Robert Czajkowski, Appli Micro Open Access 2017, 3:2(Suppl)
DOI: 10.4172/2471-9315-C1-004

Robert Czajkowski

University of Gdansk and Medical University of Gdansk, Poland

Biological control of plant pathogens with the use of beneficial bacteria and lytic bacteriophages - fact or fiction?

It is forecasted that the world population will reach 10 billion people by 2050. Overpopulation, climate instability and plant pest and diseases are directly responsible for increasing global hunger. It is estimated that more than 60% of the human population is starving and plant diseases play a major role in food shortages worldwide. Global loss of staple crops due to plant pathogens is predictably estimated to be as high as even 40 percent. Potato (*Solanum tuberosum* L.) is one of the most important staple food crops worldwide and the fourth main food crop after rice, maize and wheat. The area of potato cultivation is rapidly increasing especially in developing regions. In Europe potato has always been recognized as an significant food crop. Intensive potato cultivation together with the international potato tuber market may result in the increased risk of transmission and spread of potato diseases that lead to decrease of crop quality and yield. Diseases caused by pectinolytic bacteria: blackleg during potato cultivation and soft rot of potato tubers in storage and transit are among the most important bacterial diseases leading to substantial losses in potato production in Europe and worldwide. Traditional pathogen control methods based on chemical and physical applications are insufficient to cure infected potato tubers from pectinolytic bacteria as well as they are unable to prevent spread of the pathogens in the field. Biological (environmentally friendly) control of plant pathogens could be an alternative to chemical and physical approaches. We are eager to develop new biological control strategies based on the use of beneficial bacteria and bacteriophages in order to prevent buildup of the pathogen populations in potato tubers. This presentation acknowledges past and present work on biological control of potato pathogens – pectinolytic bacteria, with the major focus on research leading to commercialization.

Biography

Associated Professor at University of Gdansk, Poland. He is a graduate of Intercollegiate Faculty of Biotechnology, University of Gdansk and Medical University of Gdansk in Gdansk (2006). In 2006 he received a year-fellowship from EU Marie Curie Early Stage Research programme and from 2006 till2007 he worked as a visiting scientist at the Max Planck Institute for Terrestrial Microbiology in Marburg, Germany. Scholar of doctoral studies at the Netherlands Institute of Ecology, the Royal Netherlands Academy of Sciences in Wageningen, the Netherlands (2007-2011). Postdoctoral researcher at Wageningen University and Research Center - Plant Research International in Wageningen, the Netherlands (2011- 2012), Assistant Professor in the Department of Biotechnology in the Intercollegiate Faculty of Biotechnology, University of Gdansk and Medical University of Gdansk (2012-2016). In 2013 received a fellowship from the Ministry of Science and Higher Education for outstanding young scientists (2013-2016) and in 2014 fellowship from The Foundation of Polish Science in the EU Skills Mentoring Programme. Between 2013 and 2015 was a Secretary of Polish Society of Experimental Plant Biology, Presently, a member of The Council of Young Scientists at the Ministry of Science and Higher Education and a member of editorial board of BioTechnologia and Journal of Plant Pathology.

Robert.czajkowski@biotech.ug.edu.pl

Notes: