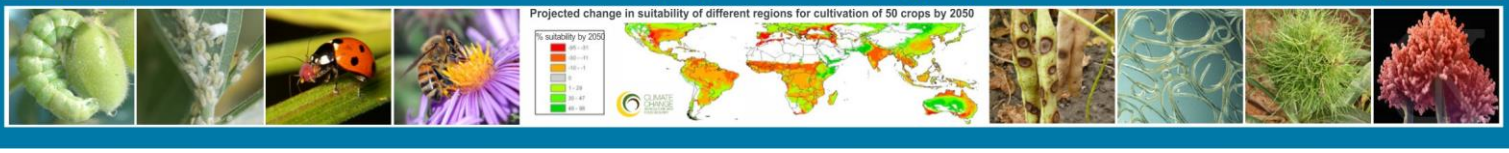

Dr. Jörg Romeis

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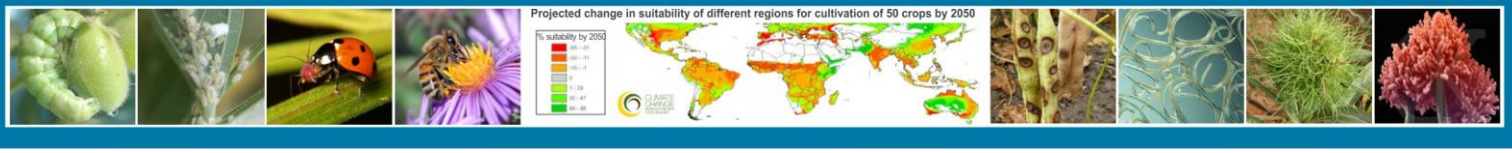
Biography – Dr. Jörg Romeis

Dr. Jörg Romeis heads the Biosafety Research Group at Agroscope in Zurich, Switzerland. Agroscope is the Swiss center of excellence for agricultural research, and is affiliated with the Federal Office for Agriculture. In addition, he is lecturer at the University of Bern and adjunct professor at the Institute of Plant Protection of the Chinese Academy of Agricultural Sciences in Beijing.

Jörg holds an MSc and PhD in biology and was trained as an applied entomologist with a focus on biological pest control and multi-trophic interactions. He has more than 20 years of experience in studying insect-resistant genetically engineered (GE) plants, such as Bt maize and cotton, and with the environmental risk assessment that these plants have to pass prior to cultivation. His research is focusing on the effects of GE plants on arthropod herbivores and their predators and parasitoids. In addition to primary research, Jörg is actively involved in international expert groups defining operational environmental protection goals, and in developing guidelines for risk assessment and non-target testing to ensure that GE plants released to the environment do not cause environmental harm. In total, Jörg has published more than 170 papers in peer-review journals. He has also edited a book that addressed the integration of insect-resistant GM plants in IPM programs.



Presentation Title:

Genetically engineered insect-resistant crops in pest control: Opportunities and challenges

Abstract:

Genetically engineered (GE) crops producing insecticidal proteins from Bacillus thuringiensis have become a major control tactic for a number of key lepidopteran and coleopteran pests, mainly in maize, cotton, and soybean. First grown in 1996, Bt-transgenic varieties covered a total of 101 million hectares worldwide in 2017. Currently, GE technologies are being expanded to more pests and crops and new approaches such as RNA interference or genome editing are being used to develop insect-resistant varieties.

The presentation will summarize the experience gained with insect-resistant Bt-transgenic plants over the past 20+ years and their role in sustainable pest control. Evidence will be presented that the efficacy of Bt plants in controlling the target pest(s) is high and can lead to area-wide population reductions. The environmental risk assessment will be described that each GE plant needs to pass prior to cultivation. Extensive experience and insight have been gained through laboratory and field-based studies of the non-target effects of crops producing insecticidal Bt proteins. Overall, there is conclusive evidence that the insecticidal proteins deployed today cause no unacceptable adverse effects to natural enemies and other valued non-target species. This together with the fact that insect-resistant GE plants can reduce the dependency on chemical insecticides makes them a powerful tool in IPM programs. However, the deployment of Bt-transgenic plants also poses a number of challenges, such as the evolution of resistance in the target pest(s) that will have to be considered when deploying the technology.