product platforms establishment which aims to optimize the sustainable sourcing of high-quality products directly from the farm bases to the market.



Chen Jianmin  
Managing Director  
of Jiaying Jubaowan  
Agriculture Science  
and Technology Co., Ltd.

food chain partnership



Consumers are becoming increasingly conscious of the need for healthy nutrition. Food Chain Partnerships help to supply consumers with high-quality fresh produce, which forms the basis of a healthy diet. But such partnerships can only succeed if they involve every player in the food chain – from the farmer and processor to the exporter or importer and retailer. Bayer CropScience has the global experience and cutting-edge expertise to create a successful partnership at every level.



**Bayer CropScience**

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