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Julius Kühn-Institut

Bundesforschungsinstitut für Kulturpflanzen
Federal Research Centre for Cultivated Plants

JKI at a glance

**EPPO Workshop on IPM of Insect Pests in
Oilseed Rape
Berlin, September 2017**

European and Mediterranean Plant Protection

www.julius-kuehn.de

Julius Kühn Institute, Federal Research Centre for Cultivated Plants



Governmental Research Institution and
Independent Higher Federal Authority

directly subordinated to the

German Federal Ministry of Food and Agriculture

Established: 1 January 2008 (by joining BBA with other research centres)

Founded: 1898

as

**Imperial Biological Research Centre for Agriculture and Forestry
in Berlin**



Berlin

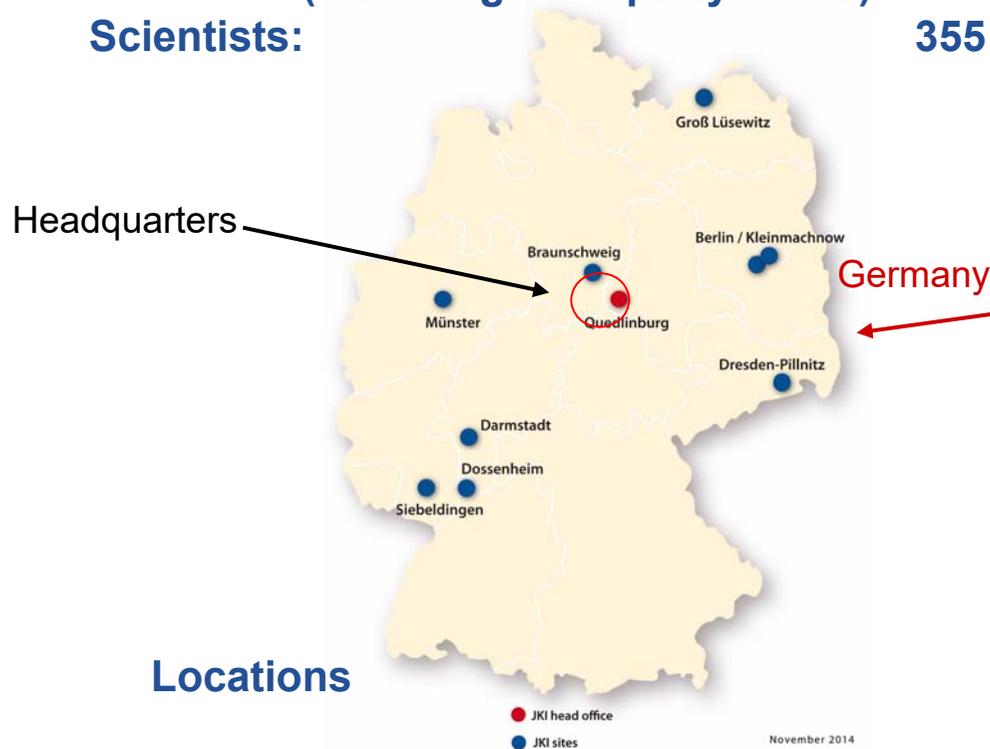


Quedlinburg

Julius Kühn Institute Federal Research Centre for Cultivated Plants



- ➔ Established: **1st January 2008**
- ➔ Headquarters: **Quedlinburg**
- ➔ 17 research institutes, 10 locations
- ➔ Staff (2017):
 Permanent positions (federal budget): **768**
 Total staff (including third-party funds): **1172**
 Scientists: **355**



Tasks



JKI performs tasks assigned by law:

- **Plant Protection Act**
 - **Genetic Engineering Act**
 - **Chemicals Act**
- and corresponding legal regulations

Major fields of competence:

- **Plant genetics, breeding research and breeding**
- **Sustainable plant cultivation**
- **Plant nutrition, soil science**
- **Plant pathology, **plant protection** and plant health**

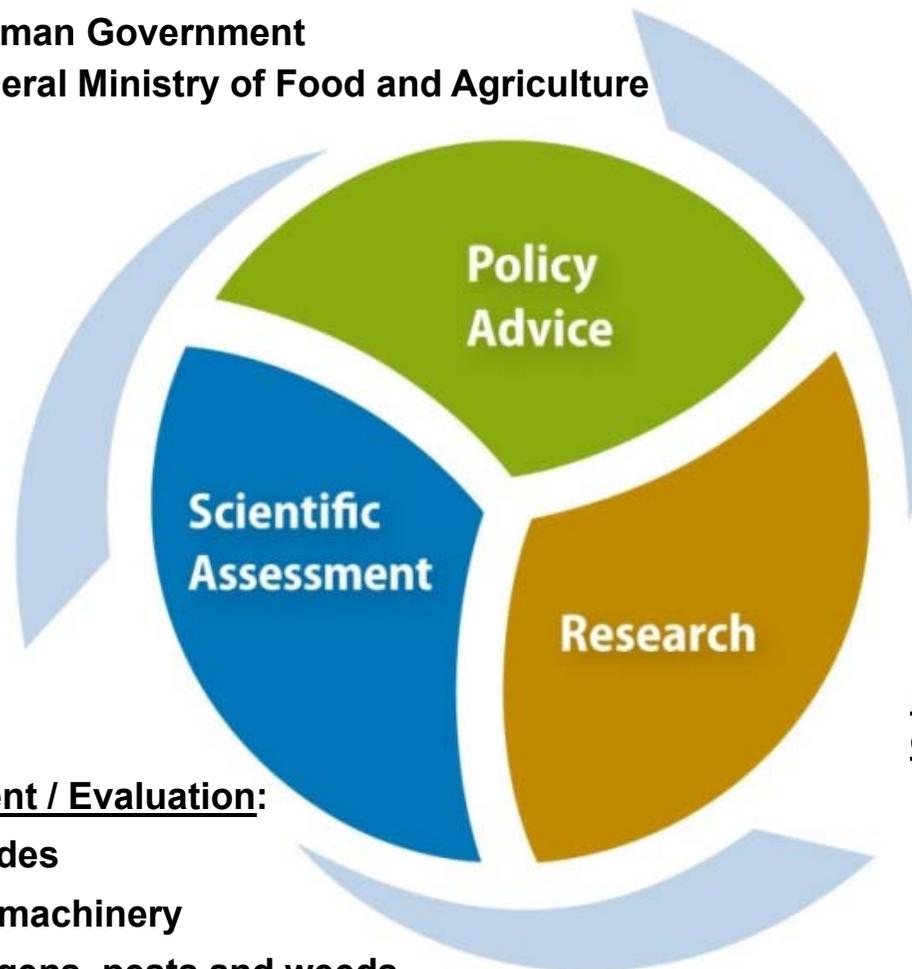


Responsibilities



Policy Advice:

- German Government
- Federal Ministry of Food and Agriculture



Scientific Assessment / Evaluation:

- **Pesticides**, biocides
- Plant protection machinery
- Regulated pathogens, pests and weeds
- Genetically modified plants
- Fertilizers

Research in the major fields of competence:

- Plant genetics, breeding research, breeding
- Sustainable plant cultivation
- Plant nutrition, soil science
- Plant pathology, **plant protection**, plant health

Scientific assessment

in the framework of

- the authorization of plant protection products
- the approval procedure of active substances



Risk Management

Federal Office of Consumer Protection and Food Safety (BVL)



Authorization

Federal Environment Agency (UBA)

Julius Kühn-Institut (JKI)

- Efficacy
- Honey bee

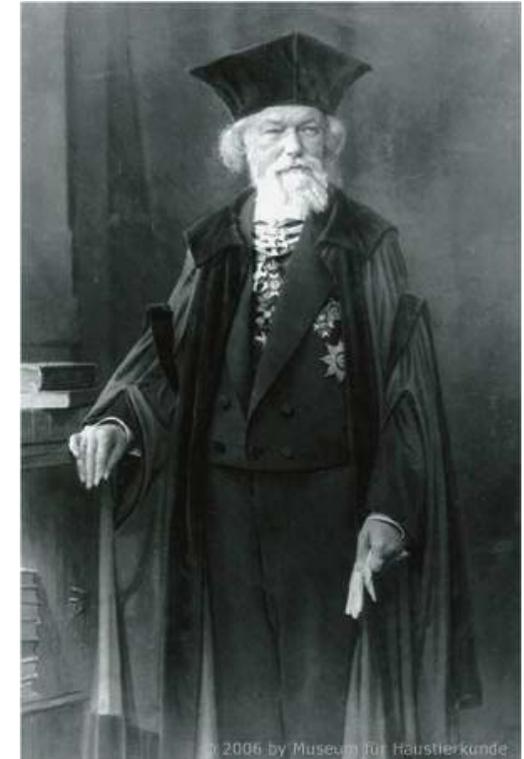
Federal Institute for risk assessment (BfR)

Risk Assessment

Who was Julius Kühn?



- Julius Kühn lived from 1825 till 1910.
- He established and developed the agrarian sciences as part of university education in Germany in the 19th century.
- He is one of the most prominent founders of modern phytomedicine.
- In 1863 he was given the permission to establish the first independent research institute in agricultural sciences in Germany at the University of Halle.
- Under his leadership during the next 40 years, this institution evolved into the most eminent educational and research institution of agrarian sciences in Germany at that time.
- He published about 300 articles mainly about plant protection.





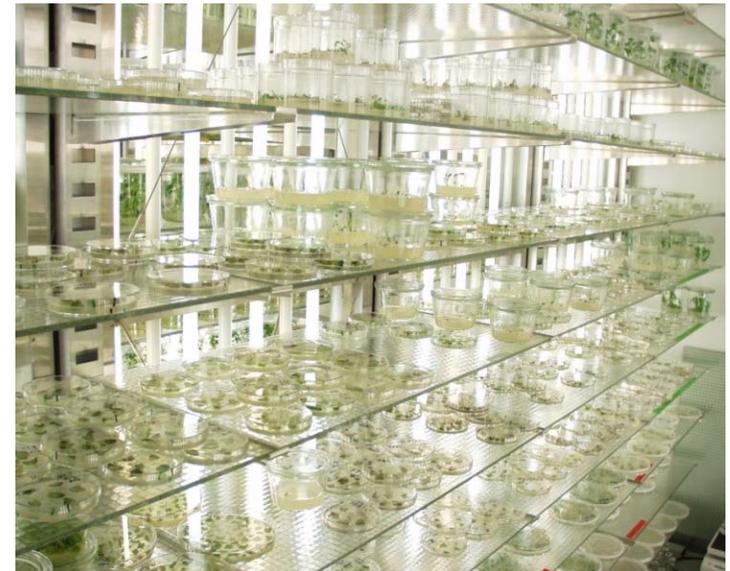
**Thank you for your attention
and welcome to the JKI**



Focus: Plant Genetics, Breeding Research and Plant Breeding



- Breeding research in field crops, horticultural and fruit crops, grapevines
- Resistance and stress tolerance
- Biosafety in plant biotechnology
- Chemical analytics of plants
- Fruit breeding, fruit genebank
- Grapevine breeding, grapevine genebank



Focus: Sustainable Crop Cultivation, Plant Nutrition and Soil Science



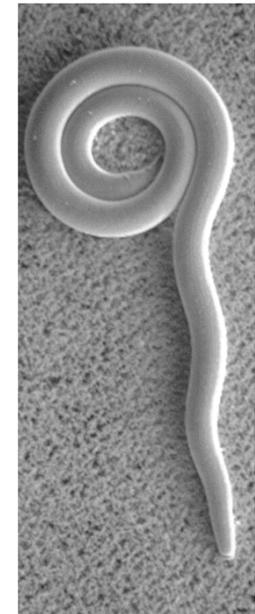
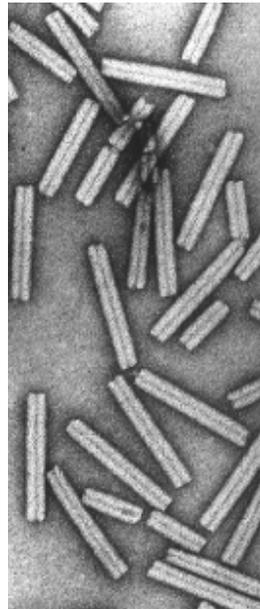
- Developing sustainable plant cultivation systems
- Impact of climate change on plant cultivation and elaborating strategies to respond to changes in growing conditions
- Agroforestry systems – Woody biomass for energy and structural diversity
- Spectral measurement techniques for the determination of vegetation characteristics
- Analysing the supply of soils and crops with minerals, interaction between mineral supply and crop metabolism
- Translocation, tempo-spatial variability and balances of nutrients and pollutants in soil



Focus: Plant Pathology, Plant Protection and Plant Health



- National and international plant health
- Plant protection in crops, vegetables, fruit crops, trees, ornamentals, grapevine, stored product protection
- Diagnostics of pathogens
- Technology assessment, long term trials with pesticides
- Plant protection equipment
- Ecological chemistry (pesticide residues)
- Examining and analysing bees for damage caused by pesticides
- Plant analysis



JKI Institutes



Plant genetics, breeding research and breeding

- Institute for Breeding Research on Agricultural Crops
- Institute for Breeding Research on Horticultural Crops
- Institute for Breeding Research on Fruit Crops
- Institute for Grapevine Breeding
- Institute for Resistance Research and Stress Tolerance
- Institute for Biosafety in Plant Biotechnology

Sustainable plant cultivation, plant nutrition and soil science

- Institute for Crop and Soil Science

Plant pathology, plant protection and plant health

- Institute for Epidemiology and Pathogen Diagnostics
- Institute for Plant Protection in Field Crops and Grassland
- Institute for Plant Protection in Horticulture and Forests
- Institute for Plant Protection in Fruit Crops and Viticulture
- Institute for Bee Protection
- Institute for Ecological Chemistry, Plant Analysis and Stored Product Protection
- Institute for Strategies and Technology Assessment
- Institute for Biological Control
- Institute for National and International Plant Health
- Institute for Application Techniques in Plant Protection



Scientific assessment



- We evaluate the efficacy of plant protection products as part of the national and European registration process for pesticides. This includes the risk assessment of pesticides for honey bees as well. We examine suspected bee poisoning incidents caused by pesticides.
- We test and certify plant protection equipment.
- We test the resistance of plant varieties against diseases and pests.
- We are closely involved in regulatory activities about plant health. These include assessing of risks associated with the introduction and spread of harmful organisms and measures to prevent that.
- We are involved in the procedure for the approval of release and marketing of genetically modified plants.

Research topics

- Studying the biology, population dynamics and epidemiology of harmful organisms and weeds
- Developing methods of pathogen diagnostics - as basis for plant breeding, plant protection and plant health
- Developing sustainable methods for an integrated plant protection
- Pest risk management
- Developing sustainable methods for an integrated and biological plant protection
- Evaluating and preserving plant genetic resources
- Improving resistance and tolerance of field and horticultural crops to biotic and abiotic stress
- Developing sustainable plant cultivation systems
- Investigating the impact of climate change on plant cultivation and elaborating strategies to respond to changes in growing conditions
- Analysing the supply of soils and crops with minerals and studying the interaction between mineral supply and crop metabolics