



Working together for sustainable apple production



The German Apple Project



Bayer CropScience

How it all started

As in many other countries, the quality expectations of German food retailers in relation to fruit and vegetables are very high. At the same time, Germany enjoys relatively low consumer prices for food by European standards. Thus, German food producers are faced with overcoming a sizeable challenge, namely producing healthy, good-quality fruit economically while also protecting the environment.

Due to their large set-up, apple plantations in Eastern Germany enjoy a competitive advantage when it comes to producing large volumes of apples of a consistent high quality. Success, however, also requires a vast amount of expertise, state-of-the-art technology and a great deal of expertise. As valuable crops need to be protected from pests, modern growers ensure they use selective pesticides with minimal impact on beneficial organisms. These natural enemies of pests help to keep the crops healthy so that the amount of chemical pesticides required can be kept to a minimum.

Bayer CropScience is a company that has adapted to these requirements, first and foremost developing pesticides that offer crops excellent protection from various pests while minimising any impact on the environment.

What we aim to achieve

The aim of this joint project is to produce top-quality apples at a highly modern fruit-growing enterprise located near Dresden by optimising the application of crop protection products, thereby meeting customers' requirements, and taking into consideration consumer expectations for environmentally friendly and sustainable fruit production.

The main priority is to provide excellent protection of the apples from diseases and pests, in order to obtain the high quality required by the fruit trading organisations and avoid crop losses whilst leaving the beneficial organisms of the orchards unharmed.

In this regard the definition of quality goes beyond visual quality, freshness and flavour but also includes adhering to stringent legal pesticide residue requirements and regard for the environment.



From left to right:
Horst Lorenz, Sales Representative (Bayer CropScience)
Steffen Schneider, General Manager Obstbau Ebenheit
Steffi Rentsch, Food Chain Manager (Bayer CropScience)
Dr. Olaf Krieghoff, Technical Advisor Erzeugerorganisation Dresdener Obst
Elke Schrader, Development Manager (Bayer CropScience)

Who is involved

Obstbau Ebenheit Griesbach/Wedler is a modern fruit production company located in the Elbe Valley near Dresden. The project was carried out on their premises. Together with his team, Steffen Schneider, the company's manager and qualified horticulturalist, manages approximately 230 hectares of orchards, primarily growing Gala, Pinova and Jonagold apples. Steffen is endeavouring to bring the company, which has existed since 2001, into line with the very latest business practices. In addition to the efficiency of his business, however, he also sets great store by environmental protection, and has therefore run the business in accordance with the principles of integrated pest management ever since its inception.

Erzeugerorganisation Dresdener Obst is a producer organisation comprising approximately 20 fruit producers located in Saxony's Burgenland region, the Elbe Valley and the Oberlausitzer Bergland region. Together they produce some 75,000 tonnes of delicious fruit (primarily apples) a year. The regions' natural conditions, which include highly fertile soil, plenty of sun and an even distribution of rain, contribute to the high quality and fine flavour of the crops grown there. In recent years, numerous cultivated areas have been created in the most suitable locations for modern and popular apple varieties, all in keeping with the principles of integrated production. Erzeugerorganisation Dresdener Obst is currently the only producer organisation in Saxony to be certified in accordance with Council Regulation (EC) 2200/96.

VEOS Vertriebsgesellschaft für Obst Dresden is a marketing organisation that works closely with fruit producers to facilitate the sale of their produce to the customers.

The affiliated companies bring together the experience handed down through generations with the very latest scientific findings, resulting in optimal handling of the apples. In this regard the managing directors of VEOS consider integrated production to be a key factor for success. Since this requires a great deal of expertise and experience, VEOS and the Erzeugerorganisation Dresdener Obst offer their members comprehensive advice all year round. This advice is provided by Dr Olaf Krieghoff, a qualified horticulturalist who helps the fruit farmers to identify pests in the early stages and tells them how such pests can be controlled in the most effective yet environmentally friendly way. VEOS, or more specifically the producer organisations and their members, are certified according to the GLOBALGAP, IFS, BRC and QS international standards.

Bayer CropScience Deutschland is the German marketing organisation of Bayer CropScience, one of the world's leading pesticide manufacturers. This market leadership is based on innovative products that are the result of many years of intensive research, all carried out with a view to helping agriculturalists and fruit farmers to achieve sustainability in the production of crops. Bayer CropScience works closely with fruit and vegetable producers and traders in food chain partnership projects to develop optimised crop protection solutions for the benefit of every partner involved.



The comprehensive solution

An integrated apple cultivation system entails a wide range of different requirements, from choosing the most robust varieties to special cultivation measures, tree maintenance and targeted use of crop protection products. These are only used if all other non-chemical options have already been exhausted and if the pests are so prevalent that their numbers can no longer be regulated by sole use of their natural enemies, such as predatory mites, ladybirds, common lacewings and spiders. Collectively known as beneficial organisms, they have an important role to play in integrated cultivation systems.

The principles of such a system dictate that pesticides should only be used in conjunction with the monitoring of pest populations. Once populations exceed any intervention threshold, then appropriate control measures can be employed.

As part of the joint project, an optimised crop protection programme was developed in line with the the principles of Integrated Crop Management (ICM) and Integrated Pest Management (IPM) including control strategies also against especially resilient pests such as the woolly apple aphid.

Aphids, and in particular the woolly apple aphid, can cause severe damage to apple crops as they suck on the young shoots and leaves. This impedes the development of the fruit and results in stunted apples. In the worst case parts of the plants may die off completely. If these pests become too prevalent, they can no longer be controlled by their natural enemies and effective pesticides are required to complement the beneficial organisms.

The crop protection programme suggested by Bayer Crop-Science comprised highly efficient products and was designed to control the most serious diseases and pests such as apple scab, mildew, aphids and the codling moth. In addition, an innovative product known as Movento®, featuring the active ingredient spirotetramat, was used to combat the woolly apple aphid. This new product has the unique feature of moving both up and down in the plants circulatory system, a quality that has been termed “two-way systemicity”. Alternative protection methods, e.g. the use of viruses to keep the number of codling moths down, complemented the integrated solution.

The marketing organisation’s expertise in integrated production requirements was indispensable for adapting the programme to local requirements.

The use of Movento® in apples had been approved from May 1st to June 25th in 2010 (§ 11 Abs. 2 PflSchG). The active ingredient’s registration is targeted (as per § 15).



left:
Horst Lorenz

right:
Dr Olaf Krieghoff



What we have achieved

Some promising results have already been achieved in the first year of this joint project. The Bayer CropScience and VEOS experts jointly examined the efficiency of the project's crop protection strategy and looked especially closely at the effects this had on the beneficial organisms present.

They discovered that the apple trees were healthy and producing good-quality apples. This meant that the strategy was a success and all the diseases and pests were being sufficiently controlled. Furthermore, there were more beneficial insects to be found in the project fruit trees than in trees treated with a more conventional programme. This is due in part to the excellent selectivity of Movento® with respect to beneficial organisms. For example, there were noticeably higher numbers of spiders and aphid predators living in the trees.

During the project, the apples were tested for pesticide residues. The findings showed that, thanks to the optimised control strategy implemented, the crops were comfortably within the stringent legal limits in this respect. Moreover, in this specific case the apples also complied with the requirements of various food retailers.

The next steps

The positive results achieved in the first year alone have motivated all the project partners to continue with this joint venture. The integrated crop protection programme will be further optimised by the addition of further innovative products from Bayer CropScience. Fruit quality will always remain an essential requirement, but environmental considerations will continue to be demanded by consumers to ensure that fruit production has a sustainable future.



left:
Horst Lorenz,
Vertriebsberater
Bayer CropScience
Deutschland GmbH

right:
Steffen Schneider,
Betriebsleiter
Obstbau Ebenheit



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.



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