



Science For A Better Life

Collaboration for sustainable production of apples



food chain partnership



How it all started

As home to one fifth of the world's population and as a country enjoying strong economic growth, China's progress affects all sectors including agriculture and food industry. According to the latest census, 51.3 % of China's population lives in rural areas, which represents around 800 million inhabitants. Agriculture is of high importance not only because of the staple food production, but also because of the fruit and vegetable production to feed the people and meet the ever growing demand for higher quality food and better nutrition. Among all fruits, apple is apparently very important, as statistics show that China's apple production accounts for 1/3 of the worldwide production.

In order to understand the importance of this fruit in China and to create higher awareness of improving quality and safety, Bayer CropScience China decided to implement the first Food Chain Partnership project in Chinese apples. As a starting point Yan Tai city in Shan Dong province was selected. Shan Dong province is famous for high quality vegetable and fruit

production all over the world. Yan Tai city, one of the biggest and most highly advanced apple production sites, has over 2.4mio mu (1mu equivalent to 0.07ha) of apple orchards and 1.5mio apple growers, each with 1 or 2 mu orchard. Although farmers would like to take good care of their orchards, the way of applying agrochemicals sometimes has resulted in an unbalanced quality of the apples. In order to avoid potential safety issues, the different elements of the food chain are working together to develop sustainable production and manufacture of apples in Yan Tai.

Referring to food quality means keeping the growing, purchasing, storing, processing and transporting process under strict control. Bayer CropScience China has set itself the target to improve Chinese apple production and food safety to demonstrate that connecting the dots from farm to shelf provides good quality and safe apples to consumers.



Who is involved

AgValue BioTechnolgoy Co., Ltd provides consumers, in particular smaller farms, with safe and high quality agricultural products. The company has set up a service center in Yan Tai to better serve farmers. As part of their activities, they introduce international advanced products and services, technology for farmers and organize applications trainings of agrochemicals in a controlled and sustainable way.

Golden Wing Mau is one of China's top10 fresh fruit suppliers. Since its establishment, the company has been dedicated to provide fresh, high quality and safe fruits to consumers. Golden Wing Mau operates in more than 40 fruit sites and 15 fruit processing & storage centers in China's major fruit production areas. They own fruit delivery centers in 36 big cities so that they are able to provide fresh fruits to over 1000 superstores on a daily basis.

Walmart is the largest food retailer in the world which entered the Chinese market in 1996, with its first Walmart Supercenter and Sam's Club in Shenzhen. Today, Walmart operates over 380 stores in China, including Supercenters, Sam's Clubs, and Neighborhood Markets formats. They also serve customers locally with products and services they need, so that the company can contribute to their mission of "Saving People Money, So They Can Live Better". Walmart continues to be a leader in sustainability and food safety in China.

More than 1000 project **farmers** were involved in the Yan Tai Apple project in order to adapt best practices in the appropriate use of crop protection products for safe and high quality Fuji apples.

Bayer CropScience provides integrated and sustainable crop solutions that deliver added value to all the partners involved in the project. Bayer meets customers' needs not only through an innovative and well-balanced portfolio of crop protection products but also through comprehensive services such as training courses for farmers in the safe use of crop protection products as well as in application and spraying techniques.



What we aim to achieve

- Implement best agricultural practices according to international standards and certification systems in order to meet customer requirements in terms of food quality, safety and traceability.
- Develop and implement effective solutions to improve the yield and quality of apples, creating a win-win situation for all partners involved
- Improve the sustainable production of Fuji apples by optimizing the use of crop protection products as to reach the EU requirements of MRL for export purpose or to access Chinese supermarkets, especially Walmart
- Support contract growers of Golden Wing Mau to obtain GlobalGAP certification
- Provide contract farmers with technical support including yearly spraying program and regular field visits to ensure that pest and disease pressure are under control with adequate application of crop protection products and fertilizers in time.

The sustainable solution

Bayer CropScience China initiated this Food Chain Partnership project by identifying appropriate partners who would share the same vision of high quality and safe apple production by meeting international standards and the willingness to implement good agricultural practices. AgValue, responsible for controlling the whole application process of the project farmers and Golden Wing Mau, responsible for purchasing, processing and storing the produce before delivery to large supermarkets such as Walmart, were keen to join this Food Chain Partnership project. Especially Walmart has been a huge supporter of this project by promoting among their suppliers the importance of meeting international quality standards which are being requested by Chinese consumers.

The project team developed a spray program of “worst case” conditions, taking into consideration of potential pests and diseases affecting the apple quality. The program focused on the optimal solution for the crop, combining crop protection products and biological alternatives. It was a prerequisite that farmers who joined the program were committed to use only products recommended and confirmed by the project team. AgValue and its staff were absolutely dedicated in controlling the application dose in line with GlobalGAP standards, to ensure a high quality crop from the very beginning.

The 2nd phase of this Food Chain Partnership project was implemented by providing onsite training and random testings by Bayer CropScience technicians and AgValue staff. In order to improve farmers' use of crop protection products and safety awareness, Bayer CropScience China's product stewardship team provided technical, safety use and stewardship training to all the project farmers. Additionally a multi residue sample analysis was conducted by an independent certified laboratory. The objective of this analysis was to elaborate if the apples commercialized within the project are compliant with the legally binding maximum residue levels (MRL's) for crop protection products. The compliance with the MRL's is fundamental for the partners as well as for the farmers who want to steer their export business without any risk. Besides worker safety, environmental preservation is another factor that has been taken into consideration by the project team, as a waste package disposal pool at each orchard has been installed. By this farmers could deposit the waste for unified disposal and reduce the risk of agrochemicals leaking out of the used package and contaminating soil.



What we achieved

The partners' commitment and the very close relationship they have with their project farmers have made this apple project very successful. The innovative crop protection portfolio designed by Bayer CropScience China combined with profound expertise and the Food Chain Partnership approach have brought added value for each stakeholder. It was obvious from Walmart's statement that an overall improvement in the quality and productivity of apple production in the project area was achieved.

After 4 years operation of the apple project in Yan Tai, total production cost for farmers and farms were reduced between 20% and 30% while income increased 20%-30%. As there were less number of intermediaries, decrease in time of storage and transportation the margin grew and retailers – the supermarkets – received high quality fruits at lower price, enabling them to provide consumers with real green apples. Such a project has brought all parties closer together and improved the value of the whole chain and has been well accepted by all partners and the industry.

Next steps

To further expand the project, Bayer CropScience China has the objective to increase the number of project farmers and area from 500 farmers with 1,000mu to 1,500 farmers with the area of 3,000mu in 2013. As the Yan Tai apple project has been a true success, Bayer CropScience China would like to set up a demonstration model site to show visitors high quality and safe production of apples in a sustainable manner. Moreover, it is planned to expand collaboration with MNC retailers to other production bases of fruits, i.e. honey melon in Hainan, orange in Jiangxi and grape in Yunnan.



left:
Frank Lu, Key Relation Manager of
Bayer CropScience China

right:
Huang Hao, Senior Sourcing Manager of Golden
Wing Mau Enterprise Development 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

For more information contact:

Bayer CropScience (China) Co., Ltd.
Bayer Center
Key Relation Management
 No. 27 Dong San Huan North Road
 Chaoyang District, Beijing 100020
 PR China

Phone: +86 10 8550 5208
 Fax: +86 10 8550 5170
 Mobile: +86 1390 220 3805
 Email: frank.lu@bayer.com
 Internet: www.bayercropscience.com.cn

Bayer CropScience AG
Food Chain Management
 Alfred-Nobel-Str. 50
 40789 Monheim
 Germany

Phone: +49 2173 38 5834
 Fax: +49 2173 38 3383
 Email: foodchainpartnership@bayer.com
 Internet: www.foodchainpartnership.com



© 2013 by Bayer CropScience
 FCP-13-1574



Walmart (China) Investment Co., Ltd.
 2-5/F, Tower 2 and 1-12/F, Tower 3,
 SZITIC Square,
 69 Nonglin Road, Futian District, Shenzhen
 PR China

Phone: +86 755 21512288
 Fax: +86 755 21511076, 21511077
 Internet: www.wal-martchina.com

Golden Wing Mau Agricultural Produce Corporation
 Room 2002,C Tower,A Building of Fuyuan
 Commercial and Trade,
 Southeast in Xin an Chuang Ye Rd, Baoan
 District, Shenzhen
 PR China

Phone: +86 755 25928988, 25182988
 Fax: +86 755 25182258, 82264186
 Internet: www.wingmau.com

AgValue Bioscience Co., Ltd
 No. 3 Changsha Road,
 Penglai Economic Development Zone,
 Yantai, PR China

Phone: +86 535 3351506
 Email: lamsja@hotmail.com