



How it all started

Okra is an economically important vegetable crop grown in tropical and sub-tropical areas of the world such as India, Turkey, Iran, Western Africa and the Southern United States. India is the world's leading okra producer with 4.5 million metric tons a year (70% of world production) on more than 430,000 hectares of land. Orissa, West Bengal, Bihar, Gujarat, Maharashtra, Andhra Pradesh, Haryana, Uttar Pradesh, Madhya Pradesh and Karnataka are the major states producing okra. It grows in two main seasons: first planting in December to January and harvest between March and May. The second planting season is in June to July and harvest between August and October.

Farmers are challenged to produce okra of uniform size and good quality. As land holdings are very small, the transportation of okra to the market place is often complex. For farmers it can also be difficult to use proper packing material to keep the okra in good, healthy condition. Price volatility is also a challenge as the prices for okra fluctuate significantly during the season.

What we aimed to achieve

The aim was to develop and implement effective production solutions to improve the yield and quality of okra, manage residue levels, and create a win-win situation for all the partners involved by implementing good agricultural practices and adhering to the principles of sustainable agriculture.



Who is involved

About 200 progressive farmers joined this programme in Phaltan/Maharashtra, in the western part of the country.

Kay Bee Exports is a leading company, exporting vegetables such as okra and chilli as well as fruits like pomegranate and mango to the European market. This company supplies to well-known supermarkets in the UK. Kay Bee Farms, the company's farming division, is certified to GLOBALGAP and Tesco Nurture standards. As a leading vegetable exporter, it has received the prestigious APEDA (Agricultural and Processed Food Products Export Development Authority) award for five years in succession. Supplying okra to its customers' specifications is the key driver of its business.

Bayer CropScience India offers integrated and sustainable crop solutions from seed to harvest that add value to all the partners involved in this project. Bayer meets customers' needs through an innovative and well-balanced portfolio of crop protection products and services.

Nunhems, a business of Bayer CropScience and global specialist in vegetable genetics, contributes seeds, growing concepts, and its international expertise in professional horticultural production to this Food Chain Partnership project.



The confidence-building solution

Kay Bee Exports' CEO Kaushal Khakhar first met the Bayer CropScience Food Chain Management team at Asia Fruit Logistica in Hong Kong in 2009. After intensive discussions it was concluded that a Food Chain Partnership would greatly benefit farmers as they were facing difficulties in producing okra of the quality required in terms of shape, size and colour. The Food Chain Partnership agreement between Bayer CropScience and Kay Bee was signed the same year.

Following the Food Chain Partnership principles it was agreed to support farmers by offering and guiding them with seed-to-harvest solutions. Analysing the export requirements and specifications, Nunhems' experts suggested the use of the okra variety Sonal. Its lush green colour and uniform size make it a perfect fit for an export-oriented production programme. Over the years, Kay Bee Exports has developed expertise in okra production practices and guided the farmers throughout the crop season in nutrient management, irrigation

management and crop care.

Bayer CropScience supported Kay Bee Exports in developing the plant protection programme. The major issues were shoot and fruit borer as well as mites and jassids. The pest and disease infestation were managed with the help of innovative Bayer CropScience products such as Fame®, Oberon® and Admire®. In order to raise efficiency and effectiveness of this partnership, Kay Bee Exports decided to expand the spraying programme to all the contract farmers. The spraying operations at a farm level were organised and supervised by Kay Bee Exports.

Training courses for farmers were an integral part of the whole programme, aiming to create awareness of optimal seed varieties, adequate agronomic practices, nutrient management and quality improvement through disease and pest management as well as the safe use and handling of crop protection products. The Bayer CropScience team provided technical support to Kay Bee farmers with Bayer CropScience experts regularly visiting the Kay Bee farmers to monitor and guide them through the pest and disease management programme.

The overall programme considered the principles of GLOBAL-GAP and good agricultural principles with a focus on Integrated Pest Management and worker safety. Moreover, a passport approach was implemented to ensure traceability of the produce from the farm onwards. This passport is a tool developed by Bayer CropScience India for record management and documentation on farms. Last but not least, the farmers were advised and trained by Kay Bee Exports on harvesting, grading and packing the okra to comply with the requirements of export customers.







What we achieved

The project's success benefited from Nunhems' perfectly fitting, export-oriented okra variety Sonal, Kay Bee Exports' production expertise and their very close relations to their contract growers. Bayer CropScience delivered added value to each stakeholder through its innovative product portfolio, sustainable agricultural expertise and the global Food Chain Partnership concept. Thanks to this integrated approach it was possible to improve the quality of the okras produced.

Guidance throughout the okra growing season resulted in increased yields of 15–20%, improved quality and higher net incomes for the farmers. Farmers were paid on average a price that was 20–25% higher than the market price as a quality incentive. Kay Bee Exports has been able to produce and supply more high-quality okra and strengthen their relations to the farmers as both parties benefited from this partnership. Bayer CropScience's crop protection products and services complemented by Nunhems' variety and services helped the farmers to protect their okra during the growing season and produce more quantity and quality. And the ultimate beneficiaries are consumers who can rely on a reliable supply of good-quality okra.

Next steps

Considering the continuously changing market needs, Nunhems has already added an improved new hybrid named Shakti to this Food Chain Partnership project. With its advantages of high disease resistance against the YVMV (yellow vein mosaic virus), longer shelf life and even higher crop quality, it is adding tremendous value to the project.

In view of the benefits received by each stakeholder, Bayer CropScience and Kay Bee Exports are planning to intensify their collaboration in future. The pilot project started in 2009 with around 45 acres (approx. 18 hectare) and the focus was just on okra. It expanded in 2010 and by 2013 more than 1,000 acres (approx. 405 hectare) are planned. Besides okra, the Food Chain Partnership's project is planned to be expanded to hot pepper (chilli), gourds and fruits like pomegranate and mango.



left: Yogesh Mohite Senior Manager – Food Chain and Technical Support of Bayer CropScience India

right: Prakash Khakhar Chairman of Kay Bee Exports

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.





The taste of freshnes

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