

3rd Global Microbiologists Annual Meeting

August 15-17, 2016 Portland, Oregon, USA

Plant parasitic weed endophytic bacteria triangle

Lilach Iasur Kruh^{1,2}, Jacline Abu-Nassar¹, Shiri Freilich¹ and Radi Aly¹

¹Agricultural Research Organization, Israel

²ORT Braude College, Israel

Phelipanche and *Orobanche* species (broomrapes) are holoparasitic plants that connect to the vascular systems of their hosts, allowing the transfer of various substances including a possible exchange of endophytic bacteria that inhabit the internal tissues of both plants. To shed light on the microbial aspects of the parasitic interaction between *Phelipanche aegyptiaca* and its host, tomato, we characterized the endophytic composition in both plants before and after attachment using mass sequencing analysis. Endophyte communities of the parasitic weed were significantly different from that of the non-parasitized tomato root but no significant differences were observed between the parasite and its host, parasitized tomato root, suggesting bacterial exchange between these two plants. In addition to molecular analysis, isolation of endophytic bacteria from the parasitic weed-host plant system enabled to examine whether these isolates can affect the dynamics of host-parasite interaction. Endophytic bacteria isolates were examined for their ability to secrete substances that may affect the dynamics of this system and indeed, a few isolates inhibit the growth of the parasitic weed. The current study focuses on the bacterial aspect of host-parasite interaction and highlights the potential of exploiting alternative environmentally friendly approaches for parasitic weed control.

Biography

Lilach Iasur Kruh has completed her PhD from the The Hebrew University of Jerusalem and Postdoctoral studies from Newe Yaar, Agricultural Research Center, Israel. She is presently a Researcher and Lecturer at the Department of Biotechnology Engineering, ORT Braude College. Her field of interest is beneficial endophytic bacteria in agriculture. She has published seven peer reviewed papers and lectured in various international conferences.

iasur@braude.ac.il

Notes: