



The Ministry of Education, Youth and Sports  
International Cooperation in Research and Development  
Program INTER-EXCELLENCE » Subprogram INTER-INFORM » Project no. LTI17006

## **Support for Czech Participation of the Agrarian Sector Research Organizations in the International Research**

Information Brochure



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## Agritec Plant Research Ltd.

Agritec Plant Research Ltd. (APR) is a private research company working in the field of agrobiological research, plant breeding, agricultural consultancy and services in the scope of technical crops (flax, hemp, winter-rape, caraway) and legumes (pea, faba bean, lupin and other temperate-climate grain legumes).

APR was established as a subsidiary of the parent company AGRITEC, Research, Breeding and Services, Ltd. Šumperk in 2002. This parent organization was founded via privatization of the former Research Institute of Technical Crops and Legumes, which in 1942 had been moved from the former Kaiser Wilhelm Institut für Bastfaseforschung located in Sorau in Silesia to the newly built institute in Šumperk.

APR is a non-profit organization in accordance with the Community framework for state aid focused on research, development and innovation issued by the European Commission, and, as such, reinvests all funds back into research. AGRITEC, Research, Breeding and Services, Ltd. is the exclusive shareholder and owner of this subsidiary.



# Main Activities of Agritec

## Research

Research and maintenance of germplasm resources of grain legumes and flax in the framework of National Programme for Maintenance and Conservation of Germplasm Resources of Culture Crops CR and FAO

- Application of biochemical and molecular markers and image analysis for exact characterization of germplasm resources

## Genetics, breeding and biotechnology of grain legumes, flax, hemp, winter rape and caraway

- Improvement of resistance to the complex of fungal pathogens of pea, flax, linseed, winter rape, medicinal and spice plants
- Genetic transformation of pea and flax
- Application of molecular markers for cultivar identification and marker-assisted selection
- Transgene detection in plants and plant-derived products
- Study of environmental risks caused by GMO (pea, flax, winter rape)
- Somatic embryogenesis in grain legumes, molecular markers and regeneration in vitro
- Dihaploid production in flax and winter rape via anther and microspore cultures
- Breeding of linseed with altered composition of fatty acids in seed oil



### **Agrotechnology of grain legumes and technical crops**

- Agrotechnology of pea, lupin, soy, faba bean, linseed, hemp and caraway
- Utilization of flax and hemp for phytoremediation of heavy metals
- Utilization of legume-cereal intercropping

### **Integrated protection of grain legumes, linseed and other crops**

- Research of insect pests of legumes and technical crops
- Pesticide application – protection against pests and diseases
- Integrated protection of caraway and medicinal crops (Milk thistle)

### **Breeding of Legumes and Technical Crops**

- Peas with complex resistance to fungal pathogens
- Linseed with altered composition of fatty acids in seed oil
- Caraway with high yield and high content of essential oil
- Hybrid winter rape based on CMS-system
- Representation of foreign companies for variety testing
- Seed testing for biological quality
- Production, adjustment, storage and sale of seeds of grain legumes, linseed, hemp and caraway



## Specialize Services for Breeders and Agriculture

- Cultivar identification by molecular markers
- Seed testing for healthy status and biological quality
- Recommendation of suitable cultivars for various growing regions
- Pesticide testing in the framework of registration procedure of the State Phytosanitary Administration CR
- Application of the system of integrated protection against pests, diseases and weeds
- Methodological recommendations for the application of plant protection chemical
- Laboratory tests of biological efficiency of fungicides
- Laboratory, greenhouse and field tests of breeding materials for resistance to the complex of fungal pathogens
- Chemical analyses of proteins, lipids, fatty acids, starch, antinutritional substances and inorganic microelements in plants and soil
- Immunochemical analyses of plant viruses and mycotoxins
- Identification of transgenes in plants and food
- Sale of pesticides
- Library services and literature search services



# Research and Cooperation

## Partners in the Czech Republic

- Institute of Experimental Botany AS CR Praha
- Institute of Plant Molecular Biology AS CR České Budějovice
- Research Institute of Plant Production Praha
- Mendel University in Brno
- Palacký University Olomouc
- University of Chemical Technology Praha
- Various crop research institutes and companies

## Foreign Partners

- FAO Flax and Other Bast Plants Network
- AEP (European Association for Grain Legume Research)
- IPGRI (International Plant Genetic Resources Institute)
- Various crop research institutes

## Facilities and Resources

- Chemical and biochemical laboratories with necessary equipment for analysis of plant and soil material, particularly for analysis of legume seed composition
- Laboratory of molecular biology with equipment for analysis of DNA
- Laboratories of biotechnology, entomology, phytopathology and image analysis
- Complete equipment for field and laboratory research, small plot sowing and harvesting machinery
- Glasshouses, hall for crop production, 17 own hectares of arable land for research purposes, 39 hectares of arable land in rent







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