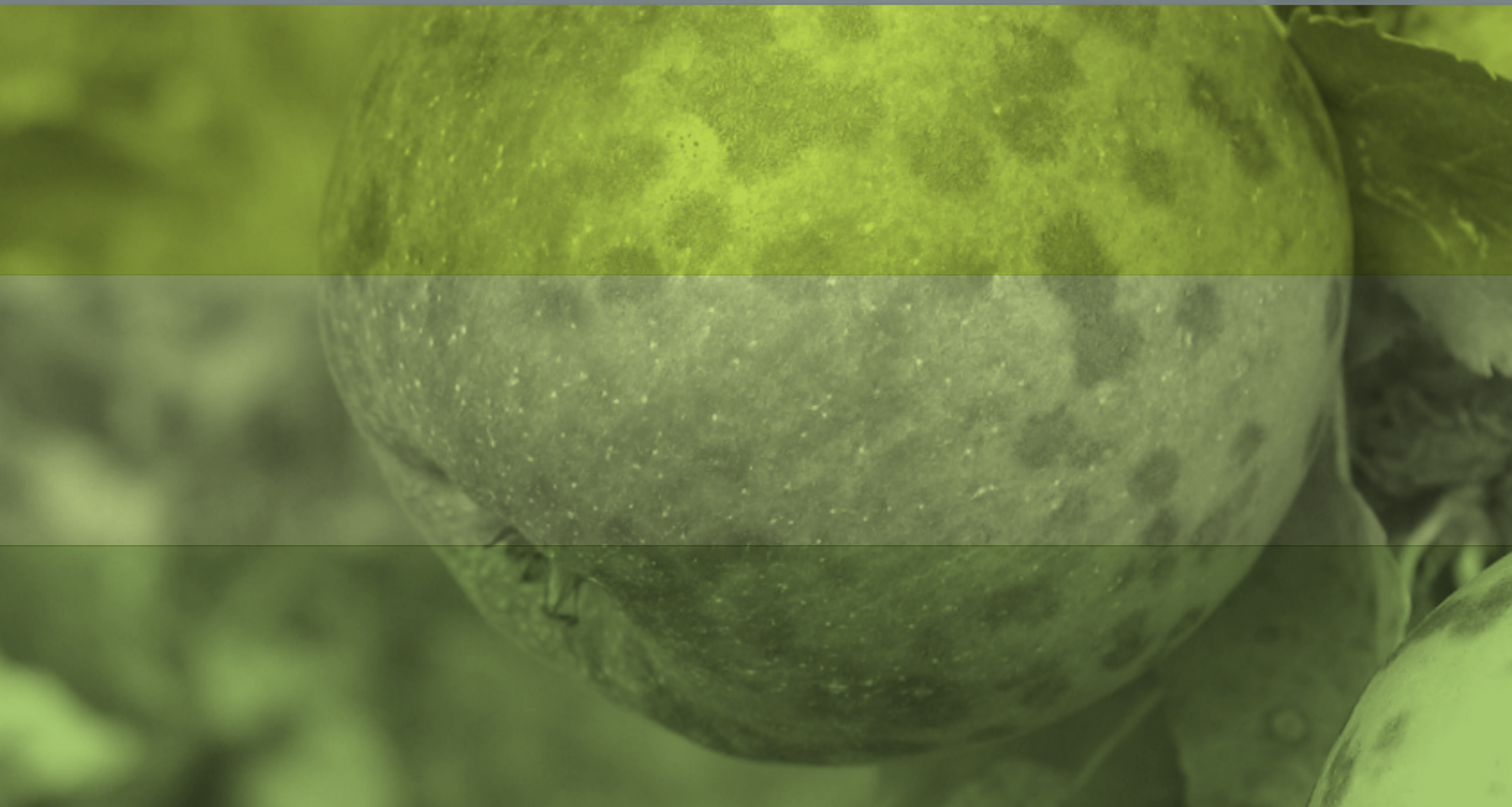
WP 5

UPGRADE OF PATHOLOGY RESEARCH TEAMS

DEPARTMENT OF PLANT PATHOLOGY



DEPARTMENT OF PLANT PATHOLOGY
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FOCUS ON PLANT HEALTH

Occurrence of infection diseases of plants poses key and obvious impact on plant health. Among currently known pathogens the most common and destructive to hosts are fungi, bacteria and viruses. Analysis of their occurrence, phenotypic and molecular characterization are permanent aims of studies realized at Department of Plant Pathology, both by unit and WP5 staff.

AREA OF EXPERTISE

1. The plant viruses and methods of their detection (biotests, ELISA test, the techniques of molecular biology).
2. The bioinformatic methods for the plant viruses characterization.
3. Mycology – various basic and advanced aspects of fungal biology, taxonomy, their phenotypic/molecular biodiversity, and biotechnology/agricultural application as biocontrol agent.
4. Modern plant disease diagnostics methods, isolation and characteristics of causing factors.
5. Flow cytometry analysis in microbiology.

AREA OF RESEARCH

1. Metagenomic approach to cereal plant .
2. Apoptosis in fungi.
3. Resistance breeding for Fusarium diseases of small cereals grain, maize and accumulation of secondary metabolites - mycotoxins.
4. The detection and the identification of the virus diseases of fruit trees, blueberry bushes and vegetables (garlic, onion, shallot, leek).

AREA OF RESEARCH continued

5. The biological and the serological characterization of viruses.
6. The molecular characterization of viruses using the techniques of molecular biology.
7. The study of genetic variability among virus plants population.
8. The phylogenetic, recombination and selection pressure analyses.
9. The molecular mechanisms of the interaction between the host plants and the viruses.

EQUIPMENT

1. Applied Biosystems® 7500 Fast Dx Real-Time PCR Instrument (Applied Biosystems® by Life Technologies™, CA, USA)
2. 2720 Thermal Cycler i Veriti™ 96-Well Thermal Cycler (Applied Biosystems® by Life Technologies™, CA, USA)
3. Multimode reader- Infinite® 200 PRO (Tecan, Männedorf, Switzerland)
4. Liofilizator Freeze Dryer ALPHA 2-4Ldplus, (Donau Lab, Zurich, Switzerland)*
5. Flow cytometer BD FACSVerse™ Becton Dickinson (BD Biosciences)*

*equipment purchased with Warsaw Plant Health Initiative project funds

FREEZE DRYER ALPHA 2-4LDPLUS

FLOW CYTOMETER BD FACSVERSE

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