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News Release

Global Herbicide Resistance Challenge in Denver, Colorado (USA):

Adrian Percy: "We invest in finding the next generation of weed management systems"

- Bayer is boosting its activities in herbicide research
- Integrated Weed Management program promotes sustainable weed control
- Working cross-functionally to tackle global weed resistance is key

Monheim/Denver, May 23, 2017 – Bayer is committed to helping farmers worldwide keep weeds off their fields and fight weed resistance. That is what company representatives said at the Global Herbicide Resistance Challenge in Denver, Colorado from May 14-18, 2017, where over 300 experts met to discuss the global issue of herbicide resistance.

Summing up the issue of weed resistance as "serious, but solvable," Adrian Percy, head of Research & Development at the Crop Science division of Bayer, highlighted Bayer's commitment to innovation, partnerships and education as a comprehensive approach to helping farmers manage weeds. "We have a responsibility to protect the tools farmers have now as we invest in finding the next generation of weed management systems."

To do so, Bayer has joined forces with partners worldwide. In a five-year [agreement with the Grains Research and Development Corporation](#), an Australian grain growers association, Bayer dedicates its research to finding new herbicidal compounds and testing them on Australian resistant weeds. Initial testing and profiling take place in Bayer's weed research facilities and greenhouses in Frankfurt/Main, Germany and field evaluation then happens at dedicated facilities in Australia. Find out more about this Herbicide Innovation Partnership: <http://www.press.bayer.com/baynews/baynews.nsf/id/Bayer-Grains-Research-Development-Corporation-celebrate-launch-Herbicide-Innovation-Partnership>.

Another key component in Bayer's research for new herbicides is the [partnership with Targenomix](#), a spin-off from the Max-Planck Institute, which uses a systems biology approach to discover novel herbicidal modes of action. For this, scientists isolate and analyze different biomolecules from plants that have been treated with a herbicidal molecule of yet unknown mode of action from Bayer's labs. Using bioinformatics and mathematical models and analyzing the plant's biomolecular profile, they can deduce the potential site of action. This allows identifying substances that work with new modes of action.

Farmers shouldn't rely on chemical weed control only

Besides looking for new herbicides, Bayer has been promoting its [Integrated Weed Management initiative](#), a holistic approach to tackling weeds with a combination of physical, cultural, biological and chemical measures that are cost effective and sustainable. "Following an integrated weed management plan is essential. It helps to sustain the efficacy of the herbicide and delay resistance building, which fosters farmers' productivity," said Christine Brunel-Ligneau, who is leading the Bayer initiative.

To support farmers in helping identify resistance issues, Bayer set up its [Weed Resistance Competence Center](#) in Frankfurt/Main, Germany, an institute that is unparalleled in the industry. Scientists there study weed resistance mechanisms and its evolution in fields; test and develop new concepts and tools to manage resistant weeds; and communicate and share their knowledge and solutions. Get more information: <http://www.iwm.bayer.com/> and <http://www.iwm.bayer.com/competencies/wrcc>.

"Weed resistance is a massive problem that's threatening the world's food supply," said Stephen Powles, director of the [Australian Herbicide Resistance Initiative](#), during a panel discussion organized by Bayer. "But it is also a manageable problem as farmers worldwide can prove. The key lies in diversifying agronomic practices."

Minimal soil disturbance, permanent soil cover, and crop rotations – this is what Chad Watts, executive director at [Conservation Technology Information Center](#) (CTIC), exemplified as a solution to effective and sustainable weed management. "Controlling weeds, especially in this era of herbicide resistance, needs to be a multi-stage process. In the US, growers have a bevy of programs from state and national agencies to help them expand conservation efforts in a way that enhances their long-term environmental and

economic sustainability,” he concluded. Based in West Lafayette, Indiana, CTIC is a national public-private partnership which provides information on productive and profitable farming systems that conserve and enhance soil, water, air and wildlife resources.

During the panel discussion, Bill Chism from the U.S. Environmental Protection Agency’s Office of Pesticide Programs added, “The Agency thinks our primary role is to develop a framework for communication, education and resistance plans.”

Everyone agreed that communication and education on the benefits of adopting integrated weed management practices is key in fighting weed resistance and protecting the world’s food supplies. “Having the private and public sector working on this together is a step in the right direction,” concluded Stephen Powles.

Bayer: Science For A Better Life

Bayer is a global enterprise with core competencies in the Life Science fields of health care and agriculture. Its products and services are designed to benefit people and improve their quality of life. At the same time, the Group aims to create value through innovation, growth and high earning power. Bayer is committed to the principles of sustainable development and to its social and ethical responsibilities as a corporate citizen. In fiscal 2016, the Group employed around 115,200 people and had sales of EUR 46.8 billion. Capital expenditures amounted to EUR 2.6 billion, R&D expenses to EUR 4.7 billion. These figures include those for the high-tech polymers business, which was floated on the stock market as an independent company named Covestro on October 6, 2015. For more information, go to www.bayer.com.

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