



Bayer AG
Communications,
Government Relations &
Corporate Brand
51368 Leverkusen
Germany
www.news.bayer.com

Bayer's Integrated Weed Management Program – Weed Control 2.0

How weeds impact crop productivity

- Weeds compete with crops for space, nutrients, water, and light, and they outperform the crops if nothing is done to control them.
- Weeds are responsible for the biggest yield loss. There are 30,000 weed species in agriculture worldwide affecting crops. About 230 of them are responsible for 90 percent of yield losses (source: Crop Life International).
- Weeds are constantly evolving to adapt to new situations: Whatever the farmer is doing to remove them – hoeing, hand weeding, chemical control – the weeds will evolve and adapt for expansion.
- Overreliance on the same herbicide mode of action increases selection pressure for resistant weeds. Resistant weeds are becoming more and more difficult to control and challenging farmers' standard practices.

What are the options for farmers?

- Key to sustain weed control and farm productivity is the combination of chemical and non-chemical tools in an Integrated Weed Management (IWM) Program. This holistic approach provides the crop with an advantage over the weeds.
- IWM involves diversity in the use of herbicide modes of action, diversity in non-chemical weed control measures, such as soil management, post-harvest weed seed control, and others, as well as diversity of cultural practices such as crop rotations.
- By implementing these cultural and agronomic tactics, the weed pressure in the field is reduced and weed populations are kept at a manageable level. This makes it easier for herbicides to do their job and reduces the selection pressure for resistance.
- IWM contributes to sustainable agriculture. It helps to sustain cropping systems and reduces the environmental impact of certain weed management practices.

How can Bayer support farmers?

Bayer's IWM Program consists of three elements:

1. **Integrated Weed Control Solutions**, including high-quality seeds, traits, innovative crop protection products, and tailored services, such as agronomic support, weed identification systems, field demonstration trials, diagnostics, prediction tools, and documentation aids.

In the future, weed management will more and more be supported by digital solutions, which range from weed identification apps to weed and resistance mapping.

2. Best Management Practices

Bayer is strongly engaging with farmers, consultants, and distributors to share knowledge on weed control:

- Bayer is very active in numerous countries to promote Best Management Practices through local initiatives such as “Diversity can’t wait” (Australia), “Respect the Rotation” (USA) or “Vielfalt ist Zukunft” (Germany). These initiatives are based on Bayer guidelines and state-of-the-art stewardship measures to protect human health, preserve the environment, and delay weed resistance.
- Bayer is engaging with stakeholders along the value chain about IWM and sustainable weed control on Social Media. Under hashtags such as #weedcontrol or #IntegratedWeedMngt, recent discoveries, educational tools, and country initiatives are openly shared.

3. Science and Partnerships

Bayer is constantly striving for innovation – alone or in partnerships – and has been heavily investing in Research & Development:

- Bayer has a long history of success in discovering herbicides and safeners.
- Bayer’s Weed Resistance Competence Center in Frankfurt dedicates its activities to understanding resistance mechanisms, testing and developing new concepts and tools to manage resistant weeds, and communicating and sharing knowledge and solutions.
- The partnership between Bayer and the Grains Research & Development Corporation announced in June 2015 aims to discover herbicides with novel modes of action to manage yield-robbing weeds.

Get more information on Bayer’s IWM program here: <http://www.iwm.bayer.com/>

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Contact:

Utz Klages, Tel. +49 2173 38-3125

E-mail: utz.klages@bayer.com

Forward-Looking Statements

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