

Prof. dr hab. Chełkowski Jerzy

e mail: jche@igr.poznan.pl

Employed at Institute of Plant Genetics, Polish Academy of Sciences, Poznań, Poland since 1993.

Graduated at University of Life Sciences, Poznań and Warsaw, Poland

1962 MSc, 1969 PhD

1981 Docent - Associate Professor, 1992 Full Professor

Scientific Interest

- Secondary metabolites of toxigenic fungi producing important mycotoxins.
- Contamination of cereal grain with *Fusarium* mycotoxins.
- Resistance of wheat, barley, triticale and maize cultivars against infection by pathogenic *Fusarium* species and accumulation of mycotoxins in kernels.
- Identification of *Fusarium* species and chemotypes using specific PCR assays.
- Identification of resistance genes against *Blumeria graminis* and *Puccinia triticina* in wheat accessions using DNA – PCR markers.
- Biological control of cereal diseases caused by *Fusarium* species and decomposition of mycotoxins using *Trichoderma* and *Clonostachys* isolates.

Supervisor of PhD students

Juliusz Perkowski

Dorota Latus-Ziętkiewicz

Wojciech Wakuliński

Sławomir Wojciechowski

Michał Tomkowiak,

Łukasz Stępień,

Lidia Golka-Błaszczuk,

Grzegorz Koczyk.

Scientific cooperation

Department of Chemistry, University of Life Sciences, Poznań

(Prof. P.Goliński, dr M. Kostecki, Prof. J.Perkowski, dr M. Tomczak-Laskowska, dr Maciej Buśko, Dr K.Gromadzka)

Department of Forest Phytopathology, University of Life Sciences, Poznań (Prof. Hanna Kwaśna)

Department of Plant Pathology, University of Life Sciences, Warsaw, (prof. W.Wakuliński)

Institute of Science of Food Production, CNR, Bari, Italia project: **Agriculturally important**

toxigenic fungi (Dr A. Logrieco i Dr A.Visconti).

Research Institute of Crop Production, Praha-Ruzyne, Czech Republic

Dr (Sip V., Chrpova J. i Sykorova S) project on:

Evaluation of wheat resistance to accumulation of *Fusarium* mycotoxins in grain (Prof. dr hab. J. Chełkowski, dr H. Wiśniewska)

Coordination of Polish project 1999-2002

TRANSGENESIS I GENOMICS OF CROP PLANTS.

Coordination of the Scientific Network

GENOMICS I TRANSGENESIS OF CROP PLANTS 2003-2005.

Polish Ministry of Science Project PBZ – KBN – 112/P06/2005:

Microorganisms as a biopesticides to control *Fusarium* wheat diseases and to prevent accumulation of mycotoxins in kernels. 29.XI.2005 – 29.XI.2008

Principal investigator: prof. Jerzy Chełkowski

COST 835 Project: Agriculturally important toxigenic fungi, participant.

CNR – Italy – Polish Academy of Sciences project: Toxigenic fungi of agricultural importance.

European interlaboratory project on identification of resistance genes to leaf rust in wheat using PCR-STS markers.

Selected publications:

Błaszczuk L., Popiel D., Chełkowski J., Koczyk G., Samuels G.J., Sobieralski K. and Siwulski M.

2011. Species diversity of *Trichoderma* in Poland. J Appl Genetics 52;233-243

Warzecha T., Adamski T., Kaczmarek Z., Surma M., Chełkowski J., Wiśniewska H., Krystkowiak K., Kuczyńska A. 2011.Genotype-by-environment interaction of barley DH lines infected with *Fusarium culmorum* (W.G.Sm.)Sacc.. Field Crops Research 120: 21-30

Gromadzka K., Chełkowski J., Popiel D., Kachlicki P., Kostecki M. and Goliński P. 2009. Solid substrate bioassay to evaluate the effect of *Trichoderma* and *Clonostachys* on the production of zearalenone by *Fusarium* species.. World Mycotoxin Journal 2: 45-52

Stępień, Ł., Chełkowski, J. 2010. *Fusarium* head blight of wheat: pathogenic species and their mycotoxins. World Mycotoxin Journal 3:107-119

- POPIEL D, KWAŚNA H, CHEŁKOWSKI J, STĘPIEŃ Ł, LASKOWSKA M, 2008. Impact of selected antagonistic fungi on *Fusarium* species – toxigenic cereal pathogens. *Acta Mycologica* 43(1): 29-40.
- STĘPIEŃ Ł, WAŚKIEWICZ A, WIT M, GOLIŃSKI P, CHEŁKOWSKI J, WAKULIŃSKI W, 2008. Polymorphism of selected *fum* genes and fumonisin B₁ biosynthesis among isolates of six *Fusarium* species. *Cer Res Comm* 36B, 647-649.
- GROMADZKA K, CHEŁKOWSKI J, STĘPIEŃ Ł, GOLIŃSKI P, 2008. Occurrence of zearalenone in wheat and maize grain in Poland. *Cer Res Comm* 36B, 361-363.
- STĘPIEŃ Ł, POPIEL D, KOCZYK G, CHEŁKOWSKI J, 2008. Wheat-infecting *Fusarium* species in Poland – their chemotypes and frequencies revealed by PCR assay. *J Appl Genet* 49(4): 433-441.
- BUŚKO M., CHEŁKOWSKI J., POPIEL D., PERKOWSKI J. 2008. Solid substrate bioassay to evaluate impact of *Trichoderma* on trichothecene mycotoxin production by *Fusarium* species. *J Sci Fod Agric* 88: 533-541
- CHEŁKOWSKI J., RITIENI A., WIŚNIEWSKA H., MULE G., LOGRIECO A. 2007. Occurrence of Toxic Hexadepsipeptides in Preharvest Maize Ear Rot Infected by *Fusarium poae* in Poland. *J. Phytopathology* 155: 8-12.
- TYRKA M., BŁASZCZYK L., CHEŁKOWSKI J., LIND V., KRAMER I., WEILEPP M., WIŚNIEWSKA H., ORDON F. (2004). Development of the single nucleotide polymorphism marker of the wheat *Lr1* leaf rust resistance gene. *Cell. & Mol. Biol. Lett.* 9, : 869-878.
- DOBRAZCZYK B.J., SALMONOWICZ B.P., ŁUGOWSKA B., CHEŁKOWSKI J. (2005). Rapid quality assessment of wheat cultivars registered in Poland using the 2-g mixograph and multivariate statistical analysis. *Cereal Chemistry*. 82(2): 182-186.
- BŁASZCZYK L., CHEŁKOWSKI J., KORZUN V., KRAIČ J., ORDON F., OVESNÁ J., PURNHAUSER L., TAR M., VIDA G. (2004) Verification of STS markers for leaf rust resistance genes of wheat between seven European laboratories. *Cell.Mol. Biol. Lett.* 9; 805-817
- BŁASZCZYK L., GOYEAU H., HUANG X., RÖDER M., STĘPIEŃ Ł., CHEŁKOWSKI J. (2004). Identification and mapping of gene *Lr37* for leaf rust resistance gene on microsatellite map of wheat, *Cell. Mol. Biol. Lett.* 9; 869-878.
- KOCZYK G., CHEŁKOWSKI J. (2003). An assessment of resistance gene analogues of *Oryza sativa ssp. japonica*: their presence and structure. *Cell. Mol. Biol. Lett.* 8, 963-972.
- PASCALE M., VISCONTI A., PRONCZUK M., WIŚNIEWSKA H., CHEŁKOWSKI J. (2002). Accumulation of fumonisins and fusaproliferin in maize hybrids inoculated under field conditions with *Fusarium proliferatum*. *Mycol. Res.* 106: 1026-1030
- PASCALE M., VISCONTI A., CHEŁKOWSKI J. (2002). Ear rot susceptibility and mycotoxin contamination of maize hybrids inoculated with *Fusarium* species under field conditions. *Eur. J. Plant Pathol.* 108: 645- 651.
- CHEŁKOWSKI J., WIŚNIEWSKA H., ADAMSKI T., GOLIŃSKI P., KACZMAREK Z., KOSTECKI M., PERKOWSKI J., SURMA M. (2000). Effects of *Fusarium culmorum* head blight on mycotoxin accumulation and yield traits in barley doubled haploids. *J. Phytopathology* 148: 541-545.
- CHEŁKOWSKI J., KAPTUR P., TOMKOWIAK M., KOSTECKI M., GOLIŃSKI P., PONITKA A., ŚLUSARKIEWICZ-JARZINA A., BOCIANOWSKI J. (2000). Moniliformin accumulation in kernels of triticales accessions inoculated with *Fusarium avenaceum* in Poland. *J. Phytopathology* 148: 433-439.
- PASCALE M., VISCONTI A., AVANTAGGIATO G., PRONCZUK M., CHEŁKOWSKI J. (1999). Mycotoxin contamination of maize hybrids after infection with *Fusarium proliferatum*. *J. Sci. Food Agric.* 79: 2094-2098.
- CHEŁKOWSKI J., BATEMAN J., MIROCHA C.J. (1999). Identification of toxigenic *Fusarium* species using PCR assays. *J. Phytopathology* 147: 307-311.
- CHEŁKOWSKI J. (1998). Distribution of *Fusarium* species and their mycotoxins in cereal grains. W: *Mycotoxins in Agriculture and Food Safety* (K.K. Sinha, D. Bhatnagar, red.). Marcel Dekker, Inc. New York: 45-64.
- 3
- LOGRIECO A., MORETTI A., CASTELLA G., KOSTECKI M., GOLIŃSKI P., RITIENI A., CHEŁKOWSKI J. (1998). Beauvericin production by *Fusarium* species. *Applied and Environmental Microbiology* 64: 3084-3088.
- Editorial:**
- Chełkowski J. (Editor) *Fusarium - Mycotoxins, Taxonomy and Pathogenicity* - Elsevier, Amsterdam 1989.
- Chełkowski J. (Editor) *Cereal Grain - Fungi, Mycotoxins and Quality in Drying and Storage* - Elsevier, Amsterdam 1991.
- Kwaśna H., Chełkowski J., Zajkowski P. *Fusarium (Sierpik) w serii: Grzyby (Mycota) tom XXII* - Instytut Botaniki PAN, Kraków 1991.
- Chełkowski J., Visconti A. (Editors) *Alternaria - Biology and Plant Diseases and Metabolites* - Elsevier, Amsterdam 1992.
- Chełkowski J. (Editor) *Heminthosporia - Metabolites, Biology and Plant Diseases. Bipolaris,*

Drechslera, Exserohilum - IGR PAN Poznań 1995.

Chełkowski J. And Stępień Ł. (Editors). Microscopic Fungi – Host Resistance Genes, Genetics and Molecular Research, Institute of Plant Genetics, Polish Academy of Sciences, Poznań 200.