

Tomasz Marek Książczyk, Ph.D.

Position: Assistant Professor (since 2008)

phone: +48 61 6550 293, e-mail: tksi@igr.poznan.pl



Research interest:

- Plant molecular cytogenetics
- Physical mapping of repetitive DNA sequences
- Plant genome analysis and chromosome identification in intergeneric hybrids of the *Lolium-Festuca* complex
- Number, distribution and activity of rRNA genes in diploid and polyploid plants
- Organization and evolution of plant chromosome- and genome-specific sequences

Scientific visits, training-courses and fellowships:

- France – Department of Plant Breeding, INRA, Le Rheu (INRA Postdoctoral Fellowship – 13 months; 2007-2008)
- Netherlands – Wageningen University, Wageningen (EMBO course: „Advanced Molecular and Immuno-Cytogenetics on Chromosomes and Nuclei of Plants” - 1 week; 2003)
- Poland – Technician University of Gdańsk (molecular cloning course - 1 week; 2003)
- Poland – Laboratory of Molecular Biology, Institute of Plant Genetics PAS, Poznan (3 weeks; 2002)
- Germany – Institute of Biology II, Albert Ludwigs Universität Freiburg (Socrates-Erasmus Fellowship - 6 months; 2000).

Research projects (participation):

- **Genome structure of agamous and sexual species of *Taraxacum* genera in the light of caryological, cytogenetic and molecular studies**; source of funding: Ministry of Science and Higher Education, research grant N N303 807940 (2011-2014)
- **Identification of genetic resistance sources on *Plasmodiophora brassicae* and *Leptosphaeria maculans* in *Brassica napus* mutants and *Brassica* interspecific hybrids**; source of funding: Ministry of Science and Higher Education, research grant N N310 298439 (2010-2013)
- **Studies of cytogenetic stability and fertility in successive generations of the allotetraploid hybrids *Festuca pratensis* × *Lolium perenne***; source of funding: Ministry of Science and Higher Education, research grant N N310 090736 (2009-2012)
- **Molecular cytogenetic study of diploid and allotetraploid *Brassica* genomes in *in vivo* and *in vitro* conditions**; source of funding: Ministry of Education and Science, individual research grant 6 PO4C 006 28 (2005-2006)
- **Mutagenesis and physical mapping of genes in crops with small chromosomes**; source of funding: International Atomic Energy Agency (2002-2006)

Bibliography:

Papers:

Książczyk T., Kovarik A., Eber F., Huteau V., Khaitova L., Tesarikova Z., Coriton O., Chèvre AM. (2011). Immediate unidirectional epigenetic reprogramming of NORs occurs independently of rDNA rearrangements in synthetic and natural form of a polyploid species *Brassica napus*. *Chromosoma* (resubmitted)

Książczyk T., Apolinarska B., Kulak-Książczyk S., Wiśniewska H., Stojalowski S., Łapiński M. (2011). Identification of the chromosome complement and the spontaneous 1R/1V translocations in allotetraploid *Secale cereale* × *Dasypyrum villosum* hybrids through cytogenetic approaches. *Journal of Applied Genetics*. DOI:10.1007/s13353-011-0048-y [IF = 1,324]

Zwierzykowski Z., Zwierzykowska E., Taciak M., Kosmala A., Jones N., Zwierzykowski W., **Książczyk T.**, Krajewski P. (2011). Genomic structure and fertility in advanced breeding populations derived from an allotetraploid *Festuca pratensis* × *Lolium perenne* cross. *Plant Breeding* DOI:10/1111/j.1439-0523.2010.01839.x [IF = 1,026]

Książczyk T., Taciak M., Zwierzykowski Z. (2010). Variability of ribosomal DNA sites in *Festuca pratensis*, *Lolium perenne*, and their intergeneric hybrids, revealed by FISH and GISH. *Journal of Applied Genetics* 51(4): 449-460 [IF = 1,324]

Hasterok R., Wolny E., Hosiawa M., Kowalczyk M., Kulak-Książczyk S., **Książczyk T.**, Heneen W.K., Maluszynska J (2006). Comparative analysis of rDNA distribution in chromosomes of various species of *Brassicaceae*. *Annals of Botany* 97: 205–216. [IF = 2,755]

Hasterok R., **Książczyk T.**, Wolny E., Maluszynska J. (2005). FISH and GISH analysis of *Brassica* genomes. *Acta Biologica Cracoviensia Series Botanica* 47/1: 185–192. [IF = 0,351]

Karcz J., **Książczyk T.**, Maluszynska J. (2005). Seed coat patterns in rapid-cycling *Brassica* forms. *Acta Biologica Cracoviensia Series Botanica* 47/1: 159–165. [IF = 0,351]

Conference presentations (lectures and short oral presentations):

Zwierzykowski Z., Kosmala A., Zwierzykowska E., Taciak M., Zwierzykowski W., **Książczyk T.**, Jokś W. (2010). Cytogenetic stability and fertility in *Festulolium*. Abstracts of the 1st *Festulolium* Working Group Workshop, Poznań, Poland, 7–8 October, p. 6.

Kovarik A., **Książczyk T.**, Eber F., Huteau V., Khaitova L., Tesarikova K., Coriton O., Chèvre A.M. (2010). Epigenetic silencing precedes rDNA loci rearrangements during the stabilization of a polyploid species, *Brassica napus*. Proc. of the 19th International Symposium of the German Botanical Society. Biodiversity and Evolutionary Biology, Vienna, Austria, 16–19 September 2010, p. 39.

Książczyk T., Zwierzykowska E., Taciak M., Zwierzykowski Z. (2008). Physical mapping of rRNA genes in triploid hybrids of *Festuca pratensis* × *Lolium perenne* using GISH and FISH. II Ogólnopolska Konferencja: Genetyka i Genomika w Doskonaleniu Roślin Uprawnych – od Rośliny Modelowej do Nowej Odmiany, Poznań, Poland, 24–26 listopada 2008, Streszczenia Referatów i Plakatów, p. 12 (L-12).

Książczyk T., Eber F., Huteau V., Coriton O., Chèvre A.M. (2007). How to characterize chromosome rearrangements occurring during oilseed rape stabilization? Réunion Cytogénétique et Polyploidie, Clermont-Ferrand, France, 18–20 Avril.

Maluszynska J., Hasterok R., **Książczyk T.** (2005). Genom *Brassica napus* w badaniach cytogenetycznych. XXVII Konferencja Naukowa „Rośliny Oleiste”, Poznań, Poland, 12–14 kwietnia 2005, Streszczenia, p. 8-11.

Conference presentations (posters):

Urbaniak Z., **Książczyk T.** (2011). *Daphne mezereum* L. as an object of populational and cytogenetic studies. Proc. of the 2nd Conference on Research and Education of the Faculty of Biology of the Adam Mickiewicz University. Challenges for Contemporary Biology, Biotechnology and Environmental Protection, Poznań, Poland, 5–7 April, p. 145.

Zwierzykowski Z., **Książczyk T.**, Kosmala A., Zwierzykowska E., Taciak M. (2011). Mieszzańce międzyrodzajowe *Festuca* ssp. × *Lolium* spp. (*Festulolium*) – stan badań i perspektywy. Ogólnopolska Konferencja Naukowa: Nauka dla Hodowli i Nasiennictwa Roślin Uprawnych, Zakopane, Poland, 7–11 lutego. Streszczenia, s. 111.

Książczyk T., Taciak M., Zwierzykowski Z. (2010). rDNA loci patterns in triploid and tetraploid hybrids of *Festuca pratensis* × *Lolium perenne*. Abstracts of the 1st *Festulolium* Working Group Workshop, Poznań, Poland, 7–8 October, p. 19.

Tesarikova Z., Eber F., Huteau V., Khaitova L., Coriton O., **Książczyk T.**, Chèvre A.M., Kovarik A. (2010). Immediate epigenetic reprogramming of nucleolar organizer regions (NORs) in synthetic lines of *Brassica napus*. Proc. of the 19th International Symposium of the German Botanical Society. Biodiversity and Evolutionary Biology, Vienna, Austria, 16–19 September 2010, p. 120.

Książczyk T., Taciak M., Zwierzykowski Z. (2010). Wykorzystanie sekwencji 5S i 45S rDNA do identyfikacji chromosomów u mieszańców *F. pratensis* × *L. perenne*. III Polski Kongres Genetyki, Lublin, Polska, 12-15 września 2010. Streszczenia, s. 220.

Bzdęga K., Janiak A., **Książczyk T.**, Tokarska-Guzik B., Szarejko I. (2010). Genetic diversity and hybridization in Polish invasive populations of *Ambrosia artemisiifolia*. Proc. of the 6th Neobiota Conference. Biological Invasions in a Changing World – from Science to Management, Copenhagen, Denmark, 14–17 September, p. 194.

Książczyk T., Majewska M., Wiśniewska H., Gruszecka D., Apolinarska B., **Łapiński M.** (2009). Chromosomal analysis of *Secale cereale* × *Dasypyrum villosum* amphiploid and its parents by use of cytogenetic methods. Proc. of the 4th Conference of Polish Society of Experimental Plant Biology: Experimental Plant Biology. Why not?! Kraków, Poland, 21–25 September 2009, p. 78.

Taciak M., **Książczyk T.**, Zwierzykowska E., Zwierzykowski Z. (2009). Genome recombination in triploid hybrids of meadow fescue (*Festuca pratensis* Huds.) with perennial ryegrass (*Lolium perenne* L.). Proc. of the 4th Conference of Polish Society of Experimental Plant Biology: Experimental Plant Biology. Why not?! Kraków, Poland, 21–25 September 2009, p. 82.

Książczyk T., Kovarik A., Eber F., Huteau V., Coriton O., Chèvre A.M. (2009). Dynamic of ribosomal genes during the stabilization of synthetic oilseed rape. Proc. of the International Conference on Polyploidy, Hybridization and Biodiversity, Saint-Malo, France, 17–20 May 2009, p. 113.

Książczyk T., Eber F., Huteau V., Coriton O., Chèvre A.M. (2008). Tandem and dispersed repeat sequences as an effective marker of chromosome rearrangements occurring during oilseed rape stabilization. II Ogólnopolska Konferencja: Genetyka i Genomika w Doskonaleniu Roślin Uprawnych – od Rośliny Modelowej do Nowej Odmiany, Poznań, Poland, 24–26 listopada 2008, Streszczenia Referatów i Plakatów, p. 59 (L-15).

Książczyk T., Ryder C., Maluszynska J. (2006). Porównanie poliploidyzacji w kalusie diploidalnych i allotetraploidalnych *Brassica*. XI Ogólnopolska Konferencja Kultur *In Vitro* i Biotechnologii Roślin „Kultury *In Vitro* Podstawą Biotechnologii Roślin”, Międzyzdroje, Poland, 6-9 września 2006, Streszczenia Referatów i Plakatów, p. 141–142.

Hasterok R., **Książczyk T.**, Wolny E., Maluszynska J., Heneen W.K. (2006). Analysis of *Brassica* genomes using fluorescence *in situ* hybridization. Proc. of the Plant and Animal Genomes XIV Conference, San Diego, CA, USA, 14–18 January 2006, p. 204 (P411).

Ksiażczyk T., Ryder C., Maluszynska J. (2005). The use of *Brassica oleracea* BAC clones in physical mapping of *Brassica campestris* and *Brassica napus* chromosomes. Proc. of the 8th Gatersleben Research Conference “*Genetic Diversity and Geneome Dynamics in Plants*”, Gatersleben, Germany, 2–6 June, p. 112.

Ksiażczyk T., Maluszynska J. (2004). Analysis of rapid-cycling *Brassica* in *in vivo* and *in vitro* conditions. Przyroda Polski w Europejskim Dziedzictwie Dóbr Natury. 53 Zjazd Polskiego Towarzystwa Botanicznego, Toruń, Bydgoszcz, Polska, 6–11 września 2004, Streszczenia Referatów i Plakatów, p. 12.

Karcz J., **Ksiażczyk T.**, Maluszynska J. (2004). Epicuticular Wax Patterns on *Brassica* plants in *in vivo* and *in vitro* conditions. Przyroda Polski w Europejskim Dziedzictwie Dóbr Natury. 53 Zjazd Polskiego Towarzystwa Botanicznego, Toruń, Bydgoszcz, Polska, 6–11 września, Streszczenia Referatów i Plakatów, p. 117.

Maluszynska J., Hasterok R., **Ksiażczyk T.**, Wolny E. (2003). Chromosome identification of allotetraploid species; an example of *B. juncea*, Kew, London, United Kingdom, 27–30 April 2003, Book of Abstracts, p. 26.

Fras A., **Ksiażczyk T.**, Nowak K., Maluszynska J. (2002). The Comparison of Somatic Embryogenesis in Diploid and Tetraploid Plants of *Arabidopsis thaliana* and *Crepis capillaris*. Sexual Plant Reproduction in Nature and the Laboratory. Proc. of the XVII International Congress on Sexual Plant Reproduction, Lublin, Poland, 9–13 July, p. 53.

Ksiażczyk T., Nowak K., Maluszynska J. (2001). Ploidalność *Crepis capillaris* a regeneracja *in vitro*. Botanika w Dobie Biologii Molekularnej. 52 Zjazd Polskiego Towarzystwa Botanicznego, Poznań, Polska, 6–9 września, Materiały Sesji i Sympozjów, s. 163.

Local co-operation:

- Laboratory of Resistance Genetics, Institute of Plant Genetics Polish Academy of Sciences, Poznań
- Laboratory of Distant Hybrids, Institute of Plant Genetics Polish Academy of Sciences, Poznań
- Department of Plant Cytology and Embryology, Institute of Botany, Jagiellonian University, Kraków
- Department of Plant Systematics, Faculty of Biology and Environmental Protection, University of Silesia, Katowice
- Department of Plant Anatomy and Cytology, Faculty of Biology and Environmental Protection, University of Silesia, Katowice
- Department of Plant Genetics, Breeding and Biotechnology, West Pomeranian University of Technology, Szczecin

International co-operation:

- Institut National de la Recherche Agronomique (INRA), Le Rheu, France
- Warwick HRI, Wellesbourne, Warwick, UK
- Laboratory of Molecular Cytogenetics and Cytometry, Institute of Experimental Botany, Olomouc, Czech Republic

Other scientific activity:

Polish Botanical Society (PTB) – a member (since 2005)

Polish Genetics Society (PTG) – a member (since 2009)

Private interest:

Poetry, Foreign languages, Tourism (PTTK member), Skiing, Ancient Egypt: the mythology