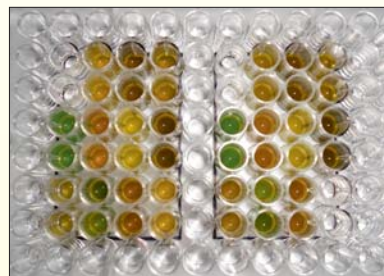


Department of Diagnostic Laboratory Olomouc

The specialized laboratories of **bacteriology, entomology, mycology, virology and nematology** are in the building of the Division of Diagnostics. Laboratory of biochemistry and its **molecular biological methods** complement the aforementioned laboratories. Growing facilities including quarantine greenhouse belong to the premises. Specific tasks are fulfilled by **Laboratory of integrated pest management support**, which uses locally available experimental plots with area of over 5 ha.



DL Olomouc – ELISA microplate



DL Olomouc – quarantine greenhouse trial



DL Olomouc – sample preparation for PCR method



DL Olomouc – field trials evaluation

Diagnostic Laboratory Prague

Provides primarily **nematological diagnostics** and **official tests of resistance of potato varieties and selections** against the causative agent of potato wart disease (*Synchytrium endobioticum*) and cyst nematodes and verification and identification of pathotypes of these harmful organisms. In order to follow those activities, the laboratory maintains and professionally manages infectious land in Svojše, in the Bohemian Forest (Šumava).



DL Praha – cysts of *Globodera* sp.



DL Praha – tumors of *Synchytrium endobioticum* on potato plants

Diagnostic Laboratory Opava

Since 1992, the laboratory **monitors the flight activities of aphids**. Suction traps of Johnson – Taylor type (12.2 meters high) were placed at testing stations in Čáslav, Chrlice, Lípa near Havlíčkův Brod, Věrovany and Žatec. The location of suction traps represents the main production areas in the Czech Republic. All traps work continuously from April 1st to November 30th. During this period the traps work 24 hours a day. Daily catches of aphids from a network of suction traps are continuously analyzed in the diagnostic laboratory. It monitors the flight activity of economically important aphids; week's overviews are published in the **Aphid Bulletin**. (<http://www.ukzuz.cz>).



Johnson and Tylor suction trap (Experimental station Žatec)



DL Opava – institute building



DL Opava – yellow water trap in the potato field

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CENTRAL INSTITUTE FOR SUPERVISING AND TESTING IN AGRICULTURE

Division of Diagnostics

In the field of phytosanitary care, ÚKZÚZ performs diagnostics of harmful organisms according to Act No.147/2002 Coll. on Central Institute for Supervising and Testing in Agriculture (Article 5 (3)). The responsible unit is the Division of Diagnostics with competences of the National Reference Laboratory for diagnostics of harmful organisms.



Laboratories of Division of Diagnostics

- perform **the competences of the National Reference Laboratory for diagnostics of harmful organisms** in the field of phytosanitary care according to Article 5 (3) of the Act No.147/2002 Coll. on Central Institute for Supervising and Testing in Agriculture and amending certain related laws, as amended.
- analyze usually samples taken by phytosanitary inspectors. Results of the analyses are communicated to these inspectors.
- perform complex diagnostics of harmful organisms, identification of plant disease agents and damages, testing and detection of organisms harmful to plants.
- serve as the main source of official information in the relevant areas of specialized plant health activities, participate in the pest risk analyses and in the preparation of Czech legislation and implementation of EU legislation concerning the diagnostics and testing.
- cooperate with diagnostic laboratories and scientific and research institutions at national and international level and participate in research projects related to diagnostics and testing activities.
- are involved in international programs and projects (EUPHRESKO, COST) and are members of international professional organizations (e.g. EPPO).

Laboratory diagnostics is specialized according to different groups of harmful organisms within the fields of **bacteriology, entomology, mycology, virology and nematology**. Modern methods of **molecular biology** are used for the detection and identification of selected harmful organisms. Laboratory work includes also development, implementation, optimization, validation and standardization of diagnostic methods, maintaining and expanding collections of reference material and development of a database of photographic material of plant damages, diseases and pests and also publication activities.



DL Olomouc – bacterial colonies fluorescence

DL Olomouc – laboratory work (ELISA method).

Since 2007, the laboratories have an established quality management system. In January 2008, the Czech Institute for Accreditation granted diagnostic laboratories first **Certificate of accreditation according to standard ČSN EN ISO / IEC 17025: 2005**. Division of Diagnostics defended its status as accredited laboratory for the second time and received a new certificate, valid until 7. 1. 2021.

The accreditation covers chemical, microbiological and serological detection and identification of plant pathogens in samples of biological material, substrates, sludge, irrigation and waste waters, in the extent of the extract from the current scope of accreditation, which specifically lists all accredited methods.

Laboratories of the Division of Diagnostics of UKZUZ as national reference laboratories for diagnostics of harmful organisms coordinate activities of other reference laboratories. UKZUZ authorizes legal entities that join its invitation, to perform expert activities as **reference laboratories** for diagnostics of harmful organisms listed in Article 10 (1) of the Act or for harmful organisms against which there have to be measures taken to avoid their introduction and spread, according to Article 7 (4) or Article 11 (2 and 3) of the Act.

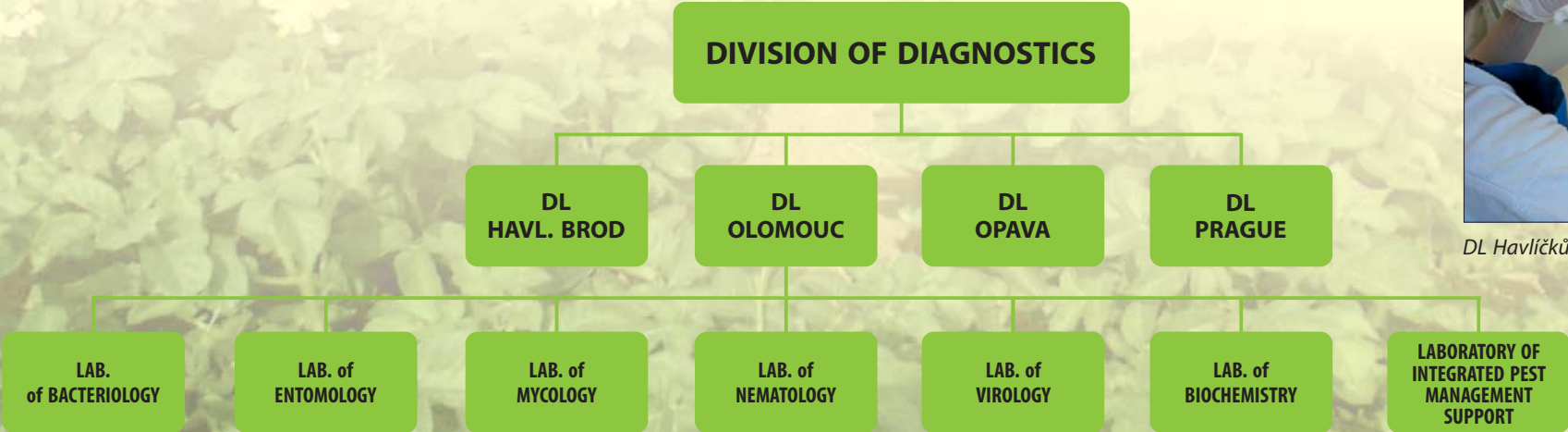
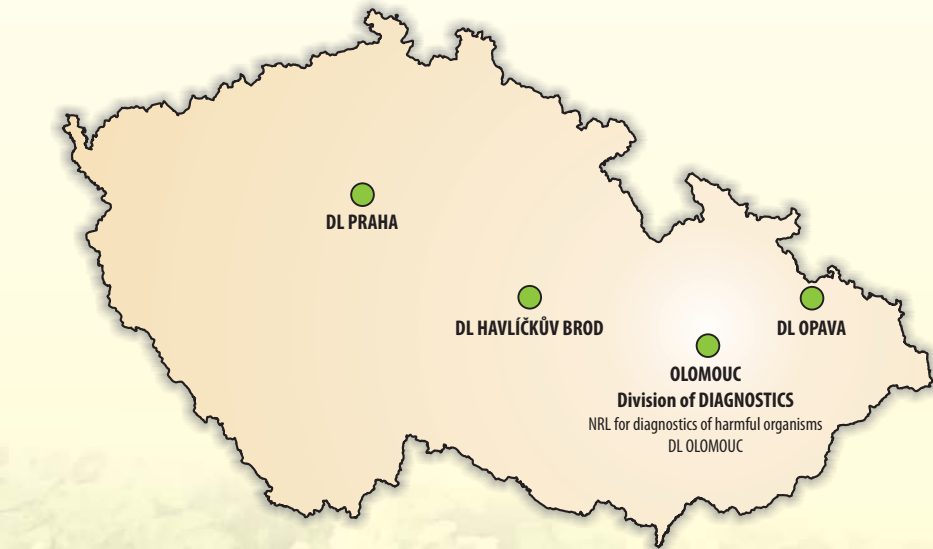
DL Olomouc – GC for identification of bacteria



Reference laboratories for diagnostics (state in 2016)

- Potato cyst nematodes (*Globodera rostochiensis* and *Globodera pallida*) AGROVAK Batelov, AGROPODNIK Valašské Meziříčí, AGRO-LA Jindřichův Hradec, ENVIRO-EKOANALYTIKA Velké Meziříčí.
- *Clavibacter michiganensis* subsp. *sepedonicus* (the causative agent of potato ring rot) and *Ralstonia solanacearum* (causing brown rot in potatoes and tomatoes): VÚBH. Brod.
- *Candidatus Phytoplasma mali* (syn: Apple proliferation phytoplasma) causative agent of apple proliferation and Plum pox virus (causative agent of plum pox): VŠÚO Holovousy.

Location of Workplaces

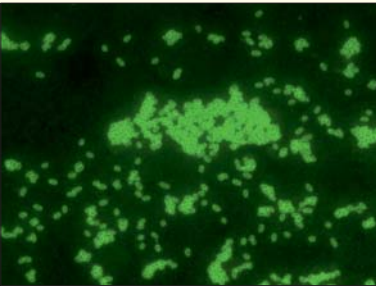


Department of Diagnostic Laboratory Havlíčkův Brod

Diagnoses are focused mainly on **diseases and pests of potatoes**. One of the most important are the tests for the quarantine bacterioses in accordance with legislation in force, including testing irrigation water, wastewaters and associated host vegetation. This specialization is completed by testing of soil samples using **a float method for the presence of potato cyst nematodes and determining the presence of (*Synchytrium endobioticum*) zoosporangia**. The laboratory also determines the occurrence of **fire blight** and detects **permanent spores of *Tilletia* sp.** in cereal grains and other commonly occurring diseases and pests of monitored commodities.



DL Havlíčkův Brod – institute building



DL Havlíčkův Brod – immunofluorescence microscopy



DL Havlíčkův Brod – laboratory sample preparation