

Xarelto on the way to worldwide registration



The novel anticoagulant Xarelto® (rivaroxaban) can already be used for the prevention of venous thromboembolism in adults following elective hip or knee replacement surgery in more than 20 countries, including the countries in the European Union, China, Canada, Mexico, Australia and Singapore. Further applications for regulatory approval are currently being reviewed by the responsible authorities worldwide, including in the United States. Studies in this indication have shown that rivaroxaban is more effective than the current standard therapy. This drug is currently the most intensively investigated oral Factor xa inhibitor in clinical development. More than 60,000 patients in total are scheduled to take part in this trial program to investigate the substance's potential in the prevention and treatment of a broad spectrum of acute and chronic thromboembolic disorders. The oral administration form of Xarelto® makes it easier for the patient to take the drug and leads to treatment adherence. Experts estimate the product's sales potential at more than €2 billion per year.

Hopeful candidate: Bayer chemists Dr. Susanne Roehrig and Dr. Alexander Straub use a computer simulation to examine the molecular contours of rivaroxaban.

New pilot plant for carbon nanotubes

Bayer MaterialScience started work on the construction of a new pilot facility for carbon nanotubes (CNTs) in January 2009. The new plant in Leverkusen will have a capacity of 200 metric tons per year, making it one of the largest of its kind in the world. CNTs marketed by Bayer MaterialScience under the trade name Baytubes® are already being used to produce materials that are extremely strong and resilient, but at the same time very light in weight. They help to make rotor blades for wind turbines more energy-efficient, transport vessels lighter and sporting equipment stronger. Baytubes® are many times stronger than steel,

but have only a fraction of its weight.



Innovation alliance: Bayer Management Board member Dr. Wolfgang Plischke (left) and Secretary of State Thomas Rachel of the German Federal Ministry for Education and Research pictured with a carbon nanotube model at the official construction launch of the plant

Renewed inclusion in important sustainability indices

Bayer appeared for the tenth time in a row in 2008/2009 in the Dow Jones Sustainability Index World (DJSI World). The world's most important sustainability index is based on a Corporate Sustainability Assessment by the well-known Swiss rating agency SAM Research. In September 2008, Bayer was once again listed in the Carbon Disclosure Leadership Index, the first global climate protection index. Through this inclusion, the investor group of the Carbon Disclosure Project (CDP) in New York has highlighted that Bayer is one of the leading international companies in the field of climate protection.

Explosion in Institute

An explosion and fire occurred at a Bayer CropScience plant in Institute, West Virginia on August 28, 2008. Two employees died as a result of the incident. Air samples taken at the site boundaries did not reveal any elevated concentrations of hazardous substances in the environment (see also page 72).

Innovation award for photovoltaic module

Modern solar technology is in demand all over the world. At the “Symposium on Photovoltaic Solar Energy” held in Bad Staffelstein, Germany, in March 2009, the new Solon Black 160/05 in-roof module, a joint project between the Berlin-based company Solon SE and Bayer MaterialScience, was awarded a prestigious innovation award. The novel feature of this solar module is an innovative frame with an integrated mounting system based on the polyurethane foam Bayflex®, which replaces the conventional installation system. This design makes an expensive substructure unnecessary. A further advantage is the wide range of possible design options. In contrast to the conspicuous box-like structure of solar systems with aluminum frames, a network of several solar modules with polyurethane frames gives the appearance of a continuous surface. BaySystems is the umbrella brand for the global polyurethane systems business of Bayer MaterialScience and is built on close cooperation with customers – an approach that has yet again proven successful with this innovation. The project is the latest example of Bayer MaterialScience’s outstanding commitment to climate protection.

Bayer endows Chair of Sustainable Development

With an endowment of US\$1 million, Bayer CropScience enabled a Chair of Sustainable Development to be established at the North Carolina State University (NCSU), United States, in January 2009. With this collaboration, Bayer has found a partner in its research efforts to find solutions to the complex problems that issues like global climate change, population growth, and food and water shortages present.

New pipeline for the CO network

Bayer MaterialScience (BMS) is extending the existing integrated carbon monoxide system between Dormagen and Leverkusen by constructing a new CO supply pipeline between the chemical facilities at Dormagen and Uerdingen. The North Rhine-Westphalia (NRW) state parliament established repeatedly that the project serves the public good. In addition, in April 2009, BMS and the state of NRW concluded an agreement safeguarding the benefit of the public good of the pipeline. In October 2008, the Düsseldorf district authorities issued a plan supplement order in addition to the original plan approval order. The commissioning of the pipeline is also dependent on legal proceedings, since nearby residents are worried about health risks. Bayer is very much aware of its responsibility to its neighbors and the region. The safety of the pipeline takes top priority and has been attested in several expert reports. Bayer is keen to maintain close contact with the local community and provides comprehensive information about the project, for example in a brochure entitled “Your Questions Answered,” which has been available since October 2008.

Bayer receives BDI Environmental Award

Bayer has driven forward the development and application of the energy-saving oxygen depolarized cathode technology for chlorine production as part of the Bayer Climate Program. As a result, in June 2008, Bayer was presented with two prizes – the Environmental Award of the Federation of German Industries (BDI) in the category “Environmentally Friendly Technologies” and a European Business Award for the Environment. Oxygen depolarized cathode technology reduces electricity consumption and levels of CO₂ emissions by 30 percent compared with conventional methods. Since 2003, Bayer has been using the technology at its Brunsbüttel site in Germany and since 2008 on a major industrial scale in a facility in Shanghai, China. Among other applications, chlorine is used to produce high-grade polyurethanes. The innovative technology makes targeted use of oxygen in the electrolysis of hydrochloric acid to reduce the electrical energy required.

Potential savings: Bayer employee Jörg Bätzer checks the oxygen inlet pipes of an oxygen depolarized cathode.



Rice activities in the Asia/Pacific region strengthened

In November 2008, Bayer CropScience opened a rice development center in Thailand in order to make possible a second green revolution in Asia. The center will considerably extend the company's activities for breeding and marketing commercial rice seed in the region. Some 90 percent of the global rice harvest is produced in Asia and also consumed there. The introduction of high-quality seed tailor-made for the local weather and growing conditions will help to safeguard the global food supply in the 21st century. To this end, Bayer CropScience is concentrating on high-yield varieties like Arize®. The scientists at the new facility will develop hybrid rice with innovative traits with crop-growing relevance, such as resistance to certain diseases or pests. Bayer CropScience previously opened a rice research laboratory in Singapore in June 2008.



Safeguarding food: According to the latest estimates, rice production will have to increase by up to 40 percent by 2030 to meet the demand of a rapidly growing population.

Influence on pharmaceutical prices

In May 2008, the German Federal Cartel Office (Bundeskartellamt) imposed a €10.34 million fine on Bayer Vital, the German marketing subsidiary of Bayer HealthCare. The Office believes that it has evidence to show that employees of the company influenced the retail prices of non-prescription (OTC) drug products in pharmacies in violation of antitrust law. Bayer Vital does not share the legal position of the Bundeskartellamt. However, in order to avoid a protracted legal conflict and the associated negative repercussions on its business activities, Bayer Vital GmbH decided to accept the fine. In addition, Bayer Vital has reviewed the marketing measures for its OTC medicines in pharmacies in their entirety and made changes where this was appropriate and necessary.

New research center in China

Bayer HealthCare and Tsinghua University in Beijing, China entered into a comprehensive strategic partnership in March 2009. They plan to establish a joint research center: the Bayer-Tsinghua (Institute of Biomedicine) Research Center of Innovative Drug Discovery. The research center is part of an initiative of Bayer HealthCare's new Research and Development Center in Beijing, in which scientists from the Global Drug Discovery Innovation Center will drive forward innovative approaches for the discovery of new therapies in the context of research collaborations. Bayer HealthCare plans to invest some €100 million in this project in the coming five years.

Bayer sponsors first Chair for Apparatus Engineering at Dortmund's Technical University

In February 2009, Bayer sponsored the first Chair for Apparatus Engineering at the Technical University (TU) of Dortmund, Germany. The professorship will be financed by Bayer with a donation of €750,000 for the first five years, after which its costs will be borne by the TU. Apparatus engineering will in future play an even more important role in the planning and construction of chemical production plants. Modularized facilities, a main topic for the new Chair, are designed to provide greater flexibility and economic efficiency. Another area of focus is micro-process engineering, which is used to help with the building of ultra-small production plants.

Environmentally conscious employer

In April 2009 Bayer Inc. was selected as one of Canada's 30 Greenest Employers for 2009 by Maclean's Magazine. Together with Toronto-based publisher Mediagroup, Canada Inc., the magazine assessed companies with respect to their level of environmental awareness. The jury assessed not only specific climate initiatives and programs, but also the extent to which the workforce was involved in these activities.

Bayer Inc. was praised in particular for its Green Matters initiative, one of the main projects of which is "Operation Zero Waste." This has the goal of diverting 80 percent of Bayer head office waste from landfills by 2010.

Cooperation for sustainably safeguarding the food supply

In March 2009, Bayer CropScience and the French National Center for Scientific Research (CNRS) in Paris renewed a framework agreement signed in 2005. The new joint research projects pursued under this agreement are intended to contribute to ensuring a sustainable food supply for a growing world population against the background of climate change. Over the next four years, Bayer CropScience will invest some €4 million in joint research projects. This funding will support basic research projects at a number of CNRS institutions throughout France. One of them is the "mixed laboratory" with a team of about 20 researchers at the La Dargoire research campus operated by Bayer CropScience in Lyon. A multidisciplinary approach will be adopted to improve the stress tolerance of plants and find ways to increase yields – areas in which several CNRS research teams are among the global leaders.



Signing the agreement (left to right): Professor Friedrich Berschauer, CEO of Bayer CropScience, Arnold Migus, General Director of the CNRS, and Dr. Alexander Klausener, Head of Research at Bayer CropScience, put the seal on the agreement.

Young Environmental Envoys visit Bayer

At the beginning of November 2008, 50 Young Environmental Envoys from 18 countries on four continents spent a week in Leverkusen, Germany, to find out about developments in and prospects for environmental protection and sustainable development. The young people on the field trip were selected from around 1,200 participants on the basis of the environmental projects they presented in special competitions organized by Bayer in their home countries. Their schedule included tours of various Bayer sites, discussions with sustainability experts on site and visits to communal institutions and other companies. The Young Environmental Envoy Program is one of the key elements in an alliance between Bayer and the United Nations Environment Programme (UNEP) for youth and the environment. When the Environmental Envoys return home, they are able to raise awareness of sustainable development by passing on the impressions, experience and insights they have gained. Many former participants in this Bayer initiative now have jobs where they play a key role in environmental protection in their home countries.



Excursion: Young Environmental Envoys from various countries learn at Bayer what is important for conserving nature. Here, Emah Madegwa and Fernando Zetrialdi (from right) are shown together with Dr. Annemarie Simons in Bayer CropScience's student lab in Monheim. The Envoys can spread the knowledge they have gained during the trip on their return home.

Cooperation in the battle against cancer



In November 2008, the German Cancer Research Center and Bayer HealthCare formed a strategic research alliance scheduled to run for an initial period of two years. The collaboration is aimed at enabling more rapid exploitation of research findings for the development of new cancer drugs and enhancing the evaluation of innovative therapeutic approaches for tumor diseases. To this end, the partners will each invest €1.75 million in joint cancer research through 2010. The cooperation will focus on joint application-oriented research into molecules, mechanisms and models that could provide the impetus for the development of new anticancer therapies.

Innovative collaboration: Bayer employee Gary Davis contributes to the cooperation by, for example, investigating potential biomarker proteins in the mass spectrometer.

Awards for company

Bayer is recognized as Brazil's best chemical and pharmaceutical company. This was the result of a survey conducted in November 2008 by *Época Negócios Magazine*, one of the country's leading business news magazines. Respondents were asked to rank over 200 local and international companies on several criteria, including trust, quality, social and environmental responsibility, and innovation. The Group is also a top performer when it comes to online recruitment. Bayer's career website for its German operations is rated one of the best in Europe. Swedish consultants Potentialpark awarded Bayer first place among German companies in its "Top Employer Web Benchmark 2009." Bayer's career website is now permitted to display the logo "Top Career Website 2009."

Marketing authorization suspended

In spring 2008, incorrectly dressed corn seed led to large-scale bee mortality in the Oberrhein region of Germany. As the seed treatment product Poncho® had been used to protect the crop against the dreaded western corn rootworm, the German Federal Office for Consumer Protection and Food Safety (Bundesamt für Lebensmittelsicherheit und Verbraucherschutz, BVL) suspended the marketing authorization for this corn seed dressing in May 2008. Bayer CropScience has since submitted documentation verifying the safety of the product when used correctly. Bayer CropScience also agreed to pay a settlement of €2 million to support the beekeepers affected by the population losses. Further information on the topic of bee safety can be found on page 101.

UNEP-Bayer painting competition



The United Nations Environment Programme (UNEP), which Bayer teams up with to organize the annual International Children's Painting Competition on the Environment, auctioned selected pictures in New York in October 2008, raising a total of US\$ 21,000. The proceeds will be donated to an aid fund administered for children in a position of need following climate-related disasters. UNEP and Bayer arrange a children's painting competition every year on a major environmental theme. More than 15,000 children from 90 countries took part in 2008. The exhibition of paintings from last year's competition on the subject of climate change has also been shown in Italy, Poland, Hungary, Germany and Malta.

Handing over the check: UNEP Executive Director Achim Steiner (right) with the young artists and guests in New York

Settlement with the U.S. Department of Justice

Investigations by the U.S. Department of Justice into certain marketing programs conducted by Bayer HealthCare's Diabetes Care Division between 1998 and 2003 ended with a settlement in November 2008. Bayer HealthCare agreed to make a one-off payment of US\$97.5 million and the case was closed to avoid further time-consuming and expensive disputes and the associated legal uncertainties. The settlement does not, however, amount to an admission of guilt on the part of Bayer HealthCare. The company has cooperated in full with the authorities since the start of the investigation in 2003.

New project to support women: start of the Women's Leadership Initiative

In January 2009, Bayer HealthCare (BHC) launched the Women's Leadership Initiative (WLI). The initiative is aimed at further strengthening diversity in the workforce. The event was attended by 120 female Bayer HealthCare managers working in the United States. In his presentation, Arthur J. Higgins, Chairman of the BHC Executive Committee, said, "We have a lot of diversity to offer in our portfolio, our products and from a geographical point of view, but when it comes to our employees there is still a need for action. The Women's Leadership Initiative is an important step towards fully utilizing our workforce's potential." With the WLI, BHC is pursuing two objectives at the same time: to be perceived as an attractive company by women in top management positions and also to further develop female managers.



Woman power: The participants at the conference discussed ways of increasing the number of women in managerial positions at Bayer HealthCare.

Support for the earthquake region of Sichuan



New hope: The donations made by Bayer and its employees helped to provide rapid and sustainable aid, e.g. in the form of emergency accommodation and health care provision. Bayer employee Brenda Gong is one of more than 100 staff who are helping out in the earthquake zone.

In response to the devastating earthquake in Sichuan, China, in May 2008, the Bayer Cares Foundation provided the Sichuan Technology and Business College with 20 classrooms, 50 apartments and a mobile health center in the form of modern containers. Teams of experts from the three Bayer subgroups under the project management of Bayer Technology Services worked closely together on developing, constructing and delivering the containers. The total cost of the project, which amounted to €825,000, was borne by the Bayer Cares Foundation. This brings the total amount of aid donated by Bayer to the earthquake victims in China in the form of medicines and material and monetary donations to more than €2.2 million by the end of 2008. Providing rapid, unbureaucratic help for people affected by natural catastrophes is one of the main objectives of the Bayer Cares Foundation.